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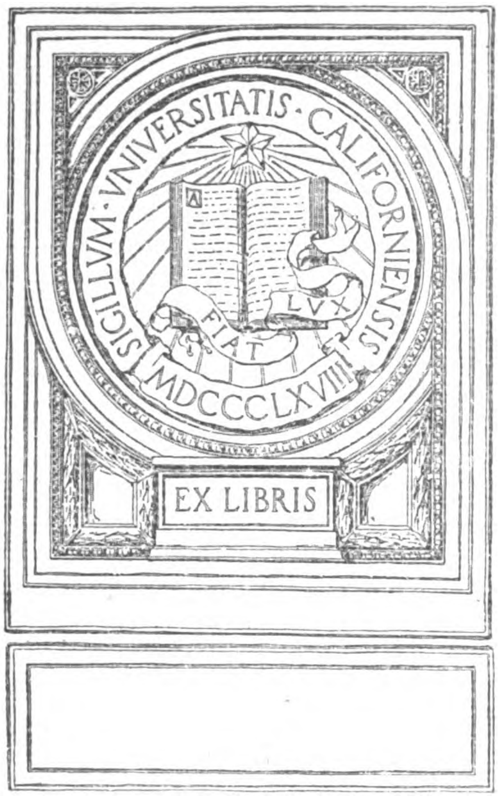

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A WEEKLY
ILLUSTRATED JOURNAL
OF
ART,
CIVIL ENGINEERING,
AND
BUILDING.

Architectura est scientia pluribus disciplinis et variis eruditionibus ornata.—VITRUVIUS.

UNIV. OF CALIFORNIA

VOL. XCI.

JANUARY TO JUNE 1914.

LONDON:
PUBLISHED AT IMPERIAL BUILDINGS, LUDGATE CIRCUS, E.C.

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P.23
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UNIV. OF
CALIFORNIA

THE

ARCHITECT

AND

CONTRACT REPORTER.

VOL. XCI.

277133

PRINTED BY
SPOTTISWOODE AND CO. LTD., LONDON
COLCHESTER AND ETON

THE
ARCHITECT
AND CONTRACT REPORTER.
A JOURNAL OF ART, CIVIL ENGINEERING & BUILDING.

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FORTHCOMING EVENTS.

Monday, January 5.

Royal Institute of British Architects : Special General Meeting on Registration (continued).

Tuesday, January 6.

Nottingham and Derby Architectural Society : Exhibition and Criticism of Designs for "A Jacobean Hall," by Mr. A. W. Brewill, F.R.I.B.A., at 8 P.M.

Wednesday, January 7.

Carpenters' Hall : Paper entitled "Building—a Creative Craft," by Mr. M. H. Baillie Scott, at 7.45 P.M.

Institute of Sanitary Engineers : Presidential Address by Mr. John D. Watson, M.Inst.C.E., at 8 P.M.

Thursday, January 8.

Sheffield Society of Architects and Surveyors : Paper entitled "Furnishing and Decorating from a Practical Standpoint," by Mr. C. E. Friend, at 7.30 P.M.

Concrete Institute : Paper entitled "Factory Construction," by Mr. Percival M. Fraser, A.R.I.B.A., M.C.I., at 7.30 P.M.

Saturday, January 10.

Institution of Municipal Engineers : Annual Dinner and Meeting of the Northern District at Newcastle.

ENGLISH CHURCH ARCHITECTURE.

As there are many different starting-points from which the study of English church architecture can be pursued, it is only natural that we should have a constant succession of books suited for different classes of students, offering guidance along various paths. In the latest production [*] by Mr. Francis Bond, which he modestly terms "An Introduction to English Church Architecture," we have as the basis of treatment what should, we think, be the preferable starting-point for the study of any particular building or class of buildings, that is, the use to which such buildings are to be put. Mr. Francis Bond claims for his latest book that it is intended not so much for the professional student as for the great body of readers who nowadays are interested in Mediæval architecture and wish to obtain some general knowledge of it. He has therefore attempted an account which, without ceasing to be thorough and detailed, should be elementary in character, and with that intent has eliminated technical terms where possible.

The scheme of study which these volumes recommend starts first of all, as we have said, with a consideration of the purposes which English churches have been built to fulfil, and then proceeds with a consideration of the various types of plan evolved to meet the requirements of varied usage. Having treated of plan, the author goes on to explain the uses of the dominant constructional elements in English church architecture—vaulting, abutment systems, walls and arches, the pier and its members, the lighting of mediæval churches, doorways and porches, the triforium and bay design, protection from rain, towers and spires.

The complete account of English church architecture is scarcely within the compass of any one book and would need a library of several volumes. The extraordinary profusion with which churches were built throughout England in the Middle Ages has provided a field of study which it is physically beyond the power of any one man to cover, and therefore a very complete account can hardly be regarded as other than an introduction. There are still over 10,500 churches in England (excluding chapels) of mediæval foundation. Many of the churches must always have been very much greater in size than could be filled by any possible congregation.

The vast majority, whether in town or country, were parish churches built mainly for congregational use, but there was a second class of churches of far greater scale and importance which were not designed for congregational use, or only so used to a very limited extent. These latter were built in order that instead of one daily service, little more than which was in those days customary in a parish church, there might be a long round of services by night as well as by day. They were churches in which, at short intervals, prayer and praise were ever being offered to God—churches, we may say, of Perpetual Adoration. For the purposes of these services a residential choir was needed, as well as one or more priests to administer the Eucharist.

The establishments by which these residential choirs were furnished were the various orders of monks—the

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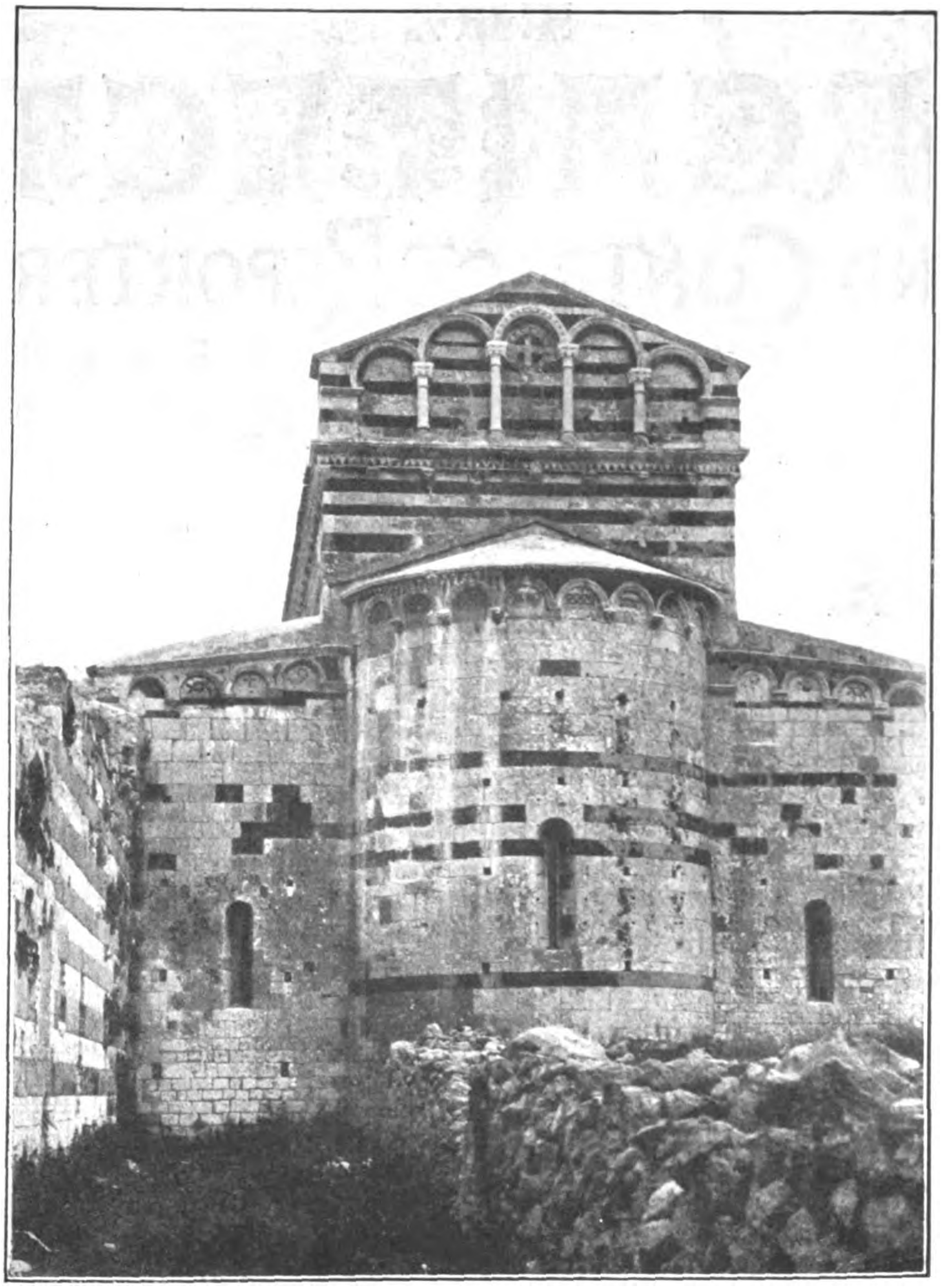
[*] *An Introduction to English Church Architecture, from the Eleventh to the Sixteenth Century.* By Francis Bond, M.A., F.G.S., Hon. A.R.I.B.A., formerly exhibitioner of New College, and scholar of Lincoln College, Oxford, author of "Gothic Architecture in England," "Cathedrals of England and Wales," "Screens and Galleries in English Churches," "Fonts and Font Covers," "Stalls and Tabernacle Work," "Misericords," "Westminster Abbey." With 1,400 illustrations. In two volumes. (Humphrey Milford, Oxford University Press, London, New York, Toronto, Melbourne, and Bombay. 42s. net.)



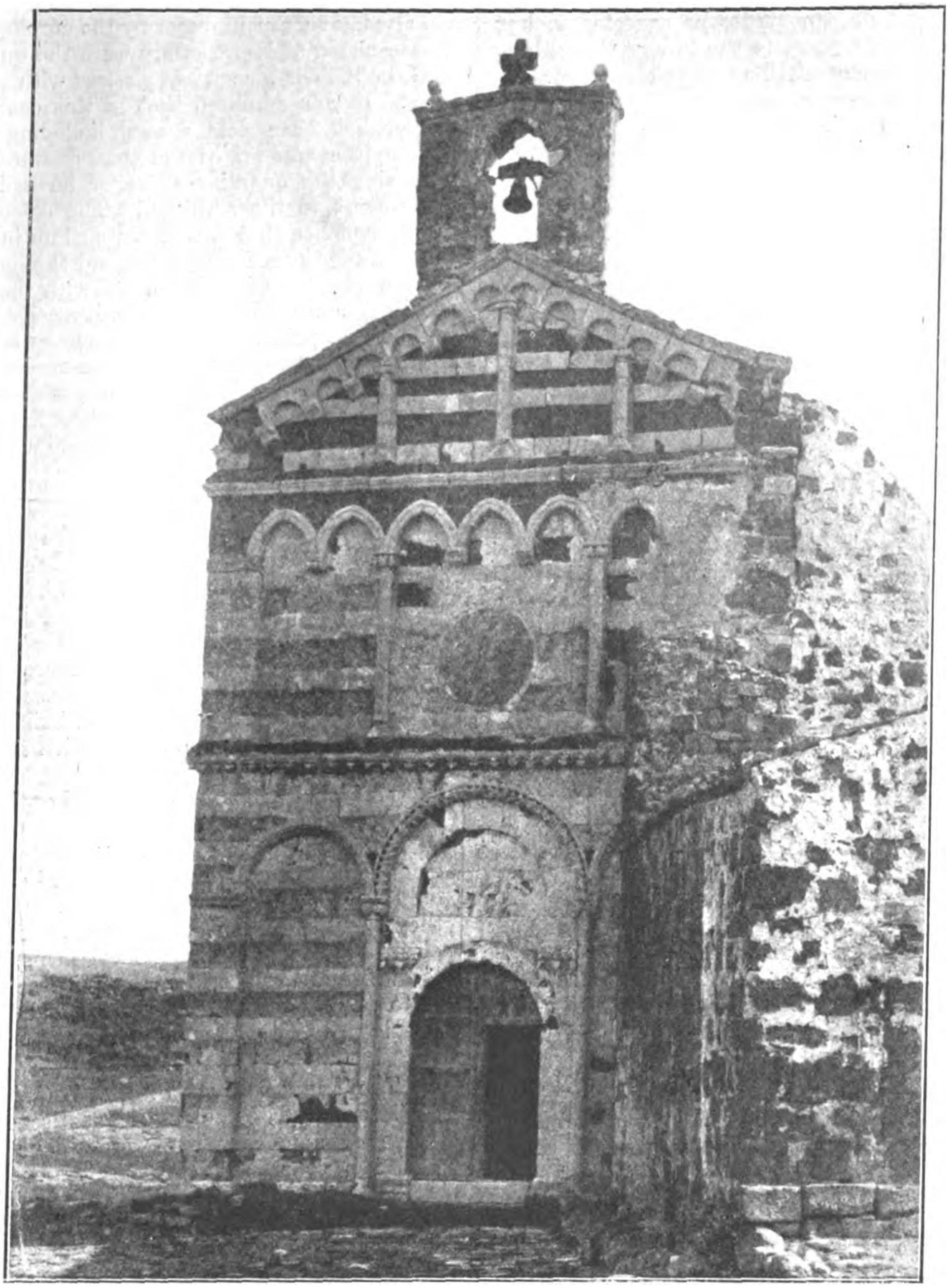
S. PIETRO DI SORRES, BORUTTO (SARDAIGNE).—(Per favour of Signor ING. SCANO to Professor MELANI.)

four great orders of Benedictines, Cluniacs, Cistercians, and Carthusians; then the Canons Regular, the Austin or Black Canons, the Premonstratensian or White Canons, and the Gilbertines. Then we have also the communities of friars—the Dominicans or Black Friars, the Franciscans or Grey Friars, and the Austin Friars. There were also the military orders of the Knights Templars and the Knights Hospitallers of St. John of Jerusalem, and in addition to these there was yet another very important and very ancient body of clergy—the Secular Canons. Each of these various orders and corporations modified to a greater or lesser extent the type of plan which had been adopted by their predecessors, or we may say the basilican plan as evolved in the earliest days of Christianity, for each of them differed somewhat in their rules and in their customs. Special examples of such variations in plan are those of the Cistercian order and of the Knights Templars. There were, however, in all these great mediæval churches certain requirements more or less common to all; the presbytery, the choir, the nave and the transepts, and particularly the processional path.

Whilst the churches of the great monastic orders are the largest and the most important, it is, however, the parish churches of England which provide the fullest variety of treatment. Not only are there the influences of the original foundation, but in every case there have been the varying requirements leading to future modification, enlargement, and more or less rebuilding.

One of the most important and interesting points in connection with the planning of English churches is the preference given to the square east end over the apsidal end, or, in larger buildings, the periapsidal chevet. We are not able to follow Mr. Francis Bond in his explanation of the reversion after the Norman period in English church plans from the apsidal to the square end. Mr. Bond urges that one reason may be that the apsidal plan was ultimately abandoned by reason of the bad lighting of a church so planned, and he lays stress on the importance in the design of the mediæval church of the necessity of improving its lighting, and, above all, the lighting at the east end of the church, where was situated the high altar. We may point out, with reference to this, that neither the high altar in its present form, nor Edward the Confessor's Chapel at Westminster, is badly lighted, so that, in the best example of a periapsidal chevet still left to us in England, the inadequacy of light cannot be supposed to be a reason for the abandonment of an apsidal end.

Another possible reason which Mr. Bond advances is



SMALL CHURCH ON THE ISLAND OF SARDAIGNE.—(Per favour of Signor Ing. Scano to Professor Melani.)

that in England there was a ritualistic difficulty which does not seem to have been felt abroad. He points out that when there were three radiating chapels, two of them did not point due east; where there were five, seven, or ten, still only one pointed due east—in other words, of the radiating chapels only one was planned so as to have its altar correctly orientated. There certainly is something to be said for this point of view, for throughout the whole history of English church building orientation was regarded as important to a far greater extent than was ever observed on the Continent, and it is notable in this connection that in the apsidal ends of Norman cathedrals the secondary apses were very frequently planned with their axes parallel to the main axis of the church, and thus their altars were correctly orientated. This, however, did not universally apply even in English apsidal examples. We are rather inclined to believe that the reversion to the square east end was a revival of the influence of the type of church used in Anglo-Saxon times, which is usually denominated the "Celtic" type of plan. It is readily conceivable that when the Norman conqueror became merged in the Englishman, the particularly English type of church plan should reassert its traditional features, and from this so-called Celtic plan we can very well believe that English church-planning subsequent to the twelfth century derived two of its prominent features—the east end and the south porch.

Mr. Bond's latest book is very fully and excellently illustrated with photographs, plans, measured drawings, and perspective sketches, and these make his explanations of the reasons, ritual and constructional, for the development of English church architecture both attractive and easy of comprehension.

NOTES AND COMMENTS.

We are amused at the terms of the motion which Mr. G. A. T. Middleton (A.) has given notice that he will move at the general business meeting of the Royal Institute on the 12th inst. as follows: "That this Institute do support to the utmost the Architects' Registration Bill which is to be introduced into Parliament next session." We wonder how many members of the Institute are in possession of the terms of the Bill which is to be introduced and whether it is likely that they approve of the terms of that Bill. However enthusiastic one may feel with regard to the desirability of architectural registration one can hardly be expected to buy a pig in a poke and "support to the utmost" anything that the Society of Architects likes to put forward.

It is really time to cease taking Mr. March Phillipps seriously. As we have before pointed out, he starts from the basis of ignorance in his exaltation of what he supposes to have been the administrative process by which mediæval buildings were brought into existence. He now, in his latest reply to the numerous architects and others who have been beguiled into filling the columns of *The Morning Post* at a dull season of the year, reveals still further ignorance by putting forward the proposition that science and intellect came into the world with Greek civilisation. He says:

"All our advances in knowledge, all our science, have been derived, as we often say, from Greek sources; not that the science itself is Greek, but that the Greeks were the first who taught that use of the mind. It is like a kind of dawn, white and cool after a night of Egyptian darkness, this stealing of Greek thought into the dull routine of life. Intellect is the weapon with which we cope with circumstances, and what the Greeks taught was that it is man who is master of circumstances, not circumstances that are the masters of man. And just as we, looking back across the ages, can recognise this intellectual advent as distinctly as if we were watching a man enter a room, so, too, when the anarchy of barbarism drew to an end in Europe and the long disused habit of thinking and reasoning began to declare itself, the men of the Renaissance, looking back in the same way across the stormy intermediate gulf, recognised their kinsmen of the mind in those earlier thinkers and reasoners. I believe that the intellectualism of the Greeks is testified to by the events of the world's history and needs no proof of mine. But equally true is it, and equally a matter of common knowledge, that at intellectualism they were content to stop. Spiritual aspirations and divinations, the consciousness of an inward illumination arising rather out of intuition than reason, the apprehension of the spiritual faculty as a source of knowledge, were ideas strange to the Greeks. They hated mystery, vagueness, half glimpses which are the characteristics of spiritual vision, as much as they loved the exactitude, definiteness, and clear distinctions which are the characteristics of intellectual vision."

Mr. Phillipps' knowledge of ancient learning appears to be on a par with his real comprehension of mediæval life. It is apparently beyond his ken that the Egyptians were, as we now know, at least equal, if not superior, to the Greeks in their knowledge and application of science and in their intellectuality. We have also in the Egyptians the dominance of what Mr. March Phillipps describes as "spirituality." There was in the Egyptian religion all those elements which, in his opinion, make Gothic superior to Greek and its derivatives. Therefore, if there is any potency at all in Mr. Phillipps' arguments it is to the architecture of Egypt that we should turn for admiration and example rather than to either Greek or Gothic, although not even then are we to copy the models of that which we are to admire and emulate.

Two cases in provincial courts throw some light upon the legal position of quantity surveyors. At the Manchester County Court an architect who also prepared quantities sued the contractors for payment of fees, and it was given in evidence on behalf of the plaintiff that it was the custom of the trade for the contractor to pay for the bills of quantities out of his first cash payment, and the contractor was liable to the architect whether he himself was paid or not. In the defence it was pointed out that according to the rules of the Royal Institute the surveyor's fees were only paid out of the first payment to the contractor when they were specifically included in the certificate on which payment was made. The Judge in this case gave judgment for the defendants, but it must be noted that part of the defence was that the plaintiff had already been paid direct by the employers. The other case occurred at Newcastle, where the quantity surveyor sued the builder for surveyor's fees with respect to quantities. It was admitted that in this case the defendant builder had been paid a sum including the surveyor's fees on the amount of the first certificate, but instead of paying the quantity surveyor he had paid them by instalments to the architect. The defendant submitted in the evidence that it was the custom in the North that the surveyor's fees should be paid through the architect, and he had acted in accordance with that custom. The architect admitted that he had received the fees, but had not yet paid them to the quantity surveyor. In the result judgment was given for the plaintiff, thus making it clear that the builder was liable to pay to the quantity surveyor and that the fact that he had already paid to the architect did not exonerate him from the proper course.

We are glad to note that the Crafts Committee of the King Edward VII. School of Art, Armstrong College, Newcastle, have decided to hold, in 1914, exhibitions of the artistic productions of the area of which Newcastle is the centre—the area broadly defined by the triangle Berwick, Carlisle, Middlesbrough. The artistic productions fall into three categories—those related to architecture and the decoration of buildings; those which are for personal use; and those which are related to printing.

Such exhibitions cannot be otherwise than beneficial provided the standard is maintained of sufficiently high character as in this case. "The space available for exhibition is small, and consequently the exhibits must only be choice specimens of work. It is important that they should be genuine local productions, and not made elsewhere to the order of local firms, even if from the local firm's designs, for the purpose of the exhibition is to stimulate local production, and the interest of the people in the productions of their own locality."

The annual report of the Yorkshire Federation of Building Trade Employers, just issued, testifies to the value of much practical work done during the year, and has some pertinent observations on the effect of recent legislation, in relation to industrial unrest.

Difficulties in the administration of the National Insurance Act and cases of malingering for workmen's compensation again receive attention, while the Trade Disputes Act is cited as a powerful incentive to industrial unrest, unconscionable demands, and reckless strikes, public interest having been ignored and consideration for workmen in other industries disregarded.

The Finance Act also comes in for condemnation. Unfair burdens have been placed on the building trade by special taxes peculiar to it, while members still have to pay on profits usually assessable for income-tax purposes. Many cases of injustice arising from undeveloped land duty were reported. "It is obvious," says the report, "that the Finance Act has been the greatest potential deterrent to building developments." As to housing schemes, mention is made of a local authority's proposal to build cottages the estimated cost of which revealed a considerable loss per annum during the period of sixty years covered by the loan. It is submitted that the cost by private enterprise is considerably less than by direct labour. Whereas before the Act the number of workmen's cottages built averaged 88,000 per annum, the number has since fallen to 15,000.

ILLUSTRATIONS.

PISA AND OTHER TOWNS IN TUSCANY.

A DESCRIPTION of the various buildings around Florence illustrated by our plates will be found in the article by Professor Melani.

AROUND FLORENCE (TUSCANY).*

GREAT ARCHITECTURE AND SMALL TOWNS.

By Professor Alfredo Melani.

The Surroundings.

A striking peculiarity of ancient Italian architecture is the abundance of monuments around large towns, and sometimes even the artistic grandeur of two neighbouring towns, as happens in Tuscany with Florence and Sienna. Indeed, no one, after having visited Florence, as celebrated for its art as for its troubled history, would think that quite close, only a short distance away, is to be found Sienna, with its monuments and its political and artistic autonomy, which has given it individuality as a centre of life and art. If you journey to the other side of Sienna, to Pisa—"la Ville Rouge," as Paul Bourget called it—surprised by its brick constructions, your impression becomes one of astonishment, which increases as you visit the surrounding towns. Three large cities—Florence, Sienna, and Pisa; and near by such towns as Lucca, Pistoja, Prato, Arezzo, and, in the same direction as Lucca, Carrara, famous for its marble mountains. And here we must at once take care not to fall into a possible error, for it is a question not of Renaissance architecture, but of Mediæval, a fact which may bewilder those who have considered Tuscany the principal region of fifteenth and sixteenth-century architecture. It is true that Brunelleschi, Alberti, Michelozzo, Rossellino, and Sangallo were born in this beautiful part of the peninsula of which Florence is the centre, or received their education there, and that Tuscany is the source of Renaissance architects; but that does not prevent the existence of a flourishing local Mediæval architecture which for a long time did not occupy the place in national history and artistic education to which it was entitled. In thinking of Florence, your thoughts immediately turn to the different buildings which bear witness to the fame of Brunelleschi and Alberti; on the contrary, Florence and Tuscany are going to be claimed for the Middle Ages. Indeed, it was at Florence that Ruskin discovered the most beautiful monument in the world—that which unites in the highest degree the characteristics of strength and beauty which elsewhere are to be found, some in one and some in another architectural work; and this monument, the Campanile known as Giotto's, is a model of Mediæval architecture. Ruskin, in his "Lamps," says: "I remember well how, when a boy, I used to despise that Campanile, and think it meanly smooth and finished. But I have since lived beside it many a day, and I shall not soon forget how profound and gloomy appeared to me the savageness of the Northern Gothic."

And the great English critic lived for a considerable time near the cathedral of Pisa, of which he made observations sufficing to lead us at his pleasure towards Mediæval art, of which he speaks like a prophet.

Thus we have a monumental Tuscany which adds its Mediæval monuments to the more celebrated ones of the Renaissance; a Tuscany which has its own customs and speech, at which ignorance smiled yesterday, but which to-day enlighten darkness, as majestic in the world as in the stirring and progressive mind of to-day. Gothic is, above all, not to be found in the small towns; Gothic has not conquered the country districts whose "stones" have seen the Comacini masters—the force and geniality of those artists in the phase of architecture and ornamentation which is called Romance or Romanesque, but which is really Lombard. For it is of the Lombard style that I wish now to speak, and of the "Comacini"—those Lombard masters whose corporation has become celebrated in the history of art, and who at first sight have some connection with the legend. Besides, in Italy Gothic has been adopted principally in large buildings, cathedrals, and town halls, and although our country tried hard to admit this style, Latin traditions prevailed.

The Byzantine style received a striking baptism in Italy at Ravenna—that Italian-Byzantine Pompeii where the different monuments of this style have been restored and discovered; but in some regions, above all in Tuscany, Byzantine art, particularly in architecture, was shut out. From that time forward the impulse of the Lombard style, which succeeded in chronological order the Basilican and Byzantine styles, took their place in the small towns of Tuscany, which cannot be associated with towns rich in Gothic, such as Florence and Sienna. It is a question of monuments which, descending in scale from the grandeur of Pisa Cathedral, a Lombard monument, corresponding in some measure to the solemnity of the Gothic cathedrals in Florence and Sienna, include the small churches of Lucca and Pistoja. At Pistoja, those of St. Andrew, St. Peter, and St. Bartholomew, secondary monuments from the point of view of space occupied, but of high artistic importance. Even Lucca and Pistoja possess justly famed cathedrals, and Pistoja has only herself to blame for having transfigured her cathedral of SS. Martino and Zenone by reducing it to a mere remnant of its former self; but Lucca is ornamented with one of the most beautiful cathedrals, that of S. Martino of the Peninsule, a typical building of the Lombard style which leaves no desire for a Gothic cathedral, with its monuments of the *Lucchesia*, a triumph of the Romanesque style and of that Lombard corporation—the "Comacini." It is a curious fact that this noble Tuscany enjoyed a very pronounced artistic autonomy, a historical detail by no means insignificant for those who do not content themselves with a superficial knowledge of the things they see. Thus these "Comacini" of Lombardy had the strength to substitute the term "Lombard" for the expression "Romanesque," which characterised architecture previous to Gothic, and so caused the "cachet" and development of this architecture to bear witness to their initiative and energy. It is consequently unfortunate that the too generic locution "Romance or Romanesque style" (*romanzo* or *romanico*) should be adopted by those writers who are not particular as to exactitude, and who do not consider sufficiently the precise signification of a word which can, and does, fulfil a great determinative function. I say this apart from any national or local sensibility, which, thank Heaven, has no place in my mind, for I am like Voltaire; for me "il n'y a plus de Pyrénées."

The "Comacini."

All architectural treatises which have come down to us from the Middle Ages mention the "Comacini," *i Maestri Comacini*. I have myself studied the "Comacini" in my *Manuale d'Architettura Italiana*, fifth edition, page 202, who became scattered, like flowers in an imaginary garden, all over Italy and also abroad, carrying with them wherever they went their artistic taste and consummate skill. Of Lombard origin—not of Como, the delightful city near Milan, nor, as has been stated, of the Comacine Isle, home of poetic thoughts, a mirror of beauty for those who understand Nature's grand music—of Lombard origin, the "Comacini" had their birth on the borders of the Lombard lakes, which do not only include the three celebrated lakes of Como, Maggiore, and Lugano (which was then entirely in Italian soil), but also several smaller lakes, such as Lecco, Varese, Pusiano, which, enlivened by numerous villages, give a touch of harmony and vitality to the Lombardian landscape. Thus the "Comacini" have established an unending race of artists, which has persisted through the centuries and which still continues to-day, if one bears in mind the artistic disposition of those Lombard tribes of the lakes who leave their native land and, filled with hope, like the little Savoyard who,

> S'en allait à travers les grands chênes
> Se tournant quelquefois et n'osant pas pleurer,

follow in the world the arts of the decorator, stucco-worker, stone-mason, mason or architect—in the case of those who have studied; modifying, also, the contempt of foreigners for the Italians who dishonour their native land when abroad by continual singing and pursuing ultra vulgar trades. And now those monuments which were previously referred to with scorn as barbarous edifices are to-day esteemed for their agreeable lines and suggestive ingenuity. Many of the "Comacini" were organised by Lombardic laws in the reign of King Rotari († 652), to whose time the earliest references to this body go back. They were then organised by Luitprando († 743), the Lombard king celebrated in our history for his *Memoratorio* of the *Mercede Commacinorum*, a legislative code concerning the "Comacini" ædileship, which one might believe to have been drawn up by a modern meticulous and wise legislator. Lastly, these "Comacini," from family to family, from one generation to the next, constitute the unending race which I have before mentioned, the largest and most celebrated ædilitary organisation ever known in any country or at any time in the world.

An Italian author possessed of more goodwill than capacity or time to write on the "Comacini," the late Giuseppe Merzario, published a few years ago a work on the *Maestri Comacini*; and although this book is less than mediocre, his birthplace, Asso in Brianza, gave the name of Merzario to the principal street and that of *Maestri Comacini* to a sunny street running parallel to the mountains on the south side of Lake Lecco. I mention this as an example of the interest, almost pride, which we take in the "Comacini," who are the masters of the Lombard style, travelling artists and colonists as were the Phœnicians in ancient times, and as the English are to-day in an entirely different range of ideas; and, if you wish, coming back to architecture, as the Cistercian monks in Gothic style and the Jesuits in Baroque, in due proportion, of course.

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* See Illustrations.

Where did these "Comacini" learn art? With whom did they learn it? Who were their instructors? Dante would ask. Their native intelligence and practical experience? Did Turner have a master? The "Comacini," more fortunate than he, met with full sympathy from their earliest days; and wherever they were to be found as architects, masons, stone-masons, indefatigables, superior to petty criticism, they amalgamated with the people of the country, together or separately, and created a peaceful atmosphere, as at Lucca, the Tuscan town most sensitive to Comacine influence, like Viterbo in the Roman province, Urbino in the district of Bramante, and Sanzio. Thus Lucca is rich in this Lombard art which has given a new impetus to the Tuscan towns, small in themselves, but great in architecture. I lay great stress upon this, and if in my article for *The Architect* I could also persuade English readers as to the existence of a Mediæval architecture in Italy, whose character and power is more remarkable than is imagined, I should be well rewarded for my pains.

Lucca, in fact, was inhabited by a legion of "Comacini." Nothing, or very little, has been preserved concerning local artists, but a great deal has been discovered about Lombard artists who, residing at Lucca, erected the monuments which are the cause of its artistic fame. The people of this town have from time immemorial been chiefly interested in agricultural and industrial pursuits, particularly in silk manufacture, which is a great source of local prosperity; and these agricultural and industrial people when abroad continue to follow their vocation according to those who—"le rire aux dents," as the French say—recognise Luccian skill in those sellers of plaster statues that I have myself seen in the streets of London, just as Christopher Columbus found them in America at the time of his discovery that astounded the world. Be that as it may, no one denies the presence at Lucca of "Comacini" artists; on the contrary, there is the evidence of their successful creation for the town and its neighbourhood of a university of Lombard masters, whose existence lasted until the sixteenth century, an epoch when art in Lombardy was dead and buried. This is the cause of Lucca and its vicinity being endowed with more monuments of purely Lombard style than Pisa and Pistoja; and if the above-mentioned monuments of Lucca are less Lombardic than those of the surrounding country, this is due to the fact that the town possessed ancient remains which there was a disinclination to abandon, and men were loath to break away suddenly from the primitive Christian style. For a distinct modification in Basilican architecture is awaiting us; and the famous Roman basilicas S. Maria Maggiore, S. Lorenzo fuori le mura, S. Paolo, S. Clemente, S. Prassede, are built in an original and recognisable style which is closely connected with Romanesque—that is to say, Lombard—constructions, either those in Lombardy, S. Ambrogio at Milan the queen of our style; S. Michele at Pavia, a museum of sculpture of the twelfth century; S. Abbondio at Como, an edifice lately restored; or in Tuscany, Pisa Cathedral, not to mention the Baptistery, massive as a pile of granite, decorated like Venetian lace, the Cathedral of Lucca, &c. A characteristic less Romanesque and stamped with more of novelty is the pillar, or cluster of columns, instead of the cylindrical columns—which latter remained in Tuscany in those places where the Latin tradition was not extinct—cubic capitals, ornaments of interlaced ribbonwork, light, compact reliefs, groupings of ornamental animals, without excluding some good imitations of Roman capitals, frieze decoration, and even of strings and vaulting ribs. And as we have come to

Monuments and their Characteristics,

let us continue our consideration of the Pisan style, to which a branch of the Comacine art in Tuscany, the monuments with which we are concerned, belong, at least as regards their general character. Indeed, Pisa Cathedral, a typical monument, has no interest save to demonstrate the character of those monuments that are said to be in the Pisan style. This style, with its peculiarities of both constructive and decorative order, spread from Pisa to Lucca, Pistoja, Prato, Carrara, leaving out for the moment Arezzo, the town farthest from Pisa, the old Ghibelline city which, in spite of distance, spread its influence over Sardinia, almost unknown before its civilisation by Nuraghi. Now, if you look at the photograph, you will first notice the parallelism of the little four-storeyed galleries which, were it not for the variety of the capitals and friezes, and the asymmetry which cannot be seen in a small print, would be more monotonous than it really is. You will next perceive the decoration in irregular, horizontal bands, white and black, which is even more strongly-marked in the real building, so much so, in fact, as to produce, as the construction has not been softened by time, an almost repulsive impression. This style of decoration, with which Tuscan architects are truly infatuated, as they are with the repeated galleries, is harsh and rigid by reason of the abrupt contrast which takes away one's breath. It consists of an application of white marble from Carrara and of greenish-black marble from Prato, save in those cases where the white marble is replaced by limestone, as at Pistoja. These materials employed alternately and without hesitation in our monuments, though rendered somewhat less irritating by small mosaics and panels beneath the arches and on the angles, are unknown in Lombardy. Elsewhere, at Milan, Pavia, Cremona, brick is used, as also at Sienna, and students of architectural modifications may find cause for reflection upon the importance of material in all architecture. The Lombard style in Tuscany and Lombardy is one and the same, but apart from historical tradition, different materials impose new limitations which transform the idea of style and execution.

Internally Pisa Cathedral is a basilica with five aisles divided by columns; the pilaster of the true Lombard style is consequently banished. There is an oval cupola (what extravagance!), together with a gallery which runs gracefully above the great nave, expressed on the outside by a row of pilasters above the wall arcade.

We may also enumerate a group of churches at Pisa belonging to the same family as the Cathedral: S. Paolo a Ripa d'Arno, S. Frediano, S. Pierino, S. Cassiano (which is near by), and above all, S. Maria della Spina, a marble shrine which inclines, with its rich bell-turrets, towards Gothic, but which, nevertheless, belongs to the same decorative order as the Cathedral and to that Pisan style which has formed the patrimony of Lombard taste for the little Tuscan town.

History informs us that Pisa Cathedral was built in 1063 by the architects Buschetto and Rainaldo—that is to say, two periods may be distinguished in its construction, the first (1063-1121) less active than the second (thirteenth century), the former under Buschetto's direction, the latter under Rainaldo's; but the estimation of Rainaldo as a great architect, which he was long believed to have been, is now no longer tolerated since the discovery that he was an administrator and in no wise constructor; and the honours that the centuries have assigned to Rainaldo are now bestowed upon Giovanni Pisano, the great architect, who was also a statuary, like his father Niccola, upon whom fortune does not seem to have smiled upon this occasion. Giovanni might have had a hand also in Santa Maria della Spina, which in its present condition includes an enlargement of the date 1325, but as Giovanni died in 1320 he could not have directed this enlargement. We will limit ourselves to noticing simply the curious arrangement of "la Spina," with its three gables and rich bell-turrets, not forgetting to mention its decorative exuberance. Nevertheless, this church forms part of the Pisan style, as do the older and more simple examples at Lucca, Pistoja, Prato, and Carrara.

The storeyed galleries, the black and white bands, the slender blind arches on the first storey with rhomboidal decorations, the small geometrical mosaics on the exterior, are also dominant features of this style, which rises to sculptural richness in the doorways. And these doorways unite the architrave and the arch—an erroneous and contradictory system—in a single composition, flanked by pilasters, or clustered shafts, the capitals above which are often delightfully carved. Our illustrations are chosen to demonstrate these points. As for the interior, the persistence of the column asserted itself in the modified Lombard style, and influenced the "Comacini," who would have liked to introduce the pilaster, although the tradition of the column in Lombardy was not wholly lost, especially for small churches.

Returning to Lucca, the cathedral, S. Martino, shows us the large adoption by the "Comacini" of those several storeyed galleries characteristic of our style; the introduction of a large portico at Lucca is, however, a striking innovation, the force of which is not, however, lessened by the presence of a portico on the façade of Pistoja Cathedral. At Lucca the portico is organic, at Pistoja it is an addition.

One name fills Lucca Cathedral and its portico with its renown: that of Maestro Guido, said to be of Como, but in reality of Arogno, a village above Lake Lugano not far from Como, a "Comacino" and the cause of considerable confusion, for two Guido, called "of Como," lived at Lucca, and even three, if present-day dates, engraved on monuments or mentioned in documents, are authoritative. Personally, I think that these dates ought to be reconciled with the extent of human life, which favours the existence of three Guido "Comacini." These Guido, architects and sculptors, probably worked at Pisa, Pistoja, Prato, as well as at Lucca, and even at Orvieto, in the magnificent cathedral, queen of serene beauty, exquisite shrine of all nobility. There are thus *Magister Guidus*, *Guidus de Como* (there is no need for surprise as to the designation "de Como"; these artists signed after their names the most important town near their unknown birthplace), *Magister Guidus Bigarelli, de Como*, *Guidectus*, "Comacini" artists, who lived between the second half of the twelfth century and about the second half of the thirteenth.

Lucca is also specially interesting for its church S. Frediano, which is still more mediæval than the cathedral, and which had originally five naves, now diminished in size through its chapels, a surprise for those who expect to find Roman remains. Indeed, this church is handsomely decorated with Roman capitals, real or simulated. The epoch of S. Frediano is the seventh century, but it was renovated in the twelfth century. There is no need for me to speak of the elegance of the façade, the freedom of the galleries, the use of a line of Ionic columns which almost support a sparkling mosaic. A happy and symbolic thought, a surprising decorative effect above the church, a flame of gold breaking away from the summit, a mosaic which penetrates the imagination like a prayer. At Florence, in more modest proportions, the basilica of S. Miniato strikes us with the same effect; at Rome—but we will not dilate on resemblances. Let us rather take notice of the tower, the campanile by the side of S. Frediano with its battlements; this form of decoration, usual in Lucca and its neighbourhood, links the Tuscan town with English architecture, in which battlements also play a large part. And let us follow together the architectural beauty of S. Michele at Lucca, which gives us plenty of information as to the style of these churches, with its slender façade by one of those Guido who, after having performed creditable work at the cathedral, undertook this façade, a jewel slightly overloaded with sculptures and mosaics, that Arezzo might have taken as model for his Pieve, a monumental church in more sober style than that of the façade of S. Frediano, remarkable for the following details: the capitals, the shafts of the columns, the friezes. A noteworthy anthology might be drawn up demonstrating the fruitful and tumultuous imagination of our artists in the century, alas! in which Francis of Assisi preached humility for churches and convents. But Francis spoke by preference to the birds, and men were not able to understand (oh, the "Vogelpredigt" of Franz von Liszt! Do you remember it?).

The church of S. Cristofero offers us also a fine artistic sensation; and its principal portal, which is not so characteristic as that of S. Andrea at Pistoja (of which we shall speak later), attracts us by the ornamental splendour of the lions, the capitals, the limpid frieze, in which the whole force of the artist spent itself in its inflexible precision, the precision of a former period, quite different from the mechanical exactitude of to-day which is not influenced by mind or feeling. Let us take notice of this frieze on approaching the doorway of S. Andrea, a "motif" remarkable for its grace and forceful calm. It was yet another "Comacino," it appears—Gruamonte—who, in 1166, was entrusted with the façade of this church, and the unfinished façade, begun in the lower part, after the manner of the churches I have already mentioned, received the doorway with its bas-relief by Gruamonte and his brother Adeodato, whose name may be read beneath the bas-relief. The scene of the Magi, highly interesting as an example of twelfth-century Italian sculpture, feels the effect of all the incapacity of this time of statuary decadence. The horses are without charm, but the heads of the figures are beautiful with their aspect of submission and faith. Before the Magi of Pistoja, one thinks of the Bible, where it is said that the mind is the potent aid of the body accustomed to afflictions; indeed, matter is here so subjected to this divine law that what is seen does not seem true. The plant ornamentation is chiselled and very flowing, and the lions which support the arch of the door are worthy of our attention: these recumbent lions teach us that the sculptural grandeur of Greek origin, as in the lions' heads in the entablatures of Selinunte and Agrigentum, did not end with the Hellenic or Italo-Hellenic civilisation.

There is further evidence of Gruamonte's work at S. Giovanni forcivitas, which has the same type of doorway, the same style in general treatment, as at Pistoja—on the side of the church whose front no longer exists—which I studied several years ago and which shows us better than in the preceding examples the monotony of the black and white bands. It must not be supposed that the spacing is everywhere that of S. Giovanni at Pistoja; and if in this case the parallelism of the bands is more startling and confusing, the general effect is, as I have said, almost repulsive. In short, it is necessary to adopt a simpler decorative treatment and one more respectful of architectural feeling. But the architecture of these little Tuscan towns is, as I have described for you, with its beauties and its errors, a branch of Lombard style, which, in the hands of several "Comacini" in Tuscany, received a peculiar character. Thus, side by side with Gruamonte at S. Giovanni forcivitas were to be found in due time the "Comacini" Maestri Piero, Giglio, Alessio, Beltramo of Como, to limit ourselves to the first names discovered in the documents referring to this unfinished church, which has been disfigured by modern restoration—an illusion still left in our country which presumes to replace the mind of old-time workmen by that of modern, as if the soul were always the same, in every individual and at all epochs. If this continues, we shall no longer be able to speak of "great architecture and small towns."

CARSHALTON AND BEDDINGTON.*

By W. E. Davis.

Both towns are mentioned in Domesday Book, Carshalton as Aultone—Old Town—and Beddington as Beddintone—and both in the Hundred of Waletone—Wallington until the reign of Henry VIII.

The Domesday Book mentions that at Aultone was a church, and amongst other things "a mill at 35 shillings." This reference to a mill is very interesting, in view of the importance of industries relying upon water-power which subsequently became associated with the place.

Few places have had a greater variety of names than Carshalton. The earliest date of the name as at present, Carshalton, was in the reign of Edward I., 1302. There seems to have been no consistency whatever in the use of the name. In the reign of Henry I., Kersauton; in 1244 it was Karswelton; in 1259, Cressalton; in 1279, 1289, 1373, and 1455, Kers-alton. All the late eighteenth-century writers agree that "for the past two centuries at least the name has been spelt Carshalton," that is from about 1600. Fuller, in his "Worthies of England," published in 1662, spells it Carsh-haulton.

There is not the slightest doubt that from time immemorial Carshalton has been famous for its water. One of the early writers mentions that "owing to the abundance of water, Carshalton was early a place of human habitation," and not only of human habitation, but of large industries of various kinds that necessitated the power supplied by the many streams. In tracing the history down to the middle of the last century mills formed a very important item. Even in Brayley in 1850 ten mills, with their industries and owners, are mentioned, most of which still remain, although, of course, of minor importance. The remains of the old snuff mills at Butter Hill, which were known as Ansell's, formed a very picturesque group, from whichever point of view they were taken. Well on in the nineteenth century a very important industry was Reynolds' bleaching mills. The river ran through his estate for nearly a mile. These works were the most extensive in the kingdom, and Manning and Bray say that "about 200 acres of meadow land are frequently covered with cloth, mostly of Russian and Irish fabric." As much as £1,000 per week were frequently paid in wages by this firm. Amongst other mills, the chief were flour mills, powder mills, two paper mills, one for preparing leather and parchment, one for grinding logwood, and a large oil mill belonging to Mr. Shepley, a name well-known in Carshalton in connection with the Shepley Charity.

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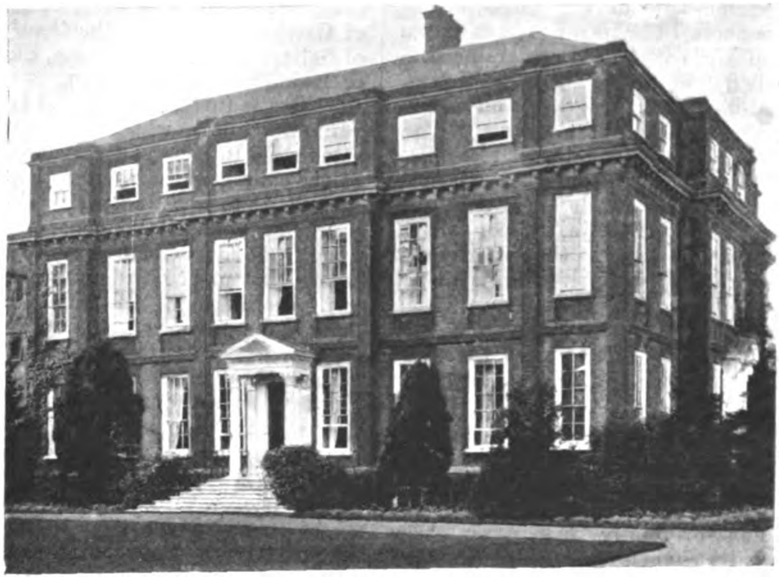
* A Paper read before the Upper Norwood Athenæum.

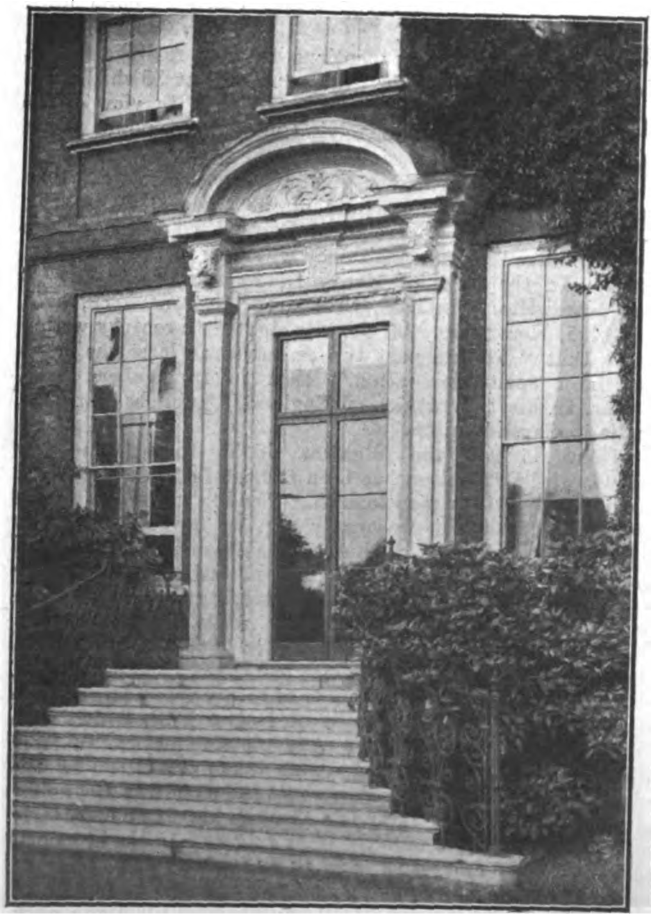
John Evelyn, who saw Carshalton on his way to and from Beddington, in his diary for September 27, 1657, says: "Thence to Carshalton, excellently watered and capable of being made a most delicious seat, being on the sweet downs and champain about it full planted with walnut and cherry trees which afford a considerable rest."



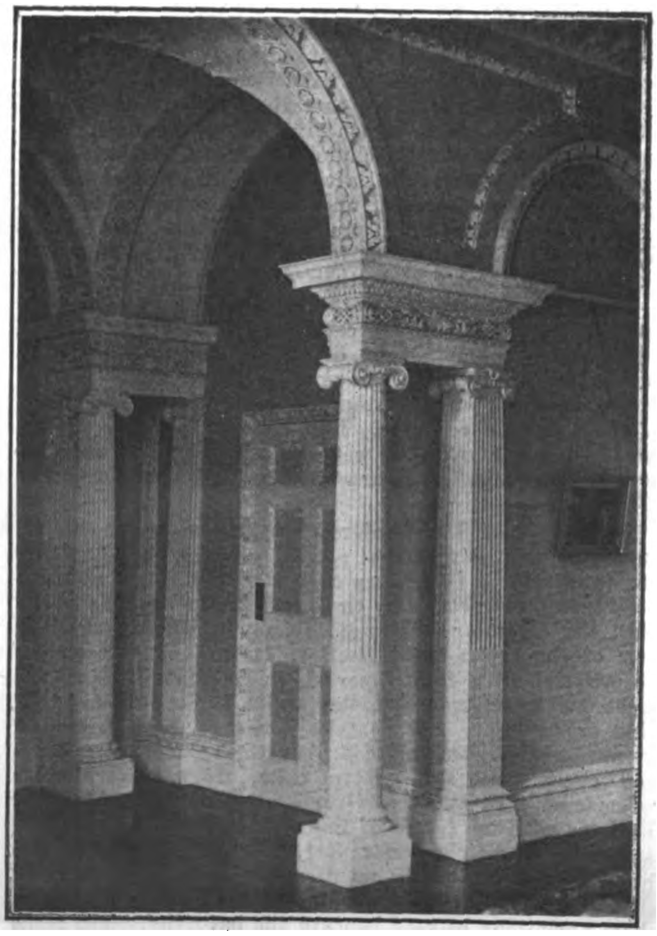
CARSHALTON HOUSE.

In a letter from Horace Walpole to the Countess of Ossory dated from Arlington Street, July 14, 1779, he says: "I dined on Sunday with my cousin, Thomas Walpole, at Carshalton, where, though so near London, I never was in my life. It is as rural a village as if in Northumberland, much watered with the clearest streams and buried in ancient trees of Scawen's Park and the neighbouring Beddington. . . the latter the seat of my Ancestor Sir Nicholas Carew, whose head flew off . . . in 1539." Fuller treats this little accident in a somewhat quaint manner by stating that "Sir Nicholas fell from the top of the King's favour to the bottom of his displeasure, and was bruised to death thereby." The cause of this accident arose from a game of bowls between Henry VIII. and Sir Nicholas. The King, owing to his stoutness, not playing so well as usual, was—in modern vulgar parlance—"chipped" by Sir Nicholas; the result was that the King lost his temper, and Sir Nicholas lost his head.

Fuller says, referring to this incident: "This was the true cause of his execution, though in our Chronicles all is



DOORWAY, CARSHALTON HOUSE.



THE "ADAM" ROOM, CARSHALTON HOUSE.

scored on his complying in a plot with Henry Marquis of Exeter and Henry Lord Montagu."

It is to be regretted that the fine range of railing and gates that at one time were the pride of Carshalton have disappeared, but we can still see the entrance gates to Carshalton House and those at Beddington, which are good specimens of smith's work, and have a good many characteristics of those whose loss we mourn. It has been supposed that these gates were all of local design and manufacture, as a school of smiths is said to have existed at Carshalton up to the close of the eighteenth century.

WATER TOWER AND ORANGERY, CARSHALTON HOUSE.

The mention of the gates brings us to the house that was projected but never built.

Designs were prepared by Leoni for Thomas Scawen, Esq., materials got ready, foundations dug out, a wall some miles long built round the estate, remains of which are yet to be seen, and the entrance railing and gates set up. For some reason, nothing further was done. It may have been the death of Thomas Scawen in 1730, while Leoni's designs are dated 1723, leaving comparatively little time for work of such magnitude. By some it is thought that what is now known as the Hog Pit Pond was formed by the excavation for the house. Sir William Scawen bought the estate (which till then was known as Marcall's) in 1696 from Mr. Edward Hoskins, who had bought it from the Burtons. It is supposed to have descended to the Burtons from the Ellinbridge family, whose heiress, Joan, widow of Roger Fromandes, married into the Burton family in the sixteenth century, and whose brass is in the church.

Those who remember the church a little over twenty years ago must be somewhat struck with the great change in its appearance, but the south side is almost a counterpart of what the north once was. What is now the main south aisle was originally the nave, and what is now the Lady chapel, with its eighteenth-century altar, was the chancel. The old late twelfth-century arcade, with the interesting carved caps, has been rebuilt between the two south aisles.

The suggestion often made that a portion of the church was erected with materials removed from Merton Priory may be dismissed with little consideration; the fact being that the Priory was not disestablished until the reign of Henry VIII. Part of these old materials referred to are the Norman capitals now standing around the font, which are ornamented with curious and unusual carving.

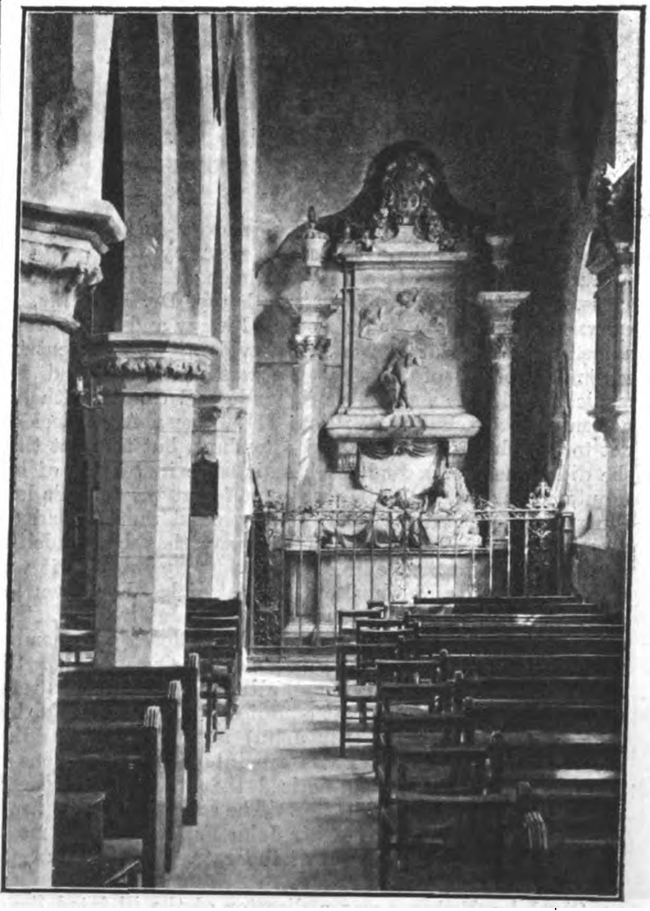
The north and south aisles were raised for the purpose of inserting galleries at the beginning of the eighteenth century, largely at the expense of Sir John Fellowes and Sir William Scawen.

The monuments are particularly interesting, the most interesting of all being that to Nicholas Gaynsford and his wife—an altar tomb next the north wall of the old chancel, with a very curious wall brass over of about 1485. Unfortunately the brasses of the four daughters are missing, but those of Nicholas and his wife and four sons are perfect. One son is shown as a priest, one as a knight, and two as merchants—so indicated by the bags hanging at their sides—although it has been suggested that they thus represented beggars, which is not at all likely. Remains of colour still remain on the brass, and a curious feature is what is termed the butterfly headdress, which will be interesting as a fashion plate of the late fifteenth century. It was formed of gauze on a wire frame, and remained the fashion with the quality for between twenty and thirty years.

A somewhat curious brass is that to John Burton, 1624, with a scroll. The inscription is often conjectured to denote that there was a religious guild or fraternity dedicated to Our Lady of Pity.

A fifteenth-century brass in the chancel to a member of the Ellinbridge family has an interesting feature on a pinnacle between the canopies, the Virgin holding our Saviour in her arms. The canopies are very fine, but the brass has been much damaged, while the inscription has entirely disappeared.

The monument to William Quelch, for thirty years rector, 1624 to 1654, on the south wall of the old chancel, has a very quaint inscription, pointing out the fact that two priests, one a pre-Reformation and one an ante-Reformation, are lying in close proximity, the pre-Reformation priest being probably the one represented in the small brass near by, said to commemorate a nephew of Nicholas Gaynsford.

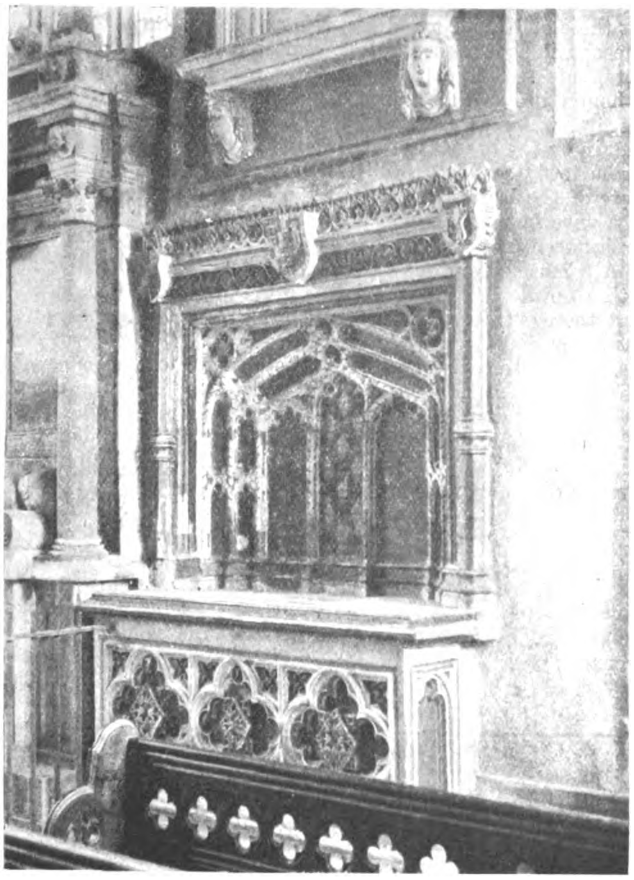


THE SCAWEN TOMB, CARSHALTON CHURCH,

The monuments to Sir William Scawen (1722) and Sir John Fellowes (1723) are at the east and west ends of the south aisle respectively. The iron railing to the former is a good specimen of work and design.

Old drawings and prints show a very quaint house near to Anne Boleyn's Well, probably a priest's house of pre-Reformation times. From the description, it must have been very picturesque with its carved barge-boards. It was, however, removed about 1820-30.

There seems to be no real evidence that Anne Boleyn was ever in the neighbourhood of the well named after her. It has, however, been suggested that the well was dedicated to St. Anne of Bologne. At the boundary between Wallington and Carshalton is an iron bridge built at the latter end of the eighteenth century, and interesting as being the first iron bridge in the county. This is shortly to be removed, on account of the narrowness of the roadway.



CAREW MONUMENT, BEDDINGTON CHURCH.

Carshalton House is a real specimen of a Queen Anne house. The original owner of this house, Dr. Radcliffe, is known to fame as the founder of the library and observatory named after him at Oxford. He evidently was eccentric, and no respecter of persons. He was much esteemed for medical skill, but was extremely rude and candid with his patients, not excluding William III. Queen Anne decided not to have him as her medical attendant, but the fact that she did occasionally send for him is some indication of his reputation as a doctor. He was sent for at the Queen's last illness, but excused himself on the ground that he had an attack of gout. Manning and Bray say that Dr. Radcliffe sold the house to Sir John Fellowes, but Lysons says it was sold first to Edward Charlton, was seized by the Crown for debt, and sold to John Fellowes, afterwards Sir John. The figure mentioned was £3,500. Sir John Fellowes was member for Buckingham in the last Parliament of Queen Anne. Sir John no doubt rebuilt the house, although some writers refer to the present house as that occupied by Dr. Radcliffe, but Aubrey says that "He (Sir John) is now about building a handsome seat." The gates are interesting specimens of ironwork, and it will be noticed that the piers resemble greatly those to the Park Gates. The sculpture to the heads of the piers are the arms of Sir John Fellowes, whose monogram is worked in the head of the gate. The cross at the top is, of course, modern.

Sir John Fellowes was a director of the ill-fated South Sea Company, and upon the failure of that undertaking his property was confiscated, although he continued to live at Carshalton.

The property was next sold to Lord Chancellor Hardwick, and passed successively through the hands of the Hon. Thomas Walpole, John Hodgson Durand, David Mitchell, Clement Kinnersley (a name found in the earlier records), William Reynolds, and Edward Simeson. The latter let it in 1847 to the Board of Ordnance as a school for cadets; it then passed through various other hands, being used as a school till 1893, when it was purchased by the Order of the Daughters of the Cross, in whose hands it now remains.

Carshalton, at any rate in the eighteenth century, appears to have been the scene of sport of various kinds. The *London Journal* of 1723 advertises a three days' cock match on June 17, 18, and 19, between the Gentlemen of Putney and the Gentlemen of Croydon, and "Also a plate of £10 value will be run for the 19th day on Banstead Downs by horses that never run for £5, and the winning horse to be thrown dice for at £15 by those that run their horses."

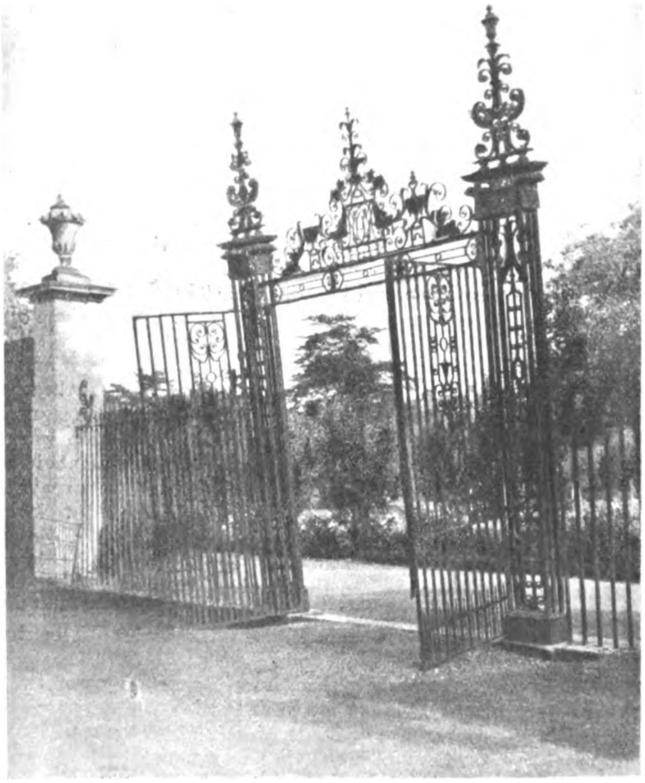
An object that will appeal to many now reposes in a glass cabinet in the Council offices. It is a punch bowl, given to the local club by Mr. Durand, and specially made by Wedgwood. The initials "J. D., 1796," are inside the bowl. There are only two ceramic representations of eighteenth-century cricket known to be in existence. In this representation three stumps are shown, whereas in most contemporary illustrations only two were shown, which were lower and much wider apart, with a cross-piece at the top corresponding to the bails of later cricket.

No reference to Carshalton would be complete without mentioning Ruskin. His love for the Wandle, apart from his love of the beautiful, was, no doubt, largely due to filial affection. His mother, who was named Margaret, lived in her early days at Croydon, and therefore Ruskin often saw the spring we now know as Margaret's Pool. Whether it was named Margaret's Pool before Ruskin took an interest in it, or whether he named it after his mother, is not known.

How strongly he felt what he considered the desecration of the spot his denunciation of the inhabitants of Carshalton in the "Crown of Wild Olives," first published in 1866, indicates.

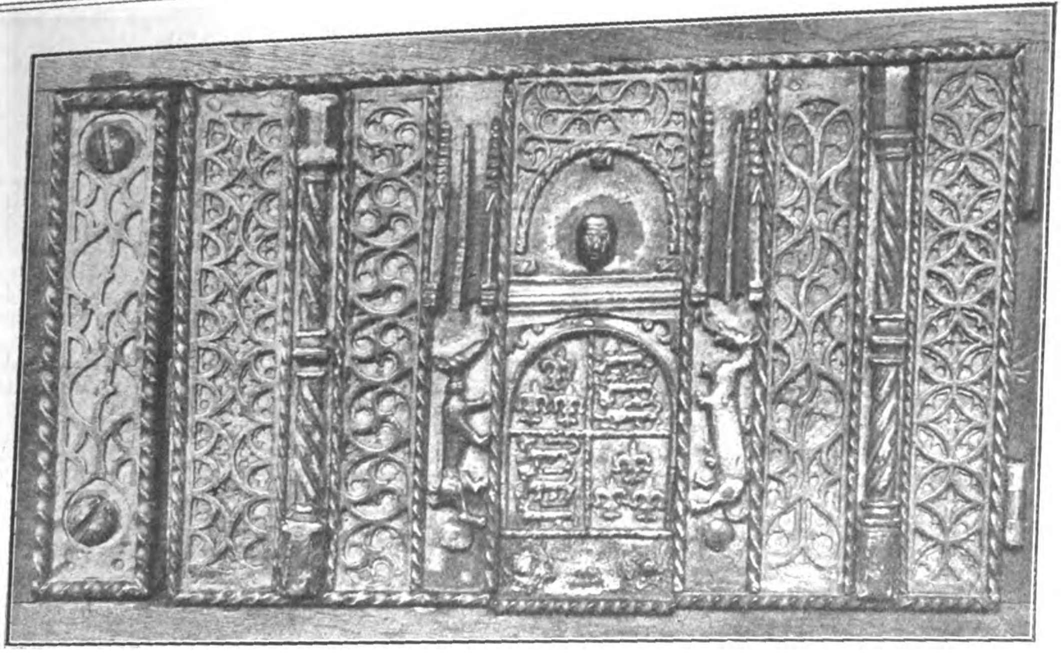
In his "Life" we read:—

He tried to restore a spring of water between Croydon and Epsom, and he erected a tablet at the spot bearing the following words: "In obedience to the Giver of Life, of the brooks and fruits that feed it, of the peace that ends it, may this well be kept sacred for the service of men's flocks and flowers, and be by kindness called 'Margaret's Well.' This pool was beautified and endowed by John Ruskin, Esq., M.A., LL.D."



WROUGHT-IRON GATES, BEDDINGTON PLACE.

The history of Beddington in its early days is similar to that of Carshalton. In Domesday a church is mentioned, as well as four mills, two at forty shillings and two at thirty-five shillings. There were up to the early part of the fourteenth century two manors, known respectively as Home Beddington and Beddington Huscarl, or Huscarl Manor. The widow of Sir Thomas Huscarl married Nicholas de Carru, who, already possessed of Home Beddington, bought Beddington



SIXTEENTH-CENTURY LOCK, SHOWING ARMS OF HENRY VII., AT BEDDINGTON.

Huscarl, and united the two manors. The property remained in the possession of the Carews until seized by Henry VIII.

After being in possession of Lord Darcy, it was restored to Sir Francis Carew, who erected a magnificent mansion and entertained Queen Elizabeth in the years 1599 and 1600. Of this mansion only the great hall, with its fine hammer beam roof reminiscent of Eltham Palace and Hampton Court is left. The gardens were apparently very fine, and oranges are supposed to have been introduced into England here from seeds brought by Sir Walter Raleigh, who had married his niece, the sister of Sir Nicholas Throckmorton, to whom (being a bachelor) he bequeathed the estate. Sir Nicholas took the name of Carew. It passed through the hands of various Carews until it came to another Nicholas, who rebuilt the house in 1709, with the exception of the great hall and cellars under. The only portion of this house is the very fine specimen of eighteenth-century brickwork forming part of the orangery. The door is the original one. The wrought-iron gates have at the head the monogram "N. C." (Nicholas Carew). It is to be regretted that since this visit took place they have been sold and sent to America. The arms at the south end of the great hall are those of Sir Nicholas and his wife, while at the north end is a finely modelled panel of war instruments of the time of Elizabeth. The lock preserved for so long in this hall is an interesting and beautiful example, and is of the time of Henry VII., whose arms are on the shield over the key-hole. It is now in London for the purposes of sale.

The estate was purchased for the Royal Female Orphan Asylum, but the house was burnt down in 1865. It was rebuilt on the old plan with the exception of the low buildings, which connect the north and south wings.

Although a church is mentioned in Domesday, there is no portion of the present church earlier than the thirteenth century—the nave arcade. The aisles are narrow for the period, and point to the fact that they must have been built early in the century. The walls of the chancel may be of the same date, but there are no details earlier than the fifteenth century, the same date as the tower and south (or Carew) chapel, with the screens to the latter. The stalls and miserères are of the same date also, and it is thought that seven on the south aisle and three at the west end of the south side are original.

The font is thirteenth century (somewhat early), of Purbeck marble, with a probably seventeenth-century cover, while the pulpit is sixteenth-century work.

In the chancel is the very fine canopied brass to Nicholas Carew, died 1432, with his wife Isabella and son Thomas; also of two female figures, with the concluding prayer erased.

In the south chapel is the tomb of the founder, Sir Richard Carew, died 1520; but the date of the decease of his wife, Malyn, or Magdalen, is left blank.

A very fine tomb is that of Sir Francis Carew, who erected the mansion, and who died 1611. In the south aisle is a brass plate to his servant Elizabeth Boys, who died in 1599. Sir Walter Raleigh's widow, the sister of Sir Nicholas Throckmorton (or Carew), wrote "To my best brother," asking to be allowed to "beuri the worthi bodi of my nobell hosban" at Beddington. Why her wish was not acceded to is not known, but it is generally conceded that his body was buried at St. Margaret's, Westminster, while his head was taken to West Horsley by his son and interred there.

THE WORK AND RESPONSIBILITIES OF A SANITARY ENGINEER.*

By W. E. HALL, F.I.S.E., F.R.Met. Soc., &c.

OWING to the vague use made at the present day of the term "Sanitary Engineer," it becomes necessary at the outset to define as clearly as possible what is implied by the correct use of such a term.

The term may be defined as "a person acquainted with the art of directing the great sources of power in nature for the use and convenience of man in order to secure health."

It is at once evident from such a definition that the work and responsibilities of a sanitary engineer are of immense proportions and importance, for not only is he concerned with the health of individuals, but also of vast communities.

The aim of all sanitarians is to prevent disease and to assist Nature's laws to obtain full fruition. The advances which have been made in the accurate knowledge of Nature during the past have affected and are affecting not only our intellectual but our social life in an infinite variety of ways, some of them beneficial, others of them to be deplored, for the increase of control of the powers of Nature which comes with the increase of knowledge is good or bad according to the motives with which those powers are used and the ends towards which they are directed. One of the effects of an increase of scientific knowledge has been to increase the burden of our duties.

During recent years the development and progress of sanitation has advanced at a phenomenal pace, and whereas in the past it was frequently a matter of secondary consideration or received no consideration at all, to-day it is generally regarded as a matter of primary importance, and its value will be realised more and more. The duties of a sanitary engineer are most varied and manifold, the work comprising so many important branches that in order to attain efficiency in any one of them it becomes necessary to specialise. Increasing knowledge of the inimical factors acting upon the health of communities, and the application of practical measures for the prevention of disease, have given rise to many difficult and complex problems which are passing through various stages of solution.

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* **Abstract of a Paper read before the Institute of Sanitary Engineers, at Caxton Hall, Westminster.**

To illustrate the great expanse of the field of specialised knowledge which should be at his command, it will suffice to give a passing glance at the questions involved in the process of securing to the community an abundant and pure supply of air and water and also adequate and efficient means for the quick and safe removal and disposal of waste and offensive matters.

An important factor which prevails over and complicates his work is the ever increasing tendency to closer aggregation of the population. The growth of a town and the consequent risk of pollution of the surface and subsoil brings with it the abolition of surface wells, and as the town extends its area a supply of water has to be sought from some more distant source free from the influence of polluting agencies. Thus the quality and quantity of the water supply presents increasing difficulties. The necessary complement to the water supply is the sewerage, and with the successive periods of growth of a town the question of the removal and disposal of waste and offensive matters also repeatedly occurs, the difficulty in the disposal of such matters being considerably increased by their variation in composition and quantity.

It is obvious, therefore, that a sanitary engineer must be intimately acquainted with the great fundamental principles upon which the great sources of power in Nature for the use and convenience of man depend and may be applied to the greatest advantage. The more he realises his responsibilities to the community the more deeply will he be impressed by the magnitude and importance of his work and comprehend the necessity for continual study and perseverance. His work and responsibilities embrace the welfare of whole communities and nations, especially of the great industrial communities. They also extend beyond the generation of his day, for the influence of his work will be a potent factor in the welfare of future generations.

The question of the training of a sanitary engineer, irrespective of the special branch of the profession he may decide to eventually follow, is an exceedingly difficult one. There can be no doubt that an early scientific training must be of immense value, but scientific knowledge will be of little value to him as an engineer unless he possesses the power of observation, tact, a knowledge of human nature, and other similar qualifications which can only be attained by persistent perseverance and experience.

A brief review of a few aspects of the profession will prove that in order to be able to deal satisfactorily with the questions involved he must be thoroughly conversant with his work and realise as fully as possible the great responsibilities with which he is entrusted.

The maintenance of a constant supply of pure air is one of the most important factors in the preservation of good health, for health is only possible when to other conditions is added that of a proper supply of pure air. The absence of proper means of ventilation is attended with more serious consequences than is usually appreciated by the public generally. To breathe impure air, especially air that has already been breathed, weakens the constitution and makes it less liable to resist disease. Pure air and ventilation are, therefore, essential in dwellings, factories, and other buildings, particularly where the air is vitiated with gaseous fumes or fine particles of dust arising from manufacturing or other processes.

To ensure an abundance of pure air both in and around buildings, ample open space outside is a sine qua non. The provision of open spaces is an absolute necessity, especially in a neighbourhood where tenement buildings exist. To be successful, ventilation must remove the air surrounding the occupants of the room or building to be ventilated.

It is impossible to exaggerate the value of pure air, and yet it is evident from the construction of many of the dwellings and other buildings erected in the past that no attempt has been made to provide means of ventilation or to make provision either in or around such buildings for the admission of a supply of pure air, while in not a few instances where the matter has received attention the primary motive has been one of a mercenary character, and not the sequence of a desire to maintain that high standard of health necessary to improve the status of the human race.

Closely allied to the housing question is the sanitary efficiency of schools, factories, and places of public resort. Although much has been done by legislation to improve the lot of the worker and to secure for him efficient ventilation and cleanliness, the despicable conditions under which thousands of human beings are compelled to live and labour still present a formidable problem and a large sphere for investigation and thought. "Ventilation is a science, and it requires the study of a lifetime to master all its intricacies. The greatest engineering skill is necessary in the arrangement of tubes and the supply of fresh air" (Parkes).

Another aspect of the responsibilities of a sanitary engineer is to see that provision is made for a constant and abundant supply of water. Water is absolutely essential to health. From remote antiquity the highest value has been set upon an abundant and pure water supply. Centres of population sprang up in ancient times around those points where water was readily available, and great expenditures of labour and treasure were made to carry it to places where it was not naturally plentiful. Not only was a generous daily allowance sought for, but we note in the centuries gone by unmistakable evidences of a keen appreciation of the dangers lurking in a polluted supply. There is no doubt that the provision of an abundant supply of pure water to the great centres of population is a problem which has demanded the most careful attention of sanitarians right through the ages, and its solution has brought into existence some of the greatest and finest examples of engineering known to the world.

The water engineering schemes devised and constructed within recent years have entailed stupendous difficulties and intricate problems, both legal and engineering. In some cases most elaborate and complete methods of securing such a supply of water have been undertaken, the question of cost often being a secondary consideration, whilst in other cases the question of cost has been one of great consideration, often to the disadvantage and consequent ill-health of the consumers. Besides want of means, another hindrance to certain districts obtaining a sufficient supply is due to the abstraction by larger centres of population from such districts of their natural supply of water without any provision for a compensating supply. Almost every year sees the restriction in available water-bearing areas. The ever-increasing populations of the great towns specially call for a corresponding increase in the quantity of water supplied thereto.

That pure water is better than purified water must be accepted as an axiom. But pure water is becoming more and more difficult for many towns to secure, so that the best that some of them can hope to obtain is a polluted water which has been efficiently purified by art.

It is a question, sometimes, whether it would not be better policy, considering the rapid changes in the density of population, to accept a moderately polluted source and thoroughly purify its water, rather than go to large expense in endeavouring to obtain a faultless supply which might have to be purified in its turn at some later day. It must also be borne in mind that, outside of any question of wholesomeness, the water which people are content to use at the present day may not be considered suitable in a few years to come. The tendency is towards a general demand for a clear and colourless water, and engineers must be prepared to meet such a demand.

The really serious item of contamination, the one to which the sanitarian's attention is most quickly drawn, is that of the introduction of sewage into water intended for dietetic purposes. Effluents from sewage disposal works are often discharged into streams which are either themselves drawn upon for the supply of some community lower down, or communicate with another stream which serves such purpose. Consideration of the questions arising upon the foregoing topic dwarfs all others into comparative insignificance. Shall a water once polluted with sewage material be again used for human consumption? If there be danger in such use, what is its nature, what is its extent, and are there available means for averting it? These are some of the questions with which a sanitary engineer has to grapple in making provision for an abundant and pure supply of water.

Another phase of the profession is in connection with the removal and disposal of the waste products from human habitations.

It is generally admitted that in the whole domain of sanitary science there is no question of more importance than that of sewage disposal. All other branches of sanitation rely on the effective disposition of the waste products resulting from modern life.

The method of disposal of sewage is a problem which presents considerable difficulties, for the processes of Nature are slow and quite incapable of coping with the conditions brought into existence by the aggregation of communities in limited areas. Great progress has, however, been made in the provision of such equipment as is of great and invaluable assistance to Nature in her work, and it is more than probable that in the near future further improvements will be effected as the outcome of the persistent and constant thought and endeavour which are bestowed upon the solution of the problem. The aim of those responsible for the production and maintenance of a final effluent to which no one can take exception, is so to regulate and control the agencies provided as to produce, as far as that is practicable, the conditions which would prevail were Nature permitted to perform its primary functions unaided.

The treatment necessarily varies according to the situation of the district, while the nature of the neighbouring soil, source of water supply, and other circumstances cognate to the subject are important factors in determining the final course to be adopted. Whatever the details of the scheme which may be eventually decided upon, it is essential, in the interests of public health, that all effete organic matter should be collected and dealt with as soon as practicable.

One of the greatest difficulties experienced in adequately dealing with sewage lies in the enormous bulk to be operated upon, the total quantity of sewage to be dealt with varying in different districts with a number of circumstances.

The cleansing of a district from a health point of view is as important as personal or domestic cleanliness. This is a truth which apparently does not come home to everyone, otherwise many people who pride themselves on their personal and domestic cleanliness would not be content to live in a dirty town.

It is of the utmost importance, from a sanitary point of view, that all refuse should be systematically and effectually removed from a district; if it is allowed to remain, it will assuredly contaminate the air, the soil, and possibly the water supply, and the result will be increased sickness and mortality, to say nothing of the physical discomforts it may cause. The removal and disposal of house and trade refuse is a question which not only manifests itself in domestic sanitation, but it is also a problem of life in general. There is only one way to deal with it, and that is to provide a perfectly efficient basis whereby the collection and disposal of the refuse may be carried out with thorough efficiency and in such a way that in the removal of one evil another shall not be created. Many destructors for the disposal of dry refuse have been introduced and in some special means are adopted to prevent noxious vapours and fine particles of dust being given off during the process of combustion. By such methods not only is the disposal of the refuse, but its actual destruction, provided for in a perfectly inoffensive way.

In connection with this phase of the work and responsibilities of a sanitary engineer, many difficulties have to be dealt with, arising out of the question of administration and the methods of collection and the use of appliances.

In conclusion, there can be no doubt that sanitary science and engineering have made rapid strides during recent years, although the progress has been hampered by such obstacles as ignorance, negligence, and prejudice. One of the greatest difficulties a sanitary engineer has to contend against is to induce people to appreciate sanitary principles, a difficulty by no means confined to the illiterate or the penurious. Such obstacles, however, cannot be overcome by the provision of the most perfected mechanical contrivances capable of production by all the ingenuity of man, but only by the slow and trying process of education.

LONDON MASTER BUILDERS' ASSOCIATION.

A CONFERENCE was held at the invitation of the London Master Builders' Association on December 23, which was attended by two delegates from each of the eight trade societies out of the nine with which working rule agreements exist.

The President, Mr. Walter Lawrence, jun., pointed out that since May last twenty strikes had taken place, that the labourers had been involved in thirteen, bricklayers twelve, plasterers nine, carpenters and joiners five, crane drivers three, plumbers one, masons one, and all these disturbances had taken place owing to the refusal of the trade unionists to work with non-unionists, although the working rule agreements distinctly provide that they should do so, about 1,000 men being involved; that this action being a distinct breach of the agreements, the time had arrived when the employers intended to firmly insist upon the adoption of some method other than promises to compel the observance of the rules.

In the absence of suggestions, which were invited from the operatives, the employers' proposals were submitted as follows:—

1. The return to work of all men to jobs where strikes exist immediately after the holidays.
2. That a Guarantee Trust Fund should be formed by deposits by both sides, to be available for the purpose of paying penalties for strikes or lock-outs in violation of the working rules.
3. That a statement in writing be sent to this Association that your Society deprecates the strikes without the matters in dispute being brought before the Conciliation Board, and that you will undertake to penalise your individual members in case of non-observance of the rules.
4. That an undertaking be given that no attempt will be made on any of the jobs of members of this Association to carry out card inspections.
5. That a reply must be in the hands of this Association on or before January 5, stating as to whether or not your Executive Committee accepts the principle involved in the foregoing proposals.

It will be observed that the suggested guarantee will not affect either party who honourably abides by the agreement.

SOME FALLACIES IN CEMENT TESTING.*

MY object in this paper is not so much to question the accuracy of the testing performed by inexperienced operators as to draw attention to what are, in my opinion, fallacies underlying some of the recognised or suggested processes of testing Portland cement; and at the outset I find myself at variance with the British standard specification itself.

The standard specification stipulates that before any sample of cement is submitted to certain tests it "shall be spread out for a depth of three inches for twenty-four hours in a temperature of from 58° to 64° Fahr."

As a result of tests on two samples of cement stored in six different factories, the author found that the final set was in some cases slowed, and in others quickened, and it is impossible to generalise on the results. The only thing one can say is that cement kept in sacks, under ordinary conditions of dry storage, may either become slower or quicker setting, but the result cannot be foretold.

Effect of Aërating in Layers Three Inches Deep.

Samples of the cements as received from the works were laid out for twenty-four hours, in accordance with the British standard specification, and then tested, with the result that the author concluded that the retardation or acceleration of setting time on storage or aëration cannot be due to peculiarities in the cements themselves, but must be due to chemical changes brought about by the absorption of some constituent present in the atmosphere.

Cement has a strong affinity for moisture in the first place, and for carbonic anhydride in the second place, and these constituents are present in the atmosphere in variable proportions at different times and in different localities.

From former experiments and reasoning, he held the opinion that absorption of moisture results in a retardation of setting time; whilst absorption of carbonic anhydride produces an accelerating effect. Cement exposed to both influences will therefore have its setting characteristics affected one way or the other according to the relative amounts of moisture and carbonic anhydride absorbed, the net effect being the resultant of the two opposing forces.

Fineness.

The British standard specification stipulates that the fineness of grinding shall be such that not more than a certain percentage of residue shall remain upon a sieve of a stipulated mesh, under the conditions of the test.

The author submitted that the size or area of the holes in a sieve is the real standard and should be stipulated, the actual diameter of the threads, or their precise number per inch, being of secondary importance.

Another point which, he said, appears to be overlooked is the size of the sieve itself. It is obvious that the same weight of cement, sifted for the same period of time, will be more effectively sifted over a larger area than over a smaller one.

The following actual experiments bear this out:—A sample of cement was thoroughly mixed, and 100 grams sifted for fifteen minutes through each of two sieves prepared from the same wire cloth, but differing in sifting area.

*** Abstract of a Paper by Mr. W. Laurence Gadd, F.I.C., M.C.I., read at the ordinary general meeting of the Concrete Institute on December 11.**

The larger sieve had a total area of 64 in.^{2}, whilst the smaller one had a total area of 12 in.^{2}. The residue on the larger sieve was 16.4 per cent., whilst on the smaller sieve it was 19.8 per cent., a difference of 17 per cent. of the total.

Specific Gravity.

The specific gravity test is still retained in the British standard specification, and is considered by most people to fulfil the functions formerly attributed to the bushel weight test—viz., to detect the degree of burning to which the clinker has been subjected, or, in other words, it is a test for underburned cement. This, however, is a fallacy. The specific gravity of cement affords no indication of the degree of calcination, and it has long been known that the figure was affected much more by atmospheric influence than by any difference in burning.

The author's experience is that when taken freshly from the kiln the specific gravity is practically the same whether the clinker be well burned or underburned, provided the carbonic anhydride has been all, or nearly all, expelled from the chalk.

The specific gravity of cement being merely a measure of the degree of aëration which the sample has received, and the finer particles being naturally more absorbent of water and carbonic anhydride than the coarser pieces, it follows that a finely ground cement, containing much flour, will more rapidly have its original specific gravity reduced by aëration than will a coarsely ground sample, and would thus, falsely, appear to be the more lightly burned of the two.

Standard Sand.

There is a somewhat general idea that tensile or crushing tests of cement with standard sand represent the best results of which the cement is capable. This is erroneous. Sand tests do not give the highest results which can be got out of the cement, but give results which are standardised, and therefore comparable with those obtained by different operators. The crushing strength, especially of concrete or mortar, depends largely upon the size and character of the aggregate, the absence or presence of dust, clay matter, and other things, and the density of the mass. The use of standard sand merely gives results which are comparable, and only represent the strength of a cement when tested under certain conditions and with an aggregate of a definite size and character.

The crushing resistance of concrete made from the same cement varies not only with the size, but also with the character of the aggregate.

Autoclave Test.

This test, recently proposed by Mr. H. T. Force, in charge of testing materials on the Delaware, Lackawanna, and Western Railroad, of Scranton, Pa., is merely a revival of Dr. Erdmeyer's high-pressure steam test introduced in Germany about 1881, and rejected by German cement experts as being unreliable and misleading. In the words of Professor Gary, of the Royal Bureau of Material Testing, it is even less adapted to distinguish useless cements from useful cements than the usual methods of determining constancy of volume.

With regard to the utility of such a test, it must first be shown that cements which pass the simpler soundness tests generally employed in this country will yet be dangerous in ordinary work; and, secondly, that the autoclave test will detect such cements with certainty. So far neither of these points has been demonstrated.

Quite recently the autoclave test has been subjected to critical examination, both in the United States and in Canada; and the conclusions arrived at are that a case for its adoption has not been made out, with which conclusion I agree.

Free Lime.

No theory connected with Portland cement has obtained a stronger hold, or has attained such hoary antiquity, as the idea that unsoundness of cement is due to free lime locked up within the particles of the ground material. In fact, this theory has been for so long accepted that to question it may possibly be met with derision.

Nevertheless, I confess I have never been a believer in this bugbear, the existence of which has never been demonstrated, although many abortive attempts to do so have been made. Certainly free lime, in the sense in which it has generally been understood, cannot produce the blowing or disruption which occurs with unsound cement, because an addition of free lime, in the form of ignited calcium oxide, has the effect of reducing expansion by inducing the hydration of particles of hard clinker grit, in the same way that ammonia or ammonium carbonate does so.

The improvement in soundness, brought about by the exposure of cement to a damp atmosphere, lends some apparent support to the contention that free lime is thereby slaked and rendered harmless; but it is rather difficult to understand how the small amount of moisture absorbed from the air penetrates the particles and slakes the free lime when the enormously greater quantity of water used in gauging the cement fails to touch it. Furthermore, unsound cement stored for some time in airtight receptacles, in which presumably no slaking of free lime can occur, becomes perfectly sound.

Exposure of cement to air for a few days sometimes results in an increase in the amount of expansion, as tested by the Le Châtelier method, and this increase is nearly always proportionate to the amount of aëration undergone —*i.e.* the thinner the layer in which the cement is laid out, the greater the increase of expansion.

We know very little yet of the properties of lime in a state of solid solution. It is stated to be crystalline and to hydrate slowly; but if the solid solution theory be correct, crystalline free lime is present in considerable quantity in all Portland cements, whether sound or unsound, and it has not been satisfactorily explained why the lime hydrates without expansion in one cement, but does so with destructive force in another.

It is also well known that a low-limed cement is often more unsound than a high-limed cement, which again is antagonistic to the free lime theory.

My own view is that unsoundness in cement is probably due to the presence of an abnormal silicate, perhaps dicalcium silicate, which is an unstable compound and slowly disintegrates with an increase in volume. The phenomenon of "creeping clinker," known to cement makers, is an illustration of the disintegration, with increased volume, of dicalcium silicate, which is formed when clinker contains an insufficiency of lime; and this or a similar compound is most likely to be found in unskilfully made cement in which the proportions of lime, silica, and alumina are not present in correct combining weights, or when the temperature of burning is insufficiently high to induce the formation of those silicates and aluminates which constitute true Portland cement.

ROADS AND STREETS.*

By Mr. RAYMOND UNWIN, F.R.I.B.A.

THE general character of roadways has changed little since Roman times; the rounded surface of the roadway, the two side channels or gutters, the stone kerb and slightly raised footpath, which we see in a street at Pompeii, characterise nearly all our modern roadways. Other forms have of course been used: Professor Flinders Petrie tells us that some of the earliest Egyptian roadways, dating back something like three thousand years before the Christian era, were constructed with one central gutter, and no doubt mediæval examples of this treatment may be found, particularly in some hilly districts, but the form now usual seems to have been pretty general since Roman times at any rate.

We find also that beauty was considered as well as utility at a very early date in the treatment of roads. It was not deemed enough that a road should serve as a means of communication from one place to another; it was also desired that it should offer some dignity of approach to important buildings, and be a pleasant way for the passer-by. Fortunately, sufficient ruins remain of one of the great colonnaded streets built during the Roman occupation of Palmyra to give us some idea of the care and imagination which were brought to bear upon some of the more important streets. Careful drawings were published in Paris in 1799 of this great street, which appears to have been constructed, partly at any rate, to link up the Temple of the Sun with the Temple of Neptune, and perhaps to form a processional way from one to the other. Whether this was so or not, each end of the street was made to terminate squarely with the Temple, and the two bends in the direction of the road necessary to secure this are effectively treated, the one with four massive pylons, the other with an ingeniously designed triple triumphal arch. It is interesting, further, to find from the Cassas drawing

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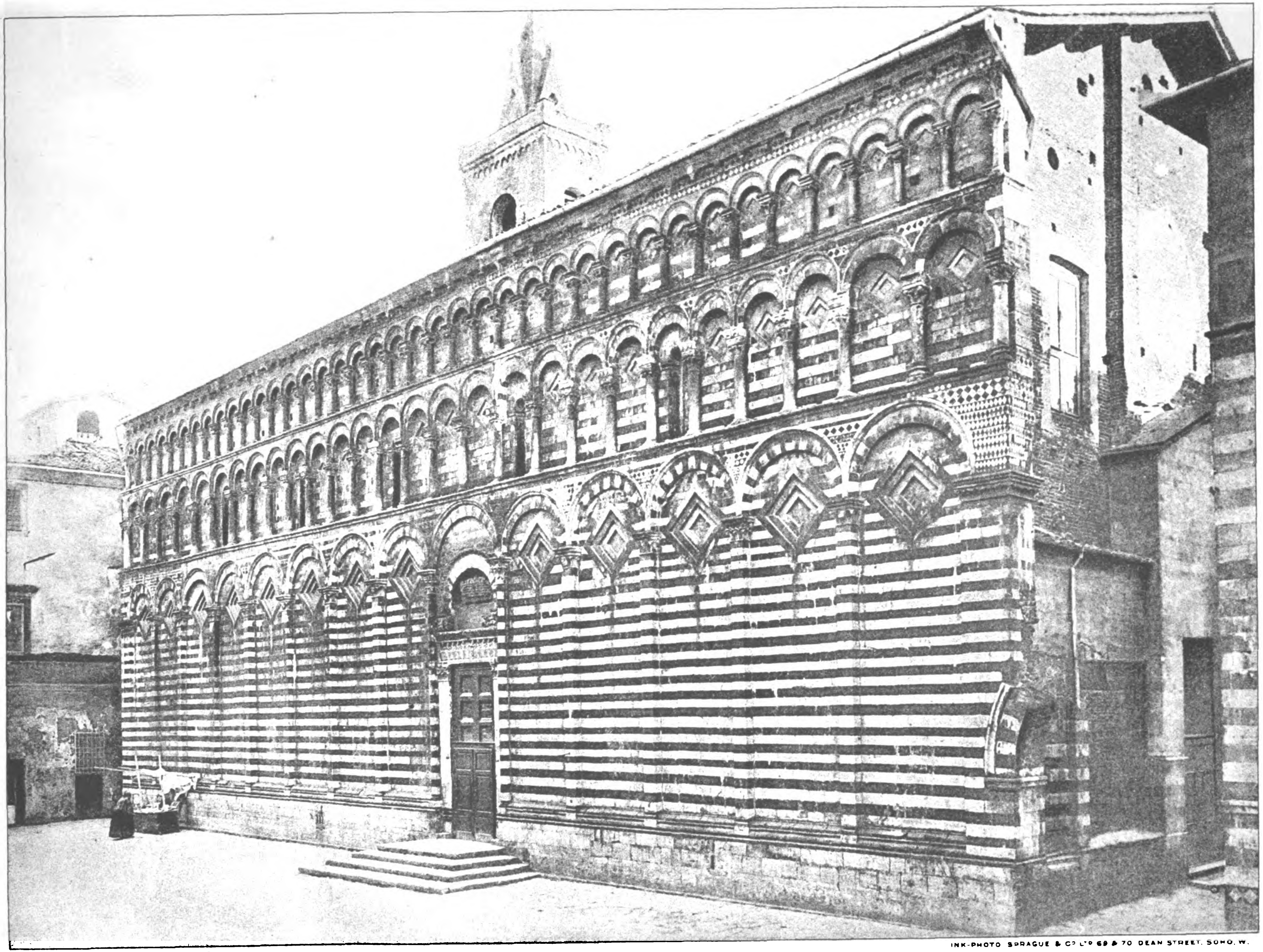
*** A Paper read before a meeting of the London Society at the United Service Institution.**

The Architect, Jan. 2nd 1914.



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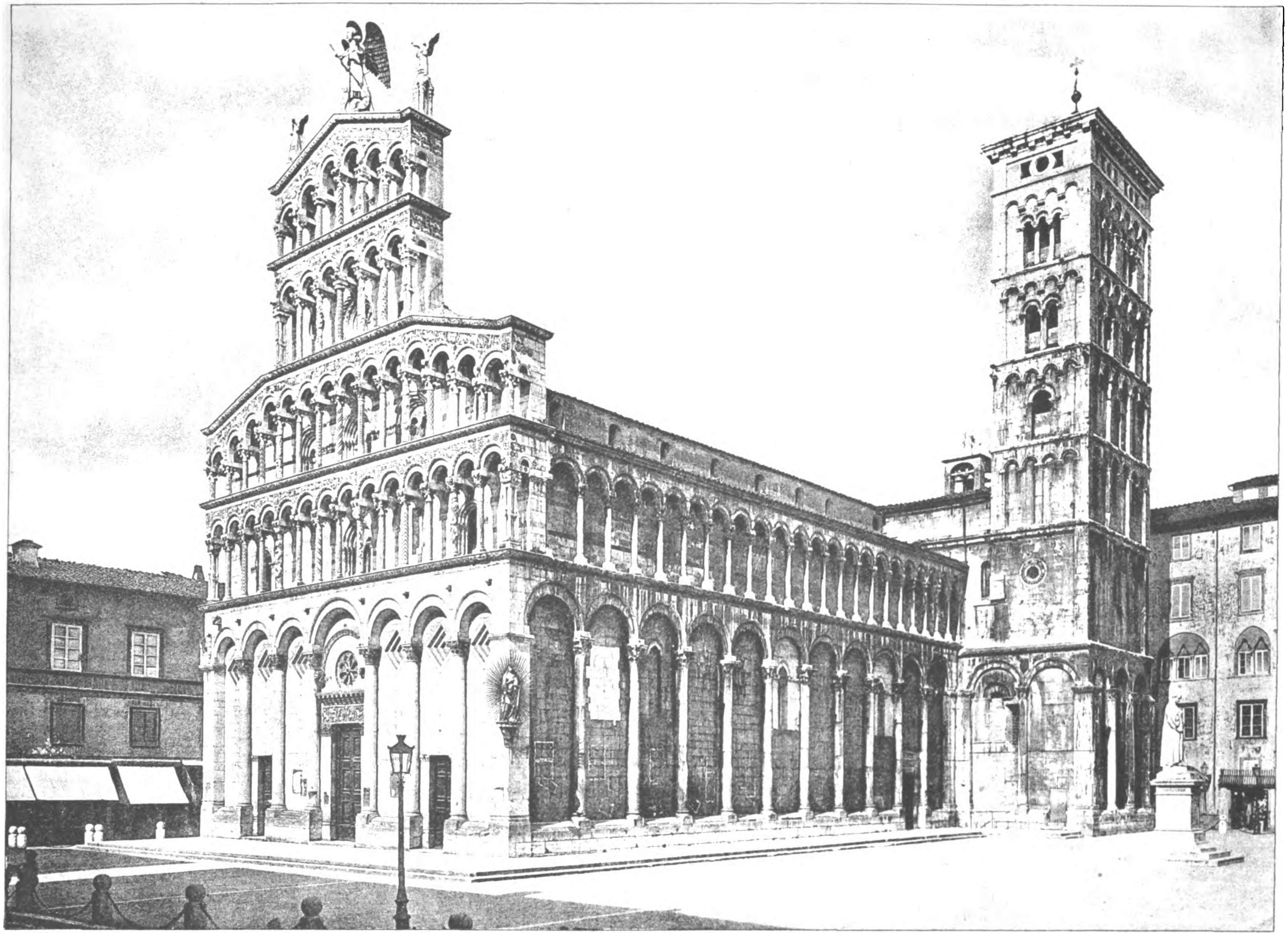
SIDE ELEVATION, SAN GIOVANNI "FORCIVITAS." PISTOIA.



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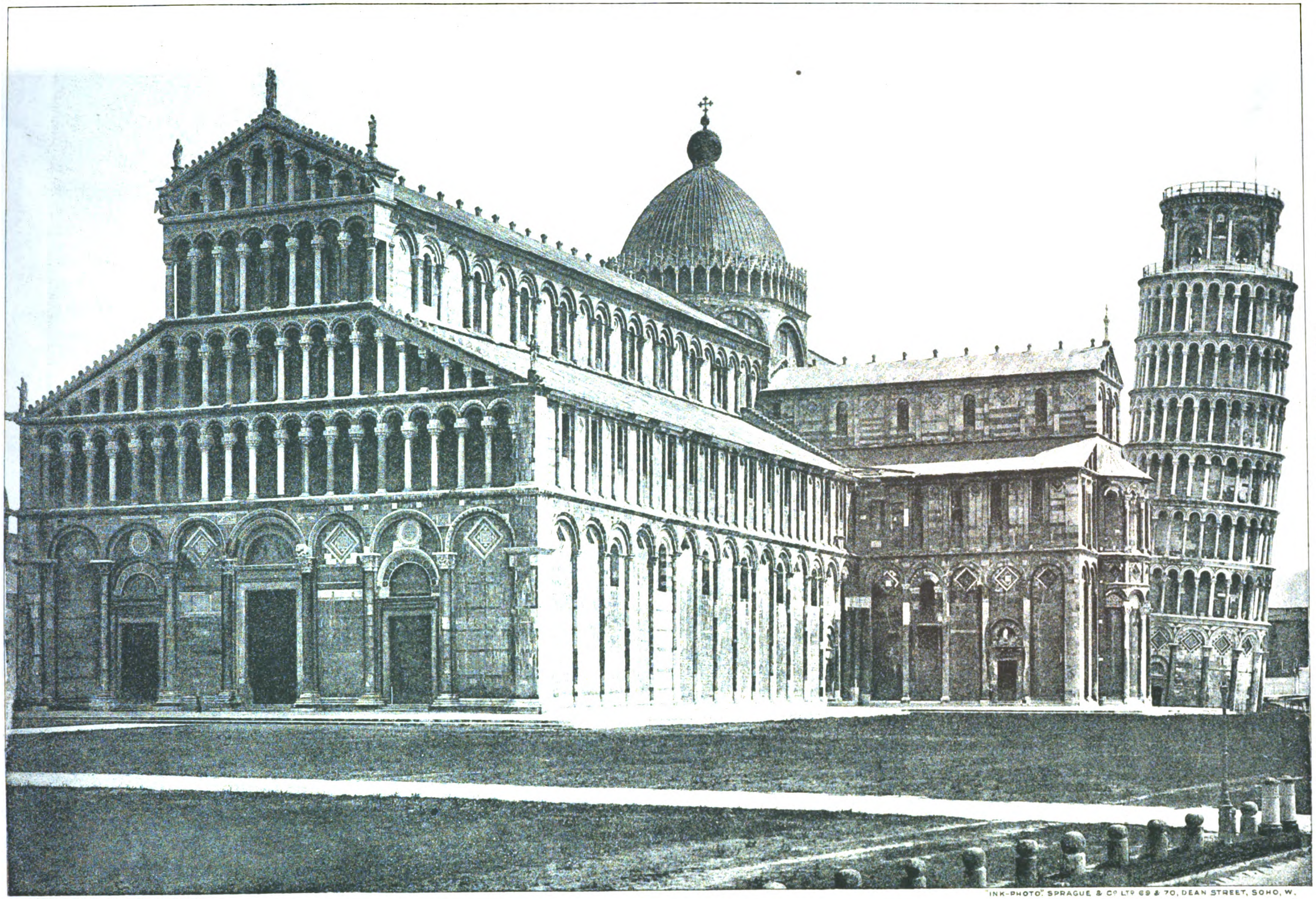

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THE CATHEDRAL AND LEANING TOWER, PISA.

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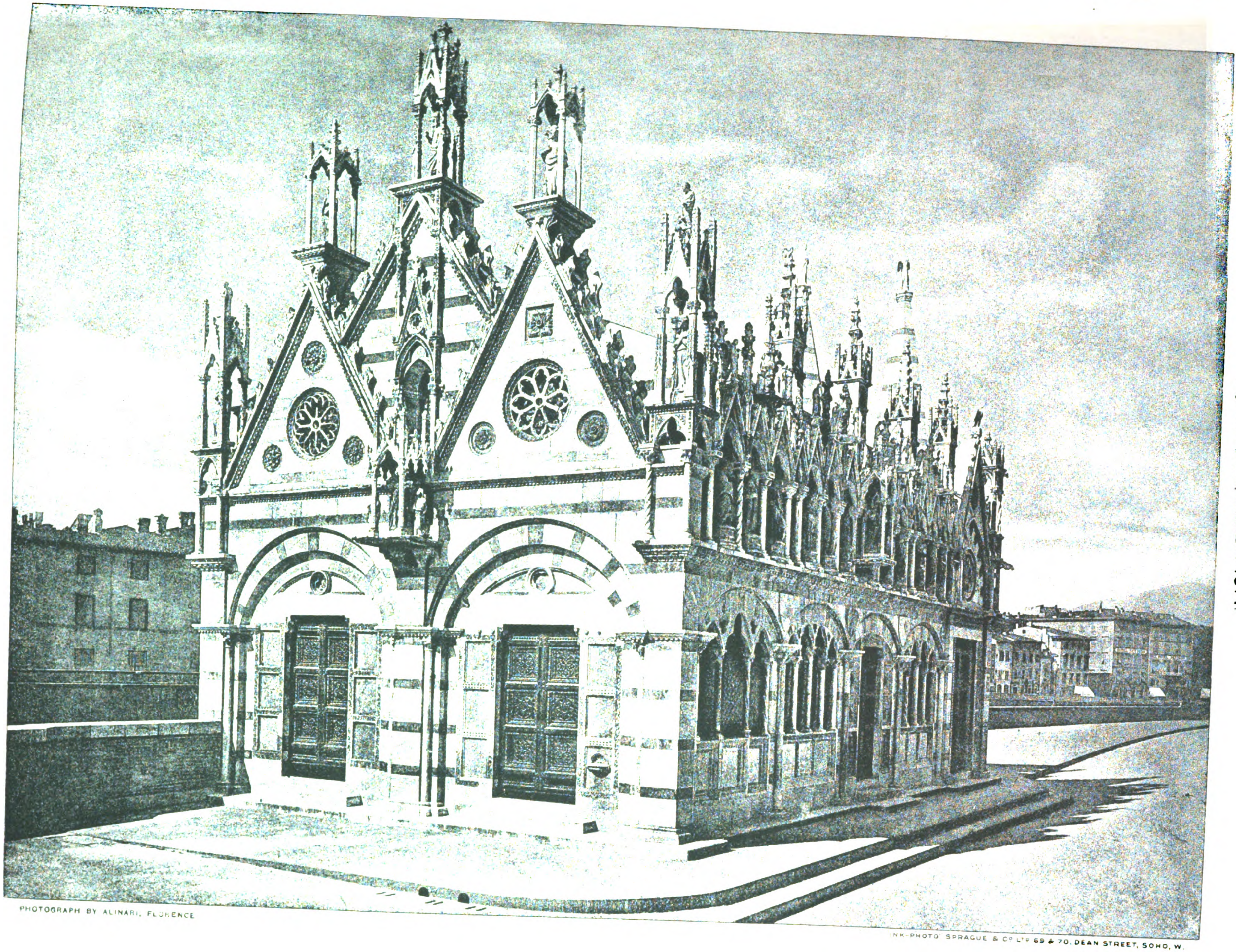

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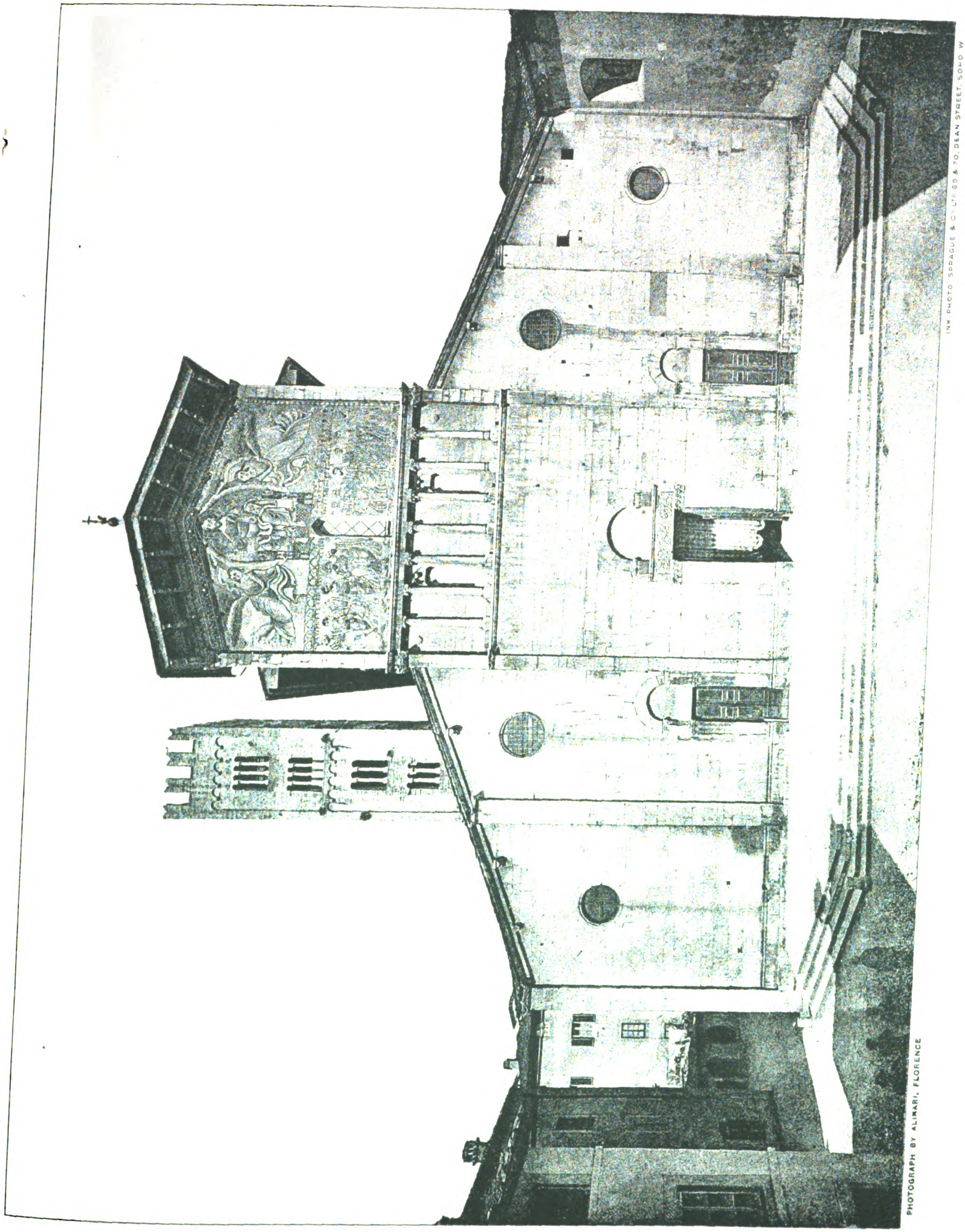

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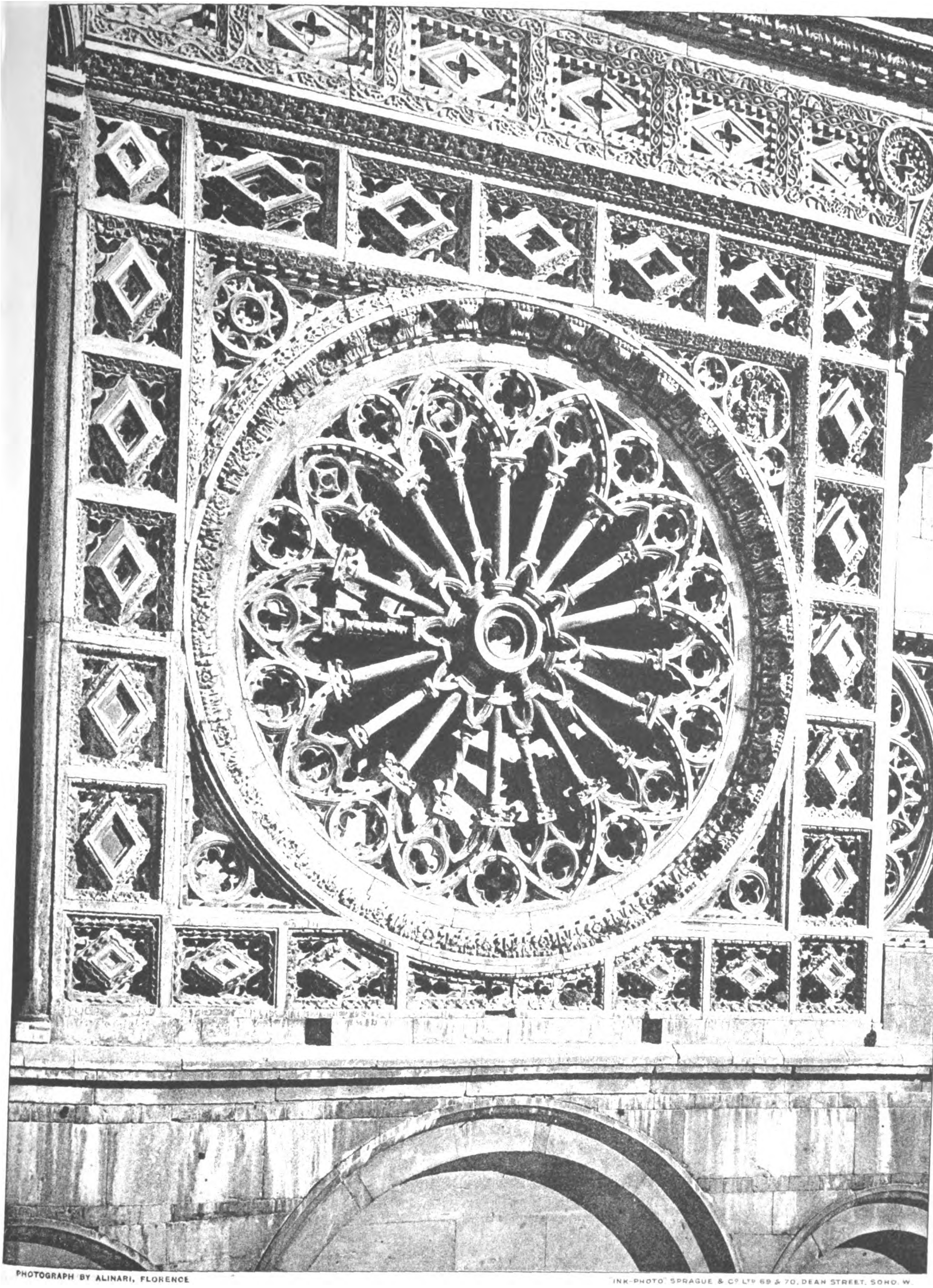
SAN FREDIANO LUCCA.



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ROSE WINDOW FROM CATHEDRAL FAÇADE, CARRARA.

that all the cross roads were planned at right angles to the part of the main street that they enter. The street was about 70 feet wide, and for the whole length, which is over 3,500 feet, was colonnaded, so that while the roadway of about 37 feet in width was open to the sky, the two footpaths, each 16 feet wide, passed along under the covered colonnade. There were originally 454 columns, each 31 feet high, with an entablature 7 feet high running from end to end. Arches are introduced at the entrance of some of the side streets, and the photographs of the remains still standing give some idea of the splendour of the architectural expression given to this highway, which was at the same time laid out to give the greatest convenience and comfort in a very hot climate. Streets of this character seem to have been fairly common before the decline of Rome; some columns are still standing at Gerasa, and many others are known of.

We are just now beginning in this country to devote more attention to our roadways. May we not get some inspiration from these old examples? At any rate we may see that there have been times when it was thought worth while to make something at once convenient and gloriously beautiful of the main highways of a city.

Roads serve two main purposes: first, they are avenues of inter-communication; secondly, they afford frontages for buildings giving access to them. Most roadways serve both of these purposes, but one or other usually predominates in importance. We have at one end of the scale the main arterial roadway, where traffic-bearing capacity is the first consideration, and at the other the small lane or carriage-drive, which gives access to a group of houses. To meet the varying requirements of these extremes, and of the intermediate classes of road, until recently we were content, through our municipalities, to fix one arbitrary width, most commonly 36 or 40 feet for all kinds of roadway, to serve all purposes. Perhaps the great development of railways somewhat distracted our attention from the road as a highway; but the development of the automobile has greatly changed the condition of affairs, and there can be no doubt that the road is at present rapidly growing in importance, carrying an increasing volume of traffic for longer distances at enhanced speed.

First, as to the general planning; there have been many discussions as to whether the ideal scheme of roads for a town should be based on square, diagonal, irregular, or on spider's web lines. It is seldom that any one of these methods will meet with the actual requirements of the case, but the advocates of each of them are apt to overlook one or two main principles which are perhaps more important for the convenient flow of traffic than these theoretical considerations, useful as they are, no doubt, in their place. Generally speaking, the main traffic does flow to and from the centre of a town, and rapidly diminishes towards the outskirts; also, we may say that secondary streams of traffic require to pass at various points from one to another of these main arterial roads. Thus we approach the spider's web pattern; but there are many other lines of traffic, as, for example, the east and west flow, which bulks so largely in London; and in many towns there will be special lines where traffic will flow between residential districts, railway stations, commercial or industrial centres, or other places of frequent public resort. Each of these lines of traffic should be provided for in an ideal scheme of roads, and in such a way that the busy centre is relieved as far as possible of traffic passing merely from one outside locality to another. In working out a plan for new roads such as that prepared by the Traffic Department of the Board of Trade, these considerations will suggest certain lines, many of which will not fall in with either of the special systems of roads named above.

Such a framework of main roads can only be properly planned as a whole by some body able to take a comprehensive view of all the requirements, and to judge impartially between differing local interests and susceptibilities. In a country such as ours, with its industrial regions, this work becomes national in extent, and cannot adequately be carried out by individual local authorities. Inter-communication between different towns by roads is rapidly growing in importance, and must dictate many of the main lines for highways. In order, then, to link up the various town-planning schemes which are at present made to serve the interests of localities only, we need some national town planning to provide for the greater lines of inter-communication and harmonise the different schemes. Particularly is this true for London, where the results of local town planning will be disastrous if the larger interests of London as a whole are not considered by some central town-planning authority, and the main lines laid down so that the local schemes will be harmonised with them.

Many of the powers exist, but they are in different Government departments. The Local Government Board, the Board of Trade, the Home Office, and the Treasury through the Road Board all have power. They need to be brought together and made effective for construction work, and I know of nothing more urgent for London's future welfare.

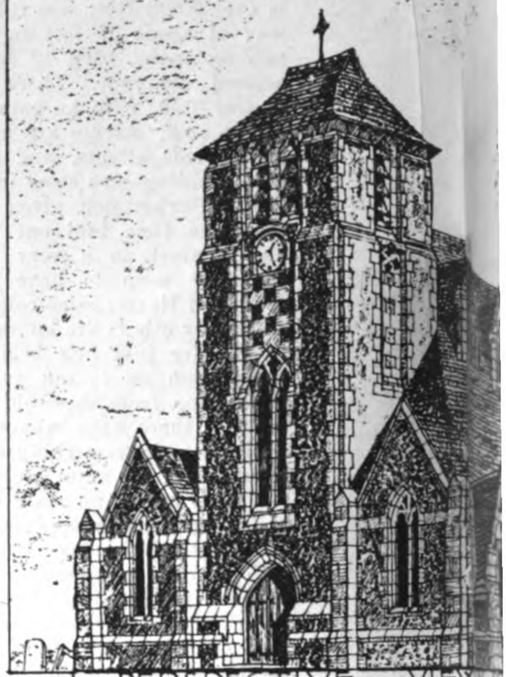
Another matter in connection with the planning of main highways I would refer to, namely, that when a frame of main roads is laid down the secondary roads should be planned not in relation to some abstract theory, but in relation to the main roads and in proper subordination to them, and that only when the secondary series of roads is planned is it possible rightly to plan the minor building roads which should sub-divide the areas, and again should be planned in proper subordination and relation to the secondary roads. American cities have allowed their town plans to grow on the basis of the building block; they have gone on adding block to block, and now, with the maximum of cost and inconvenience, are trying to rectify the system of cutting diagonal roads across these rectangular blocks—the best that can be done under the circumstances. But it is remarkable to find that the reproduction of the evils of this system is constantly suggested as the right method of planning, beginning, however, in this case with the frame of diagonal streets and superimposing the checkerboard of buildings plots upon it. A good example is afforded by a diagram used at the Road Congress to indicate the importance of diagonals; these streets in such a scheme would become the main traffic highways. If traffic is to pass along them without delay, it is important that these main highways should be broken into by cross streets as seldom as possible, because every cross street that joins a main traffic way means liability to danger, collision, and delay of traffic. Instead, therefore, of planning these main roads to cut diagonally through an intricate series of cross roads, as, fortunately, has to be done in America, or of planning an intricate series of cross roads to intersect the diagonals, as is too often proposed in modern planning, the right course would seem to be to plan a few secondary roads. Let them gather up the traffic from the minor streets and turn them into the main traffic highways, with the greatest care at infrequent intervals. Not only is this the correct method of planning in order that the traffic may flow easily and be readily distributed with the least danger, but it is also the correct method in order that the main streets may have handsome façades not too much broken up by irregular street junctions. It is only necessary to consider the effect of a number of junctions and broken façades on the diagonal streets, or to examine the series of junctions and corners that occur on a new diagonal cut through an American plan, to realise the importance of this organic planning of roads. We may take the analogy of the tree: first the trunk, then the main branches split up into minor branches, and finally the twigs. We do not want our twigs growing direct out of the trunk.

Another point which needs emphasis is the importance in modern highways of sorting the traffic according to its character and speed.

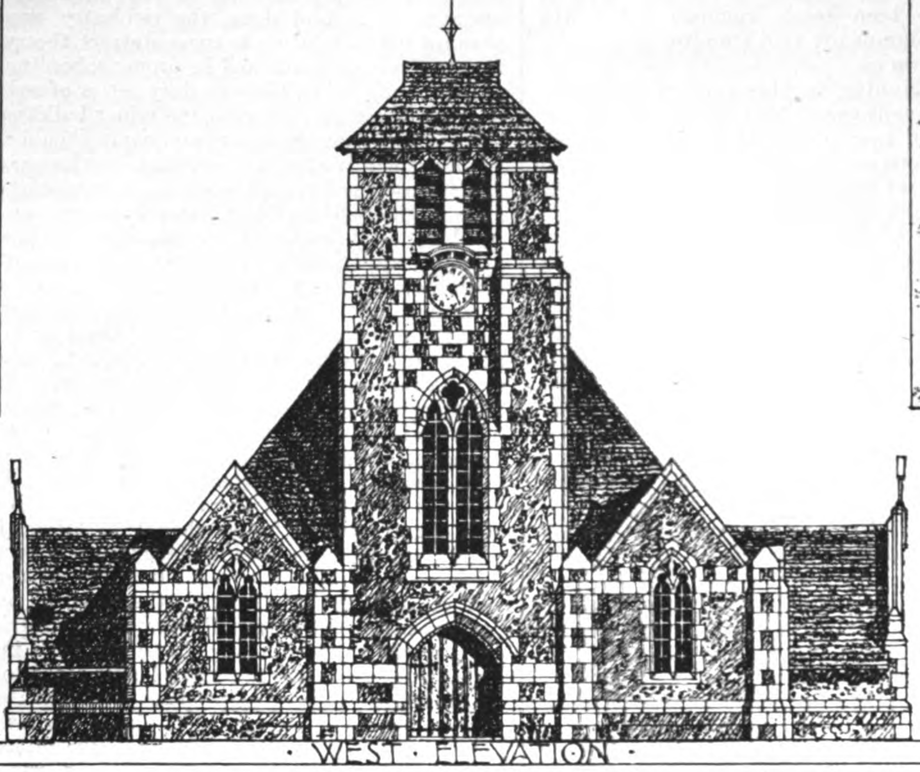
After very careful consideration of the various types of road, the Dusseldorf town-planning authorities definitely advocated a type of highway providing a central tram track, a promenade on each side, a roadway of adequate width on each side again, and the usual footpaths. They propose planting trees on each side of the central track, and a hedge to separate the trams from the promenade; and they point out that, with such a street, should it become necessary, it is possible to adopt either an overhead track or an underground track in addition to the tramway on the road level, or, in case of need, to adopt all three, and that with such a street there is the minimum of noise, dust, danger, delay, and cost. In order to save a little in width, and to make one roadway serve, roads are being proposed with the tramway running on a grass margin at one side. This form of road is used in many countries for inter-communicating roads between different towns where buildings are not expected along the roadway; but where buildings are expected the inconvenience of having the tram running between the road and the houses or shops is a very serious one, and the method cannot be considered satisfactory.

The increase in the speed of traffic has increased the neces-

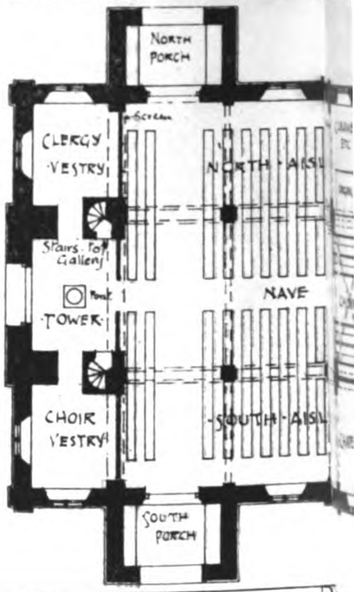
(*Continued on page* 19.)



· PERSPECTIVE · VIEW



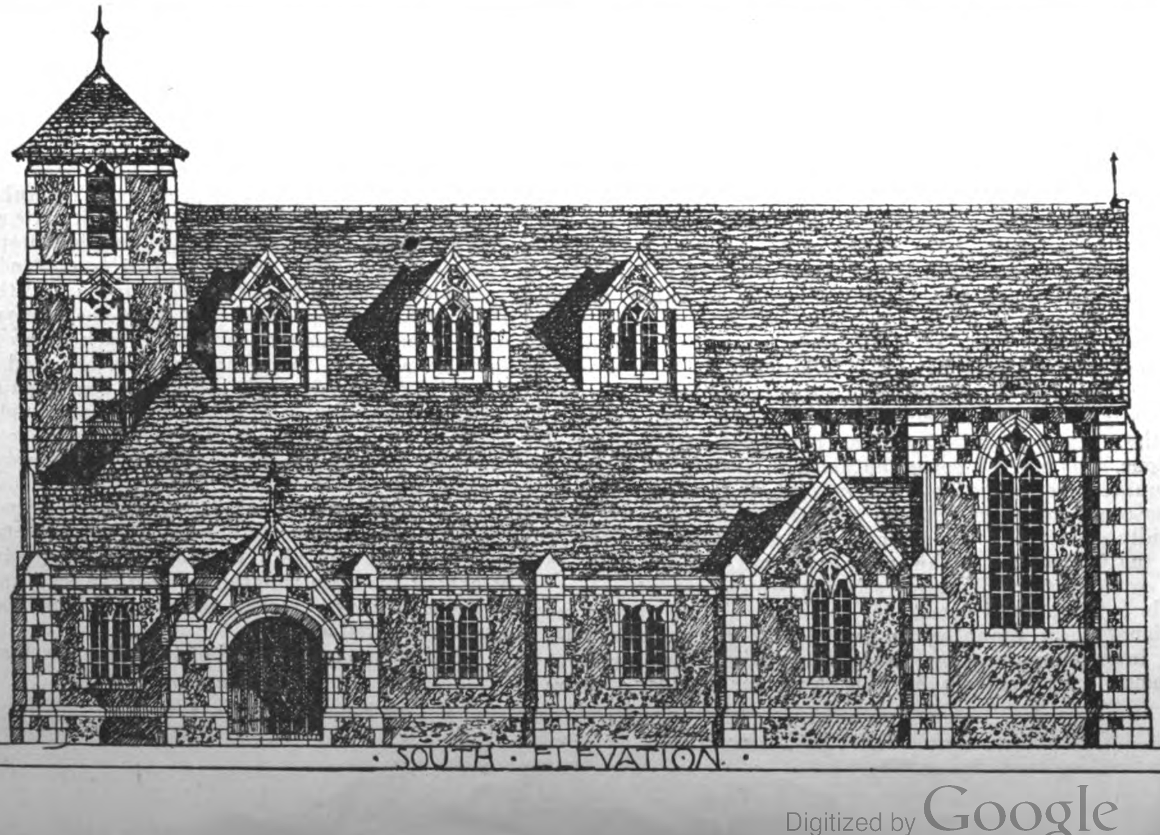
· WEST · ELEVATION ·


NORTH PORCH
SCREEN
CLERGY VESTRY
STAIRS TO GALLERY
FONT
TOWER
CHOIR VESTRY
NORTH AISL
NAVE
SOUTH AISL
SOUTH PORCH

· P

— DESCRIPTION OF BUILDING —

THE AREA OF THE SITE OF THIS CHURCH BEING VERY LIMITED. AN ATTEMPT HAS BEEN MADE TO OBTAIN A MAXIMUM SEATING ACCOMMODATION BY MEANS OF TRIFORIUM GALLERIES – THESE GALLERIES BEING APPROACHED BY STONE STAIRCASES IN THE BASE OF THE TOWER.



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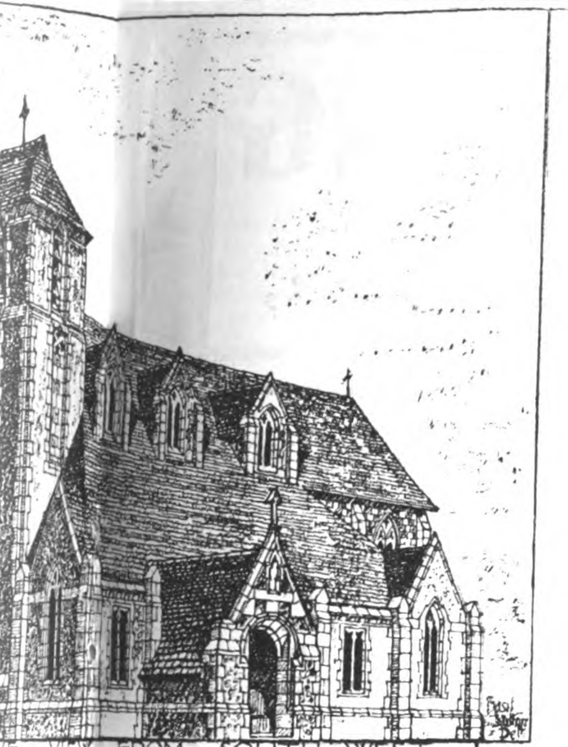
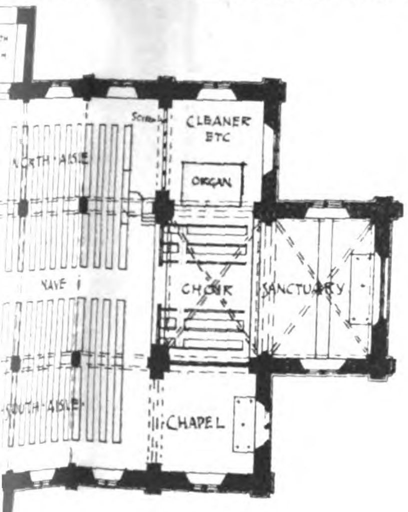
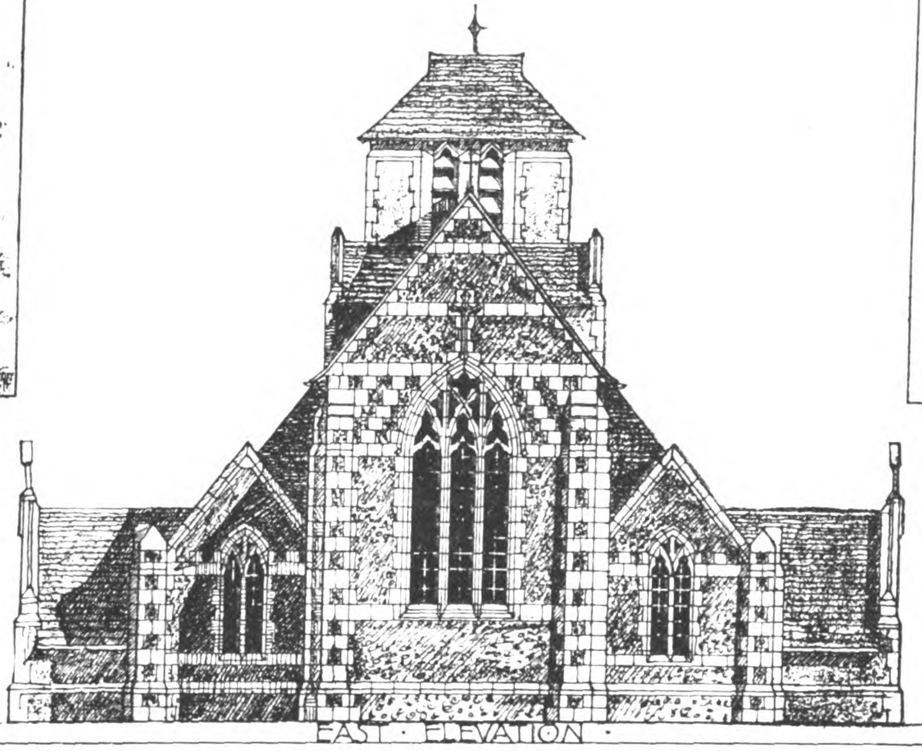


VE · VIEW · FROM · SOUTH · WEST ·


SCREEN
CLEANER ETC
ORGAN
NORTH AISLE
NAVE
CHOIR
SANCTUARY
SOUTH AISLE
CHAPEL

LAN ·



EAST · ELEVATION ·

— MATERIALS —

FLINT AND STONE WALLS - STONE SLATE ROOFS

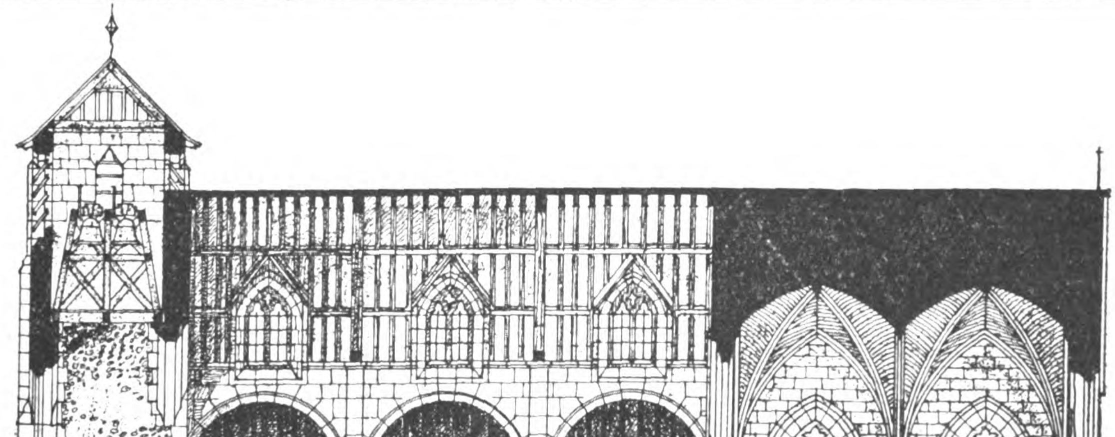
— ACCOMMODATION —

NAVE 125 . AISLES 175 . GALLERIES 50 .
CHAPEL 25 . CHOIR 24 .

SKETCH ·
· DESIGN ·
· FOR ·
· SMALL ·
SUBURBAN ·
CHURCH .

ALE FOR PLANS

2 ELEVATIONS & SECTION



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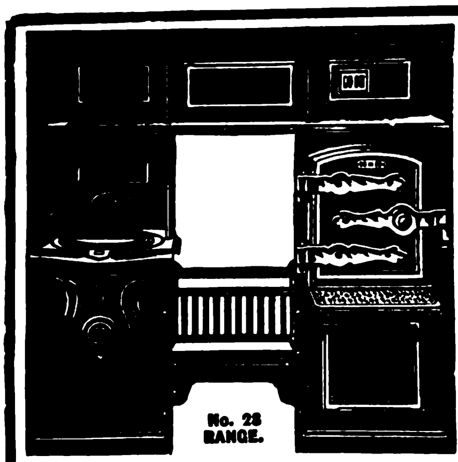

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sity for providing some form of set back of buildings at road junctions, so that approaching vehicles may be seen at a greater distance from the meeting point. This set-back may take several forms: the angle may be splayed off or rounded, but a simple, square set-back may often produce the best effect in the buildings themselves.

About other roads I will only say that there should be ample freedom allowed to employ different widths according to the different requirements. The width of the roadway is determined by the number of lines of traffic likely to be required, and the width of the footway in like manner by the lines of foot passengers. We cannot ignore cost in these matters, and if we are to have wide main roads we should equally be allowed to have narrow minor roads. A carriage drive of 13 feet wide is found to give ample access to large mansions and establishments having the population of a small village, and similar roads, if provided with proper turning places, may well serve for limited groups of houses. Two vehicles can pass when going slowly on a 13-feet carriageway, and when going rapidly on a 16-feet carriageway; on quite short roads, where speed is never required, 13 feet will suffice, and on very many residential roads 16 feet would be ample.

What I have called the organic system of road planning has the great advantage that it is less likely to be upset by change. If the main roads are properly planned, the minor roads can never become traffic routes; hence it is safe to allow less width for secondary roads, less still for minor streets, and the minimum for mere access lanes and drives. The distance between the buildings to secure light and air must be independently provided for. One of the worst features of the checkerboard plan is that as none of the roads exist to meet particular lines of traffic, and all possible routes are equally long, there is nothing to determine which shall be used as traffic, and equally land values are always changing.

There are those who advocate that all roads should be straight, and others who wish them all to be curved. The important consideration is rather to use each where it best fits the conditions of site and traffic, and to develop in each type the particular beauties characteristic of it. Why you should make an awkward acute-angled road junction to avoid curving a secondary street, so that it may have a normal junction with a more important one, or why you should make a stream of vehicles go downhill and up again to get from one point to another, to avoid making a slight detour which would give a level road, I cannot conceive. Certainly the straight road is the most direct and obvious means of getting from one point to another when the site is level and nothing intervenes. On the other hand, the straight street is the most difficult to adapt to an undulating ground, without resulting in steep gradients for traffic and a ragged skyline for the buildings due to the varying heights. The dignity and beauty of the straight street as an approach to some adequate terminal feature will be generally recognised, while, on the other hand, the interminable straight vanishing lines of perspective developed in many of the over long straight streets are anything but beautiful. In the straight street the terminal position is that of greatest emphasis; other points of emphasis may occur where there are breaks in the street line. Where no adequate terminal feature exists, the introduction to a limited extent of suitable breaks in the building line to give prominent sites for buildings, and to replace portions of the tapering lines of vanishing perspective may be desirable. Facades when seen at too acute an angle cease to be interesting; if parts of these can be set back bringing into view the side elevation of buildings more nearly square with the line of vision of the beholder, it is possible to add very greatly to the beauty of streets which lack an adequate terminal. The opening out of the building lines at road junctions, already suggested for the purposes of traffic, will have the effect of increasing the interest and beauty of straight streets. Indeed, while considerations of beauty and traffic are not the same, it will be found that in the main they are not antagonistic, and that road junctions which are convenient for traffic may be made architecturally beautiful.

The particular beauty of the curved street arises from the better display of the buildings on the concave side of the street, due to the fact that as the distance from the beholder increases, the buildings are gradually turned more and more towards him, until the view of them is cut off and limited by the convex side of the street before the angle of vision has become so acute as to render the facades uninteresting. In addition to this, the curved street has the special interest of gradually unfolding its varied picture to the beholder as he passes along, and has the further advantage that prominent features occurring on the concave side of the street will become central features dominating the street picture. These points are all illustrated by the High Street, Oxford, or the Plosterstrasse, Berlin. The convex side of the street is, however, somewhat sacrificed, and serves mainly to limit and frame the view. The more interesting buildings should therefore be placed along the concave side. The curved street is also useful in formal design on undulating ground to maintain horizontal lines of building. One must never forget in town-planning matters that while it is the road lines that show upon the plan, it is the buildings that are seen and produce the effect. A line which may look irregular on plan may result in a more regular grouping of the buildings than could be attained by a street line which might look more orderly on the plan.

(To be concluded.)

DESIGN FOR A SMALL SUBURBAN CHURCH.

THIS small church was designed to occupy a site of very limited dimensions, and a maximum seating accommodation has been obtained by means of large triforium galleries, access to which is obtained from staircases at the base of the tower.

BUILDING PROGRESS IN THE PROVINCES AND SUBURBS.

A LIST OF WORKS PROJECTED OR COMMENCED.

(N.B.—Local Authorities, architects, and others are invited to submit full particulars for insertion in this weekly list. Where districts are not entered against names of architects and builders the address is as a rule local.)

ENGLAND.

BERKSHIRE.
Reading.—University College: library (£10,000).
Chepping Wycombe.—Council School for about 500 places.

CORNWALL.
St. Austell.—Workmen's dwellings (£5,100).

DERBYSHIRE.
Belper.—The "Railway Hotel": alterations.
Carr Vale.—P.M. Church.
Chesterfield.—Sanatorium.
Derby.—Sanatorium.
Boys' Secondary School, Temple House Estate.
Spondon.—Parish Church: vestry.
Liberal Clubhouse: alterations (£700). Messrs. F. S. Antill & Son, architects, 105 Station Road, Draycott. Mr. J. Maddocks, contractor.

DEVON.
Barnstaple.—Science and Art Schools (£14,000).
Devonport.—Infants' school (for 247 places), College Road (£2,850).

DORSET.
Blandford.—Church almshouses: rebuilding (£1,000).
Swimming bath (£3,000).
Cottages for the poor (£9,000).
Villas for farmers (£9,000).
(N.B.—All these are J. I. Barnes' bequests.)

DURHAM.
Fence Houses.—No. 22 Station Lane: alterations for Mr. J. Sharp.
Eleven houses, Station Avenue, for Mr. J. Hodgson.
Thirty-four houses, behind Station Avenue, for Mr. T. Hodgson.
Neville's Cross.—House for Mr. R. Pearson.
Silksworth.—Three houses, Neargate Street, for Messrs. J. & W. Hodgson.
Spennymoor.—Municipal Buildings (£11,000).

ESSEX.
Brentwood.—Girls' Secondary School for 150 places (£6,800).
Chelmsford.—County High School for girls: extension (£3,800).
Earls Colne.—Council School for 370 places.
Epping.—Special Subjects Centre.
Romford.—Council School, Salisbury Road: additional 100 places.
Southend-on-Sea.—Baptist Church, Westcliff.
Upminster.—Church Hall, Corbets Tey Road, for Rev. H. H. Holden.

GLOUCESTERSHIRE.
Gloucester.—St. Catherine's Church: rebuilding.

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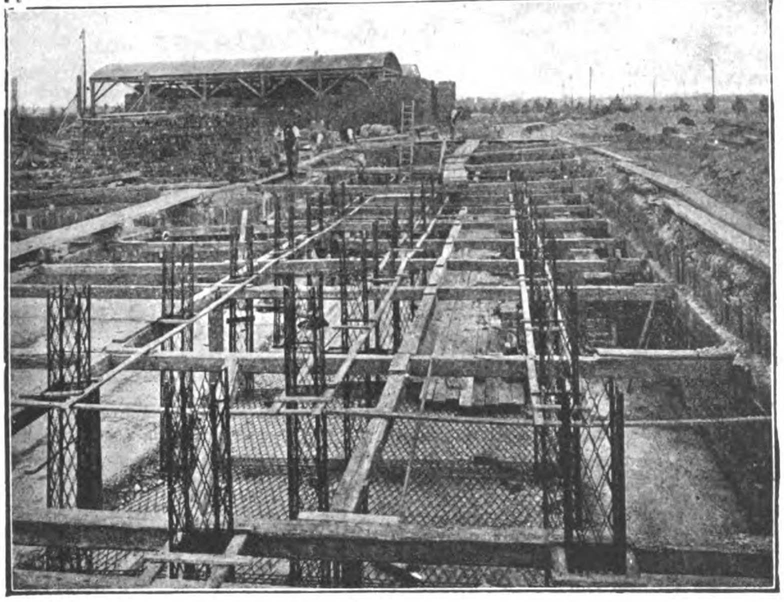

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ENGLAND—*continued.*

HAMPSHIRE.
Totton.—Council School for 200 places.
Warsash.—Coastguard Station: barracks for Naval airmen.

HERTFORDSHIRE.
Hertford.—House, Ware Road, for Mr. H. Brazier.
Hertingfordbury.—"Moat House": additions for Messrs. Avis & Booker.
Letchworth.—Proposed church and hall, Norton (£12,000).
Little Berkhamsted.—The "Old Rectory,": additions and alterations.

ISLE OF WIGHT.
Barton.—St. Paul's parsonage (£1,200).

KENT.
Westerham.—Cinema for Mr. Anderson.

LANCASHIRE.
Chorlton-cum-Hardy.—Public Baths.
Levenshulme.—Public Baths (£13,500).
Manchester.—Church and School, Blackley, for the Victoria Avenue Mission Church.
Newton-in-Makerfield.—All Saints (new) Church.
Oldham.—Congregational School, Hollinwood (£3,000).

LEICESTERSHIRE.
Leicester.—(Supplementary to December 26, 1913) Cripples' Guild Hall: extension (£1,300). Mr. A. E. Sawday, F.R.I.B.A., architect, 6 Market Street.

LINCOLNSHIRE.
Lincoln.—Workhouse: infirmary (£20,000). Mr. W. G. Watkins, A.R.I.B.A., architect, St. Edmund's Chambers, Silver Street.

MIDDLESEX.
Hanwell.—Elementary School for 300 places.

MONMOUTHSHIRE.
Pengam.—Council School (for 600 places), Cefn Forest.

NORFOLK.
Blofield.—Parish Church: restoration.
Burnham Market.—Town Hall. Mr. S. E. Mullard, architect. Messrs. A. M. Wright & Co. (of Brancaster), contractors.
Harleston.—Parish Church, Redenhall: chancel restoration (£600).

NORTHAMPTONSHIRE.
Crick.—Council School (£2,400).
Newnham.—Council School (£960).
Northampton.—Creosote Works, Cotton End, for the L.N.W.R. Co.
Warmington.—Council School: alterations (£560).
Wellingborough.—Central Boot Institute, Midland Road. Messrs. Talbot Brown & Fisher, FF.R.I.B.A., architects, Burystead Place.

NORTHUMBERLAND.
Catton Allendale.—Reading Room. Mr. J. F. S. Keenly, architect. Mr. G. Newman and Messrs. Reed & Robson, contractors.
Newcastle-on-Tyne.—Tuberculosis Sanatorium, Walker Gate (£18,600).

NOTTINGHAMSHIRE.
Newark.—Isolation Hospital: extension.

SOMERSET.
Taunton.—St. Andrew's Girls' School: enlargement (£650).

STAFFORDSHIRE.
Bramshall.—Proposed Council School.
Croxall.—Voluntary School.
Stafford.—Engineering School.
Stoke-on-Trent.—Central Mission Hall for the Wesleyan Methodists (£12,000).

SURREY.
Kingston-on-Thames.—Tiffin Boys' School, Fairfield Road.
West Clandon.—Parish Church: spire reconstruction (£1,800). Mr. W. D. Caröe, F.R.I.B.A., F.S.A., architect, 3 Great College Street, Westminster, London, S.W.

YORKSHIRE.
Ardsley, East.—Nine houses, Bradford Road, for Messrs. Waterhouse.
Doncaster.—Picture Palace, High Street, for 1,000 places. Mr. E. H. Walker, A.R.I.B.A., architect, 11 High Street.
Ecclesall.—Workhouse: operating theatre (£1,000).
Goathland.—Works at sewerage station (£5,700).
Golcar.—House and shop, Leymoor Road, for Mr. J. W. Holdsworth.
Normanton.—Seventy-six workmen's houses (£16,500).
Northallerton.—Cinematograph hall, Romanby Road, for Northallerton Cinema Co., Ltd.
Rothwell.—P.M. Church, Haigh Road.
Selby.—Ninety houses, near the Toll Bridge, for the Selby Transport and Warehouse Co.
Thirsk.—Hospital: extension (£1,000).

WALES.

Pontamman.—Elementary School, Walters Road.

SCOTLAND.

Dundee.—School, Balfour Street: extension.
Edinburgh.—No. 11 Napier Road: alterations for Mrs. J. Muirhead.
Laundry, Chesser Avenue, for St. Cuthbert's Co-operative Association, Ltd.
Giffnock.—Court House and police buildings for Renfrewshire County Council.
Glasgow.—Halls, Langside, for Erskine U.F. Church.
Proposed Hotel and Picture House, Sauchiehall and Renfield Streets (£48,000). Mr. N. C. Duff, F.R.I.B.A., architect, 187A West George Street.
Greenock.—Two-storey building for shops and offices, Roxburgh Street, for the Central Co-operative Society.
Kilbirnie.—Tenement of houses, Cochrane Street, for Mr. J. M'Ghie.
Paisley.—Golf Clubhouse, Ralston, for Sir C. W. Cayzer, Bart.
Renfrew.—Sixty-seven Garden Suburb houses, New Mains Road.
Rutherglen.—Gallowflat School: addition (£9,300).
Stranraer.—Picture House, Queen Street, for over 500 places, for Mr. E. Amy.
Troon.—Tenement of houses, Dundonald Road (£850), for Mr. J. Allan.

IRELAND.

Belfast.—Two hundred and fifty-two tenements (£25,000), for the Corporation.
Rathdowney.—Medical Officer's House, also Dispensary for the Abbeyleix Board of Guardians (£1,150).

BRITISH PATENT SPECIFICATIONS.

Selected and abridged by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

The first date given is the date of application; the second, at the end, the date of the advertisement of the acceptance of the completed specification.

No. 3,475. Feb. 11, 1913.—Construction and fixing of shoes for piles. T. E. Thain, 3 The Avenue, Whitchurch, Glamorgan.—This invention relates to the method of constructing pile shoes for both wooden and reinforced concrete piles. The shoe is made from an iron or steel plate struck out in such a manner that on bending the plate along defined lines a pyramid is formed of the shape necessary to fit over and securely protect the end of the pile. The plate is struck out so as to give the pyramidal form of the same shape as the end of the pile, and extensions or wings are arranged so that on bending along the lines of shape a top box is formed, into which the main foot of the pile is fitted, and, in the case of wooden piles, spikes are driven through suitable holes punched in the wing portion of the plate, and in this manner fully securing the shoe to the end of the pile. The shoe, when used for reinforced concrete or simple concrete piles, may be formed with the top wings or piece, forming the box, having holes punched in them so that small rods can be passed through them. The rods can be extended so that they can be incorporated with the main reinforcement, and when this main reinforcement is brought together at the point of the pile these rods can be bound round this main reinforcement, and so form a bond between the shoe and the pile. The shoes may also have perforations in the sides, so as to form a mechanical bond with the concrete free of other bonds. A flat plate has a piece struck out of it, as shown in the form A.A. The case shown is for a shoe fitted to a square pile. The development of the shoe is struck in the shape (Fig. 1), and in this form has wing pieces with the holes, h,h, punched in them in the manner and position suitable. The plate if desired can be struck in this shape in one process from a flat plate, and the lines of bending shown as O.L, and L.L, may be impressed at the same time. The outer radial edges of the plate may be chamfered, so that on bending into the pyramidal form necessary to fit on to the end of the pile a neat joint will

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be made at the position of angular jointure of the plate. Or the edges may be brought together and welded so as to form a box shoe made of flat plate. The shoe is then ready for fitting to the pile, and may be fitted thereto in one of the following ways: The shoe may be brought on to the site, and where wooden piles are in use the plate is turned up into shape along the lines of bending, and the box top fitted to the top of the shoe and spikes driven through the holes h,h, thus securing the shoe to the pile as shown in Fig. 2. Or where concrete piles are used the shoe may be brought to the site and bent over as shown in Fig. 3 to the form of the pile, with the shoulders bent inwards. Small rods, r,r, are passed through the holes punched in the shoulders, and the rods so passed can be extended upwards in the main body of the pile form. Concrete is then filled into the shuttering forming the external casing of the pile. Or where reinforced concrete piles are used the shoes may be fitted as stated, and the rods, r,r, turned round the main reinforcement and the concrete filled into the shuttering forming the external casing of the pile or the rods may be continued upwards into the centre of the pile. Dec. 3, 1913.

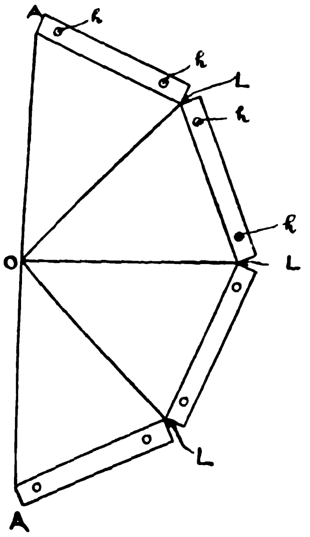

Fig. 1.

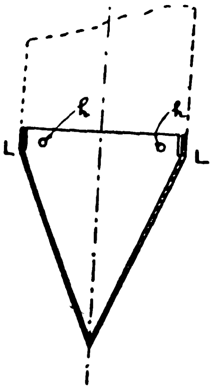

Fig 2

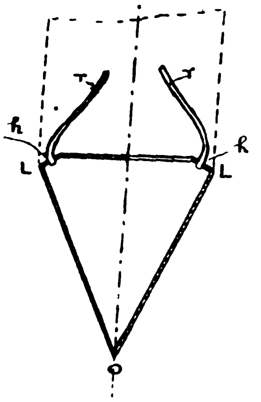

Fig 3

PATENT SPECIFICATIONS PUBLISHED DECEMBER 24, 1913.

Selected by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

No. 27,678. Dec. 2, 1912.—James Clayton, 7 Victoria Avenue, Blackpool, and Richard Taylor, Adelphi Hotel, Church Street, Blackpool. Taps or valves.

27,786. Dec. 3, 1912.—A. M. Louvet, 1 Rozel, Queen Street, Lymington, Hants. Moulding, grooving, rebating, and the like for use on rising table saw benches.

27,894. Dec. 3, 1912.—Rudolf Eberhard, 36 Adelheidstr, Munich. Manufacture of composition for impregnating or coating surfaces, binding colours, and addition to colours, particularly for the purpose of rust prevention.

2,079. Jan. 25, 1913.—George Allen, 114 Bensham Avenue, and Georg Romanis, 112 Bensham Avenue, Gateshead. Method of graining wood and other surfaces.

28,244. Dec. 7, 1912.—Franklin Thorp, "Grasmere," Whitefield, near Manchester, and H. T. Thorp, Moss Bank, Whitefield, near Manchester. Enclosed gas fire.

21. Jan. 1, 1913.—H. S. Valentine, 1 Glebe Avenue, Stirling. Gas fires.

2,892. Feb. 4, 1913.—E. G. Harcourt & W. E. Harvey, Harcourts, Ltd., Moseley Street, Birmingham. Window and like stays and fasteners.

3,277. Feb. 8, 1913.—John Morris & Son, Ltd., Salford Fire Engine Works, Salford, and James Morris, St. Bernard House, Knott End, Fleetwood, Lancs. Fire extincteurs.

3,751. May 21, 1913.—Andrew Mitchell, Longside, Aberdeenshire, Scotland. Filtering water, sewage, and the like.

3,980. Feb. 17, 1913.—F. H. Willis, 20 Victoria Street, Westminster, S.W. Reinforced hollow floors.

18,893. March 1, 1913.—S. J. Call, Lavengro, 68 Queensway, Wallasey, Chester. Suction devices applicable for vacuum cleaning apparatus and the like.

5,908. March 10, 1913.—G. T. Hill, 59 Frances Road, Norwood, near Johannesburg, and C. G. Stone, Corner House, 79 Commissioner Street, Johannesburg. Manufacture or preparation of Portland cement.

7,529. March 31, 1913.—E. J. Lane, 23 Gascoyne Road, South Hackney. Construction of joints for wood buildings.

7,859. April 3, 1913.—Dated under International Convention April 6, 1912. El. Parli & Co., 6 Oberer Quai, Biel, Switzerland. Valves for heating apparatus.

8,867. April 15, 1913.—F. G. Meeds, 6 Market Street, and William F. Gee, 166 Lea Road, Gainsborough, Lincoln. Locking device.

11,020. May 9, 1913. C. L. Cuthbe, 37 Great Eastern Street, E.C. India rubber and like flooring, stair-treads, and the like.

15,667. July 7, 1913. Dated under International Convention Dec. 16, 1912. Firm Bopp & Reuther, 1 Schiessplatzstr, Mannheim, Waldhoff, Germany. Water meter apparatus for closed pipes.

21,719. Sept. 25, 1913.—G. L. Body, 59 Chatham Street, Hamilton, Wentworth, Ontario, Canada. Weather-proof windows.

10,289. May 1, 1913.—Dated under International Convention May 2, 1912. Camille Arpin, 23 rue Michelle-Comte, Paris. Electric radiators for heating.

15,921. July 10, 1913.—Aktieselskab J. S. Hess & Son and H. Svendsend-Hess, Middlefart, Denmark. Open fireplaces.

16,667. July 21, 1913.—A. W. Storey, Ascendant Works, Wellington Street, Newton Heath, Manchester. Adjustable stirrup or bond for use in reinforced concrete constructions.

21,188. Sept. 19, 1913.—Henry Sidebottom, 75 Hawthorne Road, Chorlton-cum-Hardy, Manchester, and the Non-Choker Heater Co., Ltd., 5A Chapel Street, Salford, Manchester. Back cheeks or false backs for domestic and like firegrates.

23,395. Oct. 16, 1913.—Chas. Colledge & Harvey Bridgen, Midland Lock Works, Wolverhampton, and W. J. McWilliams, 4 and 6 Library Building, Port Elizabeth, South Africa, architect. Locking devices.

Any of the above specifications may be obtained from J. D. Roots & Co.

Correspondence

[The Editor will not be responsible for the opinions expressed by Correspondents.]

Re Kingsway and Aldwych.

Sir,—The article in your issue of the 19th inst. on the above subject is, we think, so worded as to give the impression that the design now approved by the Improvements Committee of the London County Council was prepared by us in association with Sir Ernest George. This is not the case. Sir Ernest George prepared an elevation to which our clients would not agree, and the design now approved by the London County Council was not commenced by us until after Sir Ernest George had left for India, and is entirely our own conception.

We shall be glad if you will kindly publish this letter in order to remove any misrepresentation which might arise from your paragraph.—Yours faithfully,

Trehearne & Norman.

Sardinia House, 52 Lincoln's Inn Fields, London, W.C.:
December 29, 1913.

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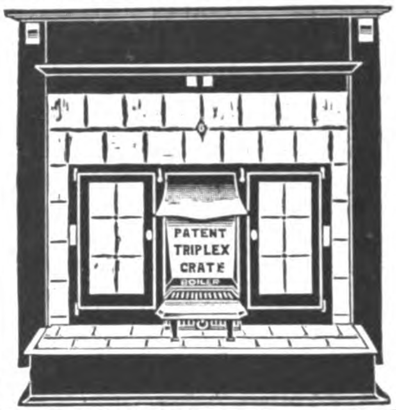

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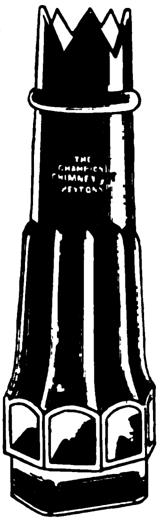

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THE ARCHITECT

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FORTHCOMING EVENTS.

Friday, January 9.

Incorporated Institute of British Decorators : Presentation of gold medal to Mr. Metford Warner, and Paper, entitled "Holkham Hall," by Mr. A. Barnard Cowtan, F.I.B.D., at 8 P.M.

Monday, January 12.

Surveyors' Institution : Paper, entitled "The Law of Dilapidations," by Mr. Graham Mould (Associate), Barrister-at-Law, at 8 P.M.

Tuesday, January 13.

London Society : Ordinary General Meeting at the Royal United Services Institution, Whitehall, S.W., at 8 P.M.

Wednesday, January 14.

Manchester Society of Architects : Paper by Mr. J. Beaumont, jun., at 6.30.

Northern Architectural Association : Paper, entitled "The Planning of Gardens," by Mr. T. H. Mawson, Hon. A.R.I.B.A., at 7.30 P.M.

Thursday, January 15.

Illuminating Engineering Society : Resumed Discussion on "Some Problems in Daylight Illumination, with special reference to School Planning," at 8 P.M.

ARCHITECTURE IN 1913.

During the past year architecture and the building trade have continued to suffer from the deterrent influences of the Finance Act and land taxes. Not only has the Act itself been prejudicial to activity, but the interpretation which has been sought to be put upon it—in some cases successfully, in other cases without avail—by the Commissioners of Inland Revenue has effectually put a damper on all inclination to regard bricks and mortar as a suitable field for speculation or investment. The lifetime of the present Parliament is, however, drawing towards its close, and Lloyd George finance is completely discredited, even amongst his most faithful followers. Evidence of this is to be seen in the introduction of the Revenue Bill last session, in the frantic attempts of the great vote-catcher to divert attention from his failure as a financier by the inception of a land crusade, and, when this has fallen flat, by the final endeavour to be leader of some party or other, even though it be but the Little Navy section or Suicide Club.

Amongst the most interesting events of the year concerned with architecture has been the interest displayed both in professional circles and by the general public in the safety of

St. Paul's Cathedral.

With the help of Sir Francis Fox, the Cathedral authorities have succeeded in arousing alarm—much of which, between ourselves, is unnecessary—for the continued existence of Sir Christopher Wren's masterpiece. This much good has, at any rate, resulted—that the London County Council has abandoned its scheme of a tramway subway near the east end of the Cathedral. Another event of great architectural importance has been the determination of the site of the

New Delhi,

the future capital of the Empire of India, the final report of the three experts—Captain Swinton, Mr. J. A. Brodie, and Mr. E. L. Lutyens—having been in substance adopted. In connection with the new Delhi, it is interesting to record that Mr. E. L. Lutyens and Mr. Herbert Baker, with the assistance and advice of Sir Swinton Jacob, K.C.I.E., have been appointed as architects for the Government House and the Secretariats building, which will form the centre of the scheme for the planning of the new Delhi.

We may also congratulate ourselves upon the clearing up of the *impasse* for the completion of the

Mall Ceremonial Road

and the opening up of the Admiralty Arch, the three parties concerned—the Government, the London County Council, and the Westminster City Council—having at last composed their differences and arranged to participate in the necessary steps for a fitting connection of the Mall with Charing Cross.

The past year is one which may always well be remembered as the first in which English architecture has, to a certain extent, been placed on a level with that of France by the selection of holders of the

First Rome Scholarship in Architecture

and its no less important companion, the Henry Jarvis Scholarship. In the former of these Mr. Harold Chalton Bradshaw has secured the unique honour of being the first British Rome scholar in architecture, while Mr. Louis de Soissons is the first holder of the Henry Jarvis scholarship.

We have had in 1913 almost a surfeit of

Exhibitions

connected with architecture and the building trades, not only in our own country, supplemented by the Ideal Home Exhibition and the National Gas Congress and Exhibition, but also the International Exhibition at Ghent and the great Building Exhibition at Leipzig.

The pressing necessity throughout the country for decent housing for the least highly paid workers, and particularly agricultural labourers, has stirred up the public interest in the so-called

Cheap Cottage,

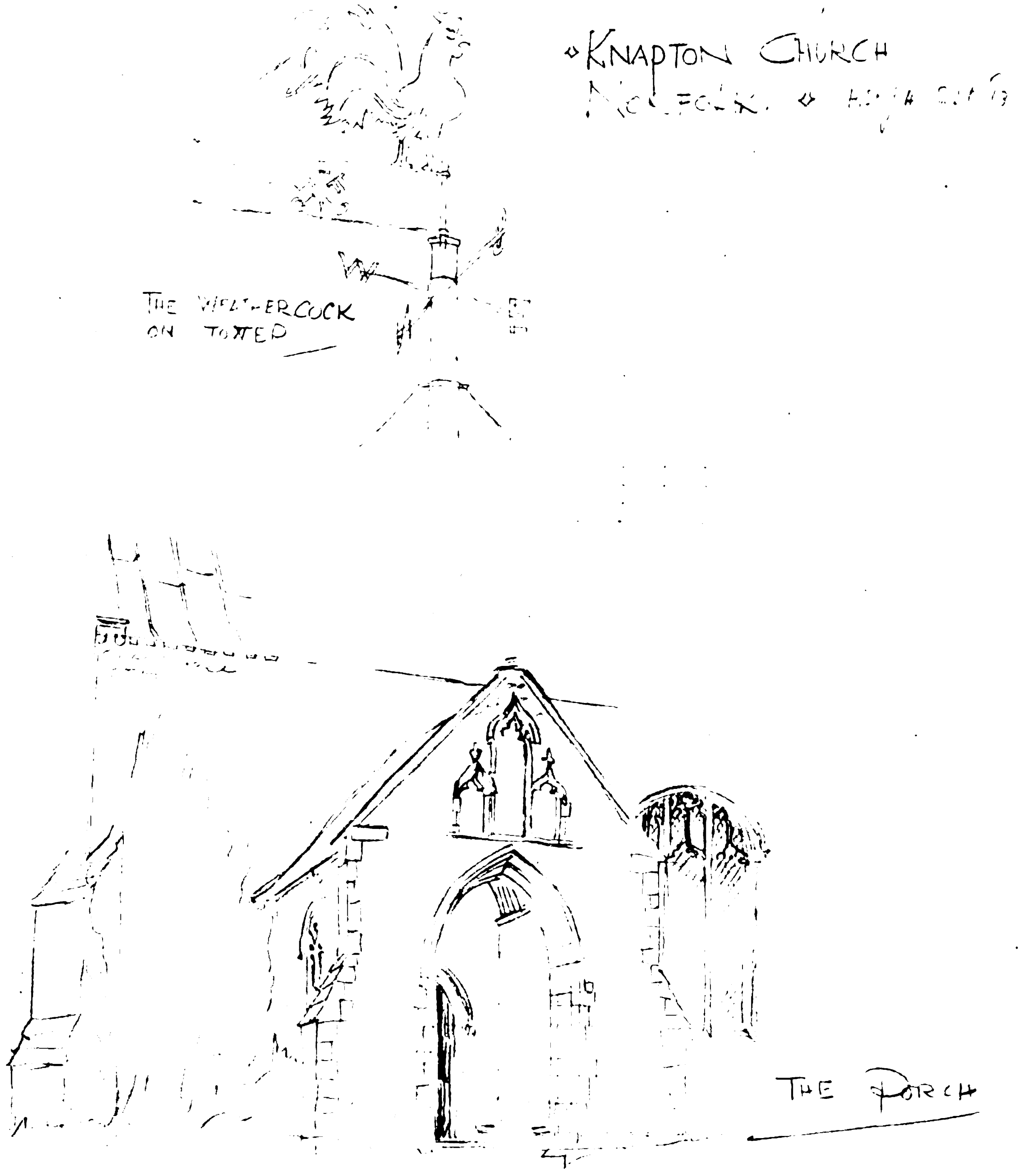
and the avowed intention of the Government to use public money in assisting the erection of 150,000 cottages, which their financial schemes have prevented private owners from being able to afford, has increased the activity in production of designs for low-priced cottages.

The close of the year has seen the inception of several important

Competitions,

to the annoyance of the regularly competing architects in the profession by the superabundance of good things all at once after a period of dearth.

Although the number of open competitions for buildings of large extent has not been great during the past year, there have been decided a considerable number of those of lesser importance. Amongst the more important

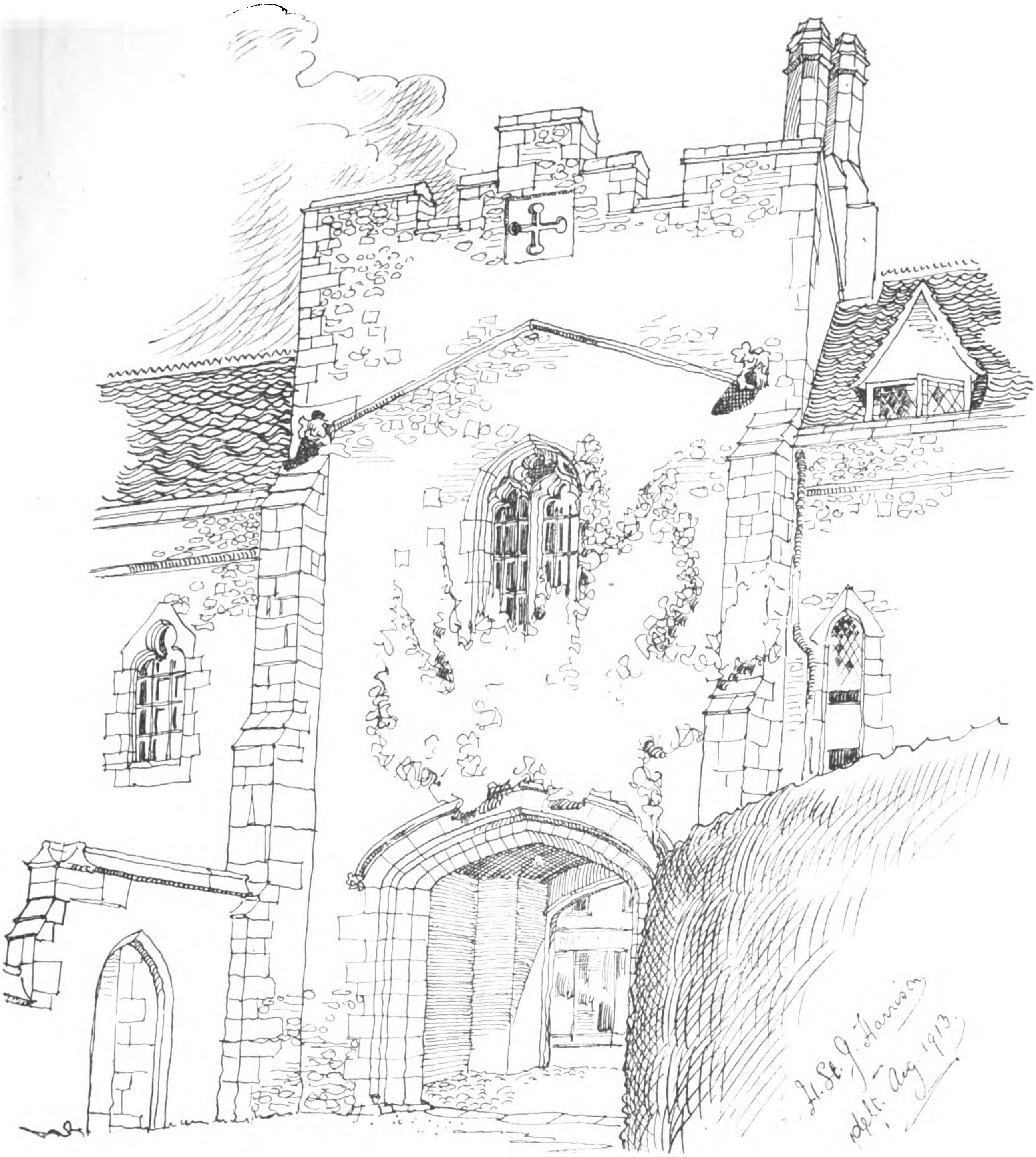


FROM A SKETCH BY MR. H. ST. JOHN HARRISON, "THE ARCHITECT" TRAVELLING STUDENT, 1913.

were those for Dublin Municipal Buildings, the extension of Glasgow Municipal Buildings and Devonport Municipal Buildings. That for Dublin Municipal Buildings was limited to architects in Ireland, and was assessed by Mr. Albert E. Murray, R.H.A., who placed first the design by Messrs. McDonnell & Reid, and awarded the second place, with premium of £150, to Mr. F. G. Hicks, and the third, with £100, to Messrs. O'Callaghan & Webb. For the extension of Glasgow Municipal Buildings Dr. J. J. Burnet, A.R.S.A., was the assessor, and placed first the designs of Messrs. Watson & Salmond. Devonport Municipal Buildings saw Messrs. Ashley & Newman placed first, Messrs. Harris & Moodie second, and Messrs. Knott & Collins third by the assessor, Mr. Ernest Newton, A.R.A.

Town-planning formed the subject of several competitions. At Huddersfield a first premium of 100 guineas was won by Mr. Alfred Hill, a second of 50 guineas by Messrs. M. A. Piercy, W. H. Beeston, C. R. Thomson & P. H. Solon, and a third of 25 guineas by Messrs. Hart & Turner. At Oldham the assessor, Professor S. D. Adshead, placed first the scheme of Mr. F. Thorpe, second that of Messrs. C. T. Taylor & Evan Roberts, and third that of Messrs. J. Collins & Son. For a garden suburb at Ipswich the first place was gained by Messrs. C. M. Crickmer & C. Whitby, the second by Mr. S. A. Wilmot, the third by Mr. M. S. Hack, and the fourth by Messrs. Hallas & Turner. For a town-planning scheme for Blackburn Professor S. D. Adshead, the assessor, awarded the first prize of £500 to Mr.

Gateway at Ely. Cambs:



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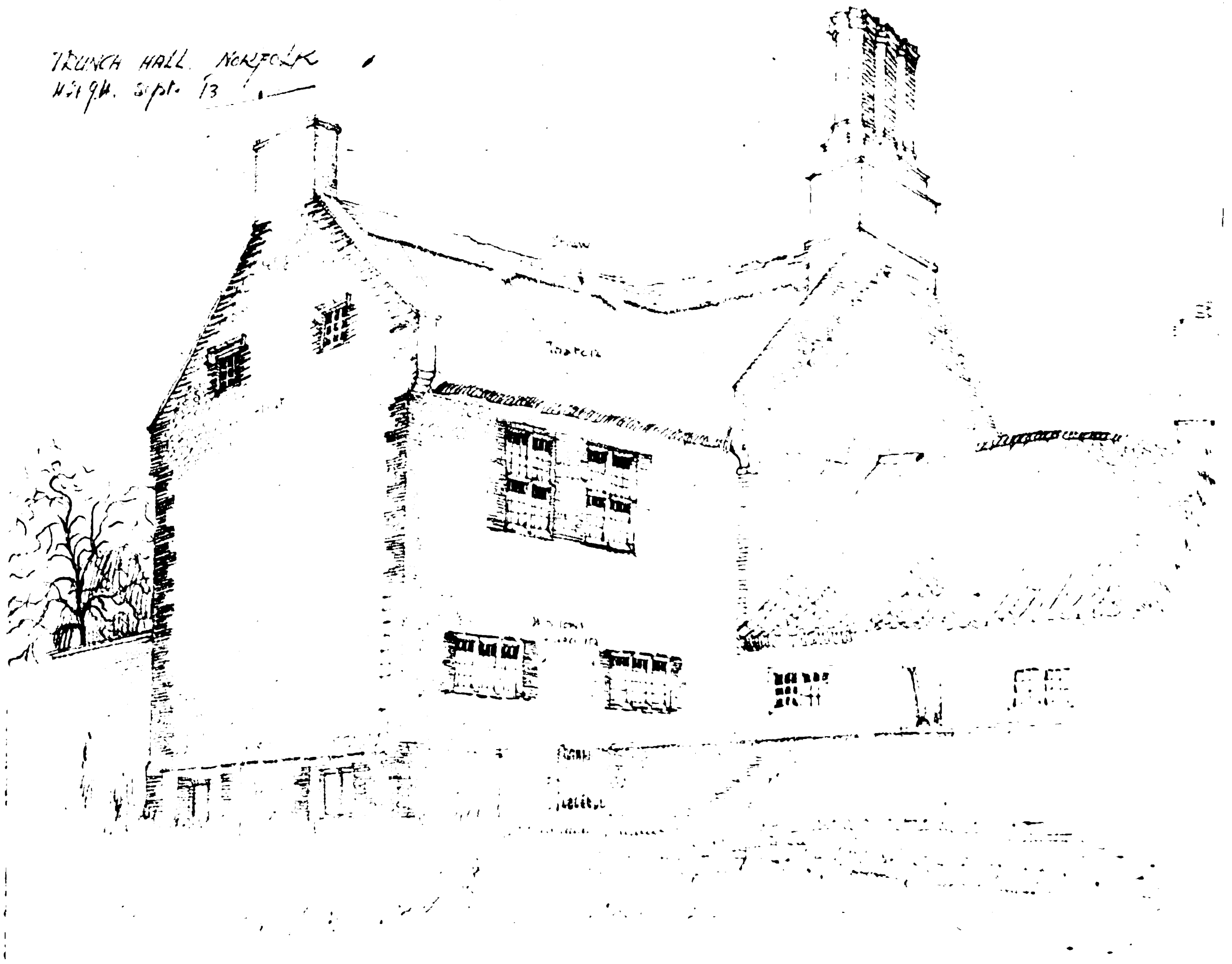
J. M. L. Bogle, the second of £50 to Mr. W. Stirrup, and the third of £25 to Messrs. Briggs, Wolstenholme & Thornely. For the development of the Corporation's Southfield Estate, Bradford, the assessor, Mr. H. T. Hare, F.R.I.B.A., selected for the first prize of £300 the scheme of Mr. H. S. East, for the second of £200 that of Messrs. Geoffry Lucas & A. Lodge with P. Badcock, and for the third of £100 that of Mr. P. Abercrombie.

Educational institutions still form a fruitful field for competitions, despite the general appointment of official architects *ad hoc*. For a Council school at Chorley the first place was obtained by Messrs. A. J. Shaw & T. H. Vowles, the second by Messrs. Henry Jones & Son, and the third by Messrs. Ernest H. Smith & H. Millar Robinson. In a limited competition for the West China Union University the designs of Messrs. Fred Rowntree & Son were selected. For a new building for the Faculty of Arts, Manchester University, the designs of Messrs. T. Worthington & Son were successful in a limited competition. For Newtown School, Carlisle, Mr. H. C. Charlewood, the assessor, placed first the designs of Messrs. Oliver & Dodgshun, second those of Mr. T. Taylor Scott, and third those of Mr. J. W. Benwell.

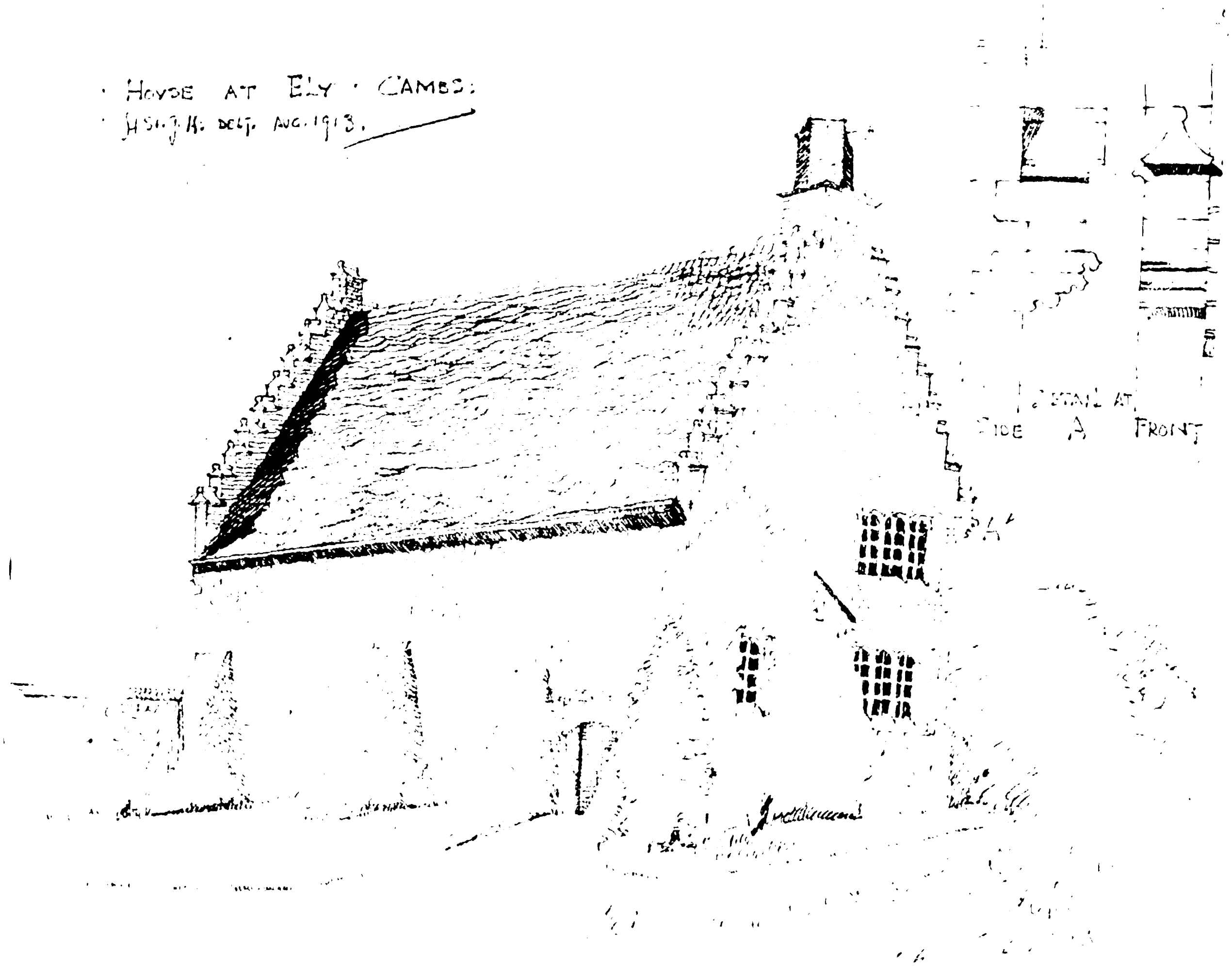


FROM A SKETCH BY MR. H. ST. JOHN HARRISON, "THE ARCHITECT" TRAVELLING STUDENT, 1913.

Dr. J. J. Burnet, A.R.S.A., was the assessor for a new school at Kirkcaldy, and awarded both first and second place to Mr. W. Williamson, the third to Mr. W. Dow, and the fourth to Mr. A. Welsh. For Harrogate Elementary School, Mr. Sydney D. Kitson, M.A., placed first Mr. C. H. Channon, second Messrs. Gascoyne & Nott, and third Messrs. Hickton & Farmer. Mr. H. Beswick, assessing a competition for school at Sale, placed first the design of Mr. P. C. Hoy, second that of Mr. F. Q. Farmer, third that of Mr. P. D. Lodge. For a Council school at Northampton, Mr. J. Osborne Smith, the assessor, selected Messrs. Blackwell & Ridley for first place, Messrs. Talbot Brown & Fisher for second, and Mr. A. E. Anderson for third. A High school at Motherwell, Glasgow, assessed by Dr. J. J. Burnet, A.R.S.A., was awarded to Mr. S. B. Russell, the second place being gained by Messrs. Cleland & Hayward, the third by Messrs. Crouch, Butler & Savage, and the fourth by Mr. Arnold Mitchell. A limited competition for elementary school at Plymouth saw the first premium awarded by the assessor, Mr. E. Guy Dawber, to Messrs. Thornely, Rooke & Barron, and the second to Messrs. Sedding & Wheatley. A hostel for male students at Exeter was won by Messrs. Garratt & Simister, the second place being taken by Messrs. Gascoyne & Nott, and the third by Mr. A. W. Kenyon. The competition for a Council school at Shirehampton, Bristol, was won by Messrs. Herbert J. Jones & Son, and that for Blue Coat School at Birmingham by Mr. J. L. Ball.

Baths still occasionally come into the competition market, and at Balham Mr. H. W. Wills, the assessor, placed first the designs of Messrs. S. N. Cooke & W. N. Twist, second those of Messrs. Page & Snell, and third those of Mr. H. Burgess. A swimming-bath for Bootham School, York, was won by Mr. R. W. Thorp, Mr. W. H. Brierley, F.S.A., being the assessor. For Arbroath Public Baths Mr. James Thompson, the assessor, placed first Mr. H. Gavin, second Mr. D. W. Galloway, and third Messrs. Wilson & Savage. In a triple competition at Newcastle for baths at Walker, Benwell and Heaton respectively, Mr. H. W. Wills, the assessor, arrived at the same conclusion for each, and awarded the first place to Mr. A. W. S. Cross, the second to Messrs. Wallis & Bowden, and the third to Messrs. Wright & Chapman. At Finchley the same assessor placed first, once again, the design of Mr. A. W. S. Cross, Messrs. Williams & Cox being second, and Messrs. Richardson & Gill third.

Other competitions decided during the past year include those for District Library, Langside, Glasgow, where Mr. A. T. Scott obtained the first premium, but his design being regarded as too costly, that placed second, the work of Mr. G. Simpson, was selected for execution, the third premium being awarded to Mr. A. G. Henderson; working-class dwellings, Belfast, where Messrs. Chillingworth & Leavie were first, Mr. M. B. Bennett second, and Mr. J. St. J. Phillips third; Bradwell Sanatorium, won by Messrs. A. R. Wood & Son, Mr. W. F. Slater being second; the First Church of Christ Scientist, Leeds, where the assessor, Mr. W. H. Brierley, F.S.A., placed first the design of Mr. W. P. Schofield; second, that of Mr. J. S. Gibson, and third, that of Mr. S. K. Greenslade; Amersham Isolation Hospital, Mr. J. E. Newberry, assessor, where Messrs. Wills, Anderson & Kaula were first, and Mr. E. G. Theakston second; St. James's Church, Coulsdon, won by Messrs. Greenaway & Newberry; Bridport Cottage Hospital, where the assessors, Messrs. F. Wheeler and S. Searle, placed first


· House at Ely · Cambs:
· H St. J. H. delt. Aug. 1913.
Detail at Side A Front
A

FROM A SKETCH BY MR. H. ST. JOHN HARRISON, "THE ARCHITECT" TRAVELLING STUDENT, 1913.

the design of Messrs. F. H. Shayler & E. R. Bill; Liverpool Sanatorium for Tuberculosis, won by Messrs. T. R. & V. Hooper, Messrs. Brooke & Elcock being second, and Mr. T. W. Haigh third.

Important Buildings Commenced

during the past year include the superstructure of the London County Hall, Mr. Ralph Knott being the architect; the extension of Bristol University at a cost of £150,000, from the design of Messrs. G. H. Oatley & Lawrence; additions to Tooting Bec Asylum at £151,000, Mr. T. W. Aldwinckle being the architect; hotel at Harrogate, to cost £75,000, from the design of Mr. Landless; the headquarters of the Theosophical Society in England and Wales, designed by Mr. E. L. Lutyens, A.R.A.; training college at Aberdeen, costing £50,500, Mr. J. Ogg Allan being the architect; railway station at Aberdeen, to cost £140,000; Municipal Buildings, Coventry, won by Messrs. Garratt, Simister & Buckland in open competition; Marylebone Town Hall, Mr. T. Edwin Cooper, architect, for which a tender at £73,168 by Messrs. J. Greenwood, Ltd., has been accepted; a building for the Government of the Commonwealth of Australia in the Strand, London, for which Messrs. A. Marshall Mackenzie & Son are the architects.

Important Buildings Completed

include the School of Architecture and the Chemistry Building at University College, London, from the designs of Professor F. M. Simpson; additions to Lancing College, Sussex, by Messrs. J. W. Simpson & Maxwell Ayrton; the Pearl Assurance Company's offices, Holborn, costing £160,000, of which Mr. H. Percy Monckton is architect; the Institution of Civil Engineers, Westminster, designed by Mr. James Miller, A.R.S.A.; the extension of the British Museum, by Dr. J. J. Burnet, A.R.S.A.; the new building of the Imperial College of Science and Technology, of which the architect is Sir Aston Webb, C.B., C.V.O., R.A.; and the Middlesex Guildhall, by Messrs. J. S. Gibson, Skipwith & Gordon.

Honours

conferred upon architects during the past year commenced with a baronetcy to Thomas Graham Jackson, R.A., in the New Year honours list. Mr. E. L. Lutyens has been elected an Associate of the Royal Academy. Mr. Reginald Blomfield, A.R.A., has been presented with the Royal Gold Medal. Mr. Reginald St. Aubyn Roumieu, A.R.I.B.A., has been appointed a Knight of Grace of the Order of St. John of Jerusalem in England. Dr. J. J. Burnet, A.R.S.A., has been elected a corresponding member of the Institut de France. Mr. Frank T. Verity, F.R.I.B.A., has been elected a corresponding member of the Société Archéologique de France. The

Obituary

of the year includes the names of the following architects: F. J. Smith, T. H. Watson, W. C. Oliver, W. A. Coombs, J. H. Eastwood, W. Flockhart, W. J. Ancell, F. R. N. Haswell, W. G. B. Lewis, R. F. Macdonald, J. F. Doyle, H. Winstanley, J. Medland, S. R. J. Smith, R. H. Burden, W. J. Fletcher, T. E. L. James. W. C. Street, W. H. Lancashire, J. Oldrid Scott, J. M. Whitelaw, W. C. Ralph, J. W. Vickers-Edwards, O. W. Davis, J. B. Corby, G. H. Daymond, R. S. Hyde, J. D. Webster, E. A. Runtz, A. Thomson, J. Belcher, J. Jerdan, W. Emden, R. D. Sandilands.

THE LATEST REGISTRATION BILL.

THE Bill which Mr. G. A. T. Middleton (A) is to ask the Royal Institute on Monday next to "support to the utmost" is at present only in draft, and most vitally important figures are left blank. Under the provisions of the Bill the control of the registration of architects is to be in the hands of a Council to be styled "The Council of Architectural Education and Registration of the United Kingdom." This Council is to consist of ". . . persons nominated from time to time by His Majesty, with the advice of his Privy Council; and the architects chosen from time to time by each of the following bodies: . . . by the Council of the Royal Institute of British Architects; . . . by the Council of the Society of Architects, founded 1884; . . . by the Council of the Royal Institute of Architects, Ireland; and . . . architects hereinafter referred to as 'direct representatives,' who shall be elected by registered practitioners."

The figures with which the blanks are to be filled are obviously most vitally important, and until they are settled it is futile to expect support from any of the bodies named—other than the Society— or from the Allied Societies of the Royal Institute. It will be noticed that the nominees of the Privy Council need not under the terms of the Bill be architects. They are only required to be "persons," and may outnumber the architect members.

A vital defect in the Bill is that although it constitutes a "Council of Architectural Education," empowered to appoint a Board of Examiners and inspect and review its proceedings, there is no reference to the Universities or other educational bodies. The Bill will, therefore, inevitably be opposed by the Universities, who cannot be expected to submit entirely to outside dictation as to the courses of instruction they are to conduct. The Universities do not need to offer formal opposition in the Committee rooms; they possess sufficient influence in the Lobby to kill the Bill.

Persons qualified to be registered are defined by the Bill as firstly members or licentiates of the Royal Institute, members of the Society of Architects, "professional" members of the allied societies of the Royal Institute and of architectural societies in Bradford, Wolverhampton, and Preston. Has the Society of Architects, by the way, purged itself of all its non-professional members, or are they to be specially favoured beyond those of other societies? Secondly, any person actually practising architecture in the United Kingdom on the first day of January, one thousand nine hundred and fourteen, and still so practising on the first day of January, one thousand nine hundred and fifteen, or who has served as apprentice, assistant, or practitioner in architecture, all or either, for five years in the aggregate, prior to the first day of January, one thousand nine hundred and fifteen, and after having attained the age of seventeen years.

Here we come to the Scylla and Charybdis of registration. Parliament will not sanction a Registration Bill that does not provide for vested interests. There are a number of eminent architects who will not consent to being placed on the same register with everyone who today calls himself an architect, or who may even be "actually practising architecture," in a legal sense, on January 1 of this year. We know of at least half a dozen of these eminent architects, any one of whom has sufficient influence in the Lobby to kill the Bill.

The third class of persons to be registered under the Bill are those who have "gone through a satisfactory course of architectural education in a manner approved by the Council" and "passed such examination or examinations as the Council shall authorise."

It is not a difficult matter, if one does not mind the cost, to get a Bill introduced in Parliament, but it is just as easy, in the present condition of Parliamentary business, and far less expensive, to kill it in the Lobby; so, strongly as we are still in favour of the principle of registration, we cannot regard the chances of the Society's latest Bill as other than hopeless, for the reasons we have already expressed, and it is therefore useless to discuss further the terms of the Bill, some of which are amusing.

NOTES AND COMMENTS.

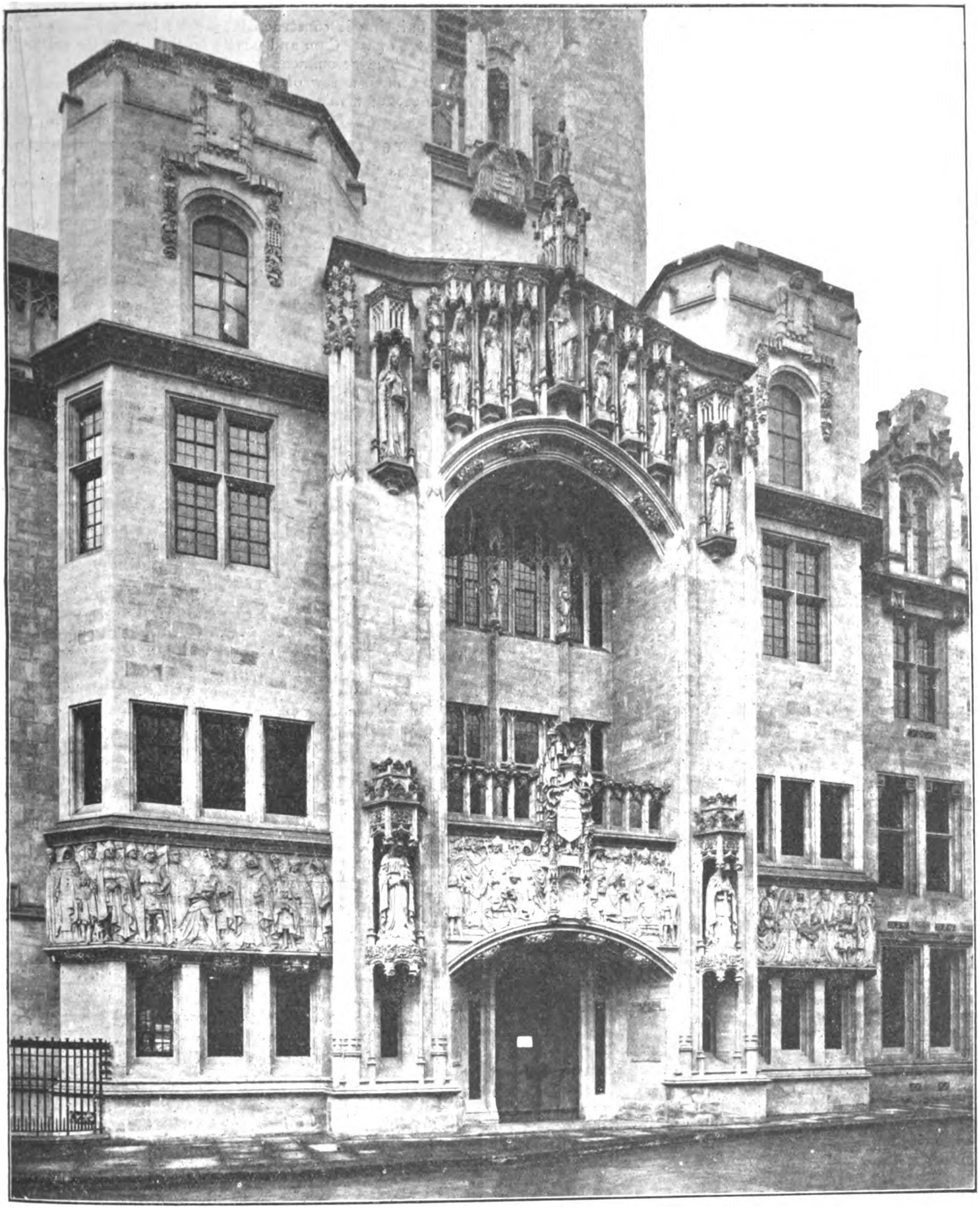
THE suggestion to restore to the strata under St. Paul's Cathedral some of the water which has been drawn from it by erecting a barrier of reinforced concrete around the whole of the site and pouring water into the gravel is ingenious and would probably be efficacious if the concrete wall could be constructed without break, but it is likely that numerous obstacles would occur in the shape of pipes of various kinds, and possibly cellarage or underground structures belonging to the mediæval cathedral.

We rather incline to a preference for the method proposed by Sir Francis Fox of grouting the gravel by forcing into it cement through perforated steel tubes, of which method experiments have been made on the cleared site of the old General Post Office and now await examination. The practice of grouting gravel and sand is not by any means new, and has been employed by American engineers in several instances with complete success. In these cases the usual method has been to sink tubes to varying depths, from the bottom of which the cement grouting is forced into the gravel. This spreads out in a fanlike form and results in satisfactory consolidation.

It is interesting to find the *Manchester Guardian*, in its review of the past year, laying emphasis on the desolation of the present Infirmary site, and contrasting it with what it might be if the design by Messrs. Crouch, Butler & Savage for the new art gallery and library were carried out. Such attention on the part of the general Press to matters architectural is of good omen for the future appreciation of our art by the general public.

The discovery at Nayland, near Colchester, of a piece of quartzite stone engraved with an incised drawing is one more proof of the high artistic ability of palæolithic man. It seems probable that the tool with which this engraving was made was a natural sharp-pointed quartz crystal, demonstrating the ingenuity and resource of the palæolithic artist who was not content to follow the example of his contemporaries in using for their work soft stones, ivory, or bone.

An interesting lecture by Mr. Maurice Drake to the Camera Club on "The Making of a Stained-glass Window" well epitomised the leading principles still actuating the craft of the maker of stained-glass windows. Mr. Drake said that in one of the later developments of the craft and mystery of photography, that of the coloured photograph, the photographer had succeeded in doing what the stained-glass artist had been trying to do for 800 years, to make a coloured transparent picture. If the latter craftsman failed he did so as a picture maker, and in such magnificent failures he created a new set of rules entirely, which even now we had to abide by. His work might have been a failure as pictures, but it succeeded as stained glass. It was not until the glass painter of fifty years ago learned to give up the attempt to make pictures that modern glass of good quality was turned out. The makers of coloured photographs worked in a new craft, but the maker of stained-glass windows was still engaged in a handicraft practically unchanged for the last 500 years, and the only advance which had been made was in looking backwards. Thomas of Winchester, who practised the craft about 1400, and whose portrait was to be seen in the east window of the College Chapel at Winchester, would feel at home to-day in the glass painters' shop, where he could get a job at any time. He would follow the methods of the modern workman in getting his sizes, making his sketch, and his full-sized cartoon, using charcoal on a board covered with whiting, and all instead of paper; and he would cut his pieces of glass and fix them together with lead just as in the present day. He would even be at home with the modern tools, with



[Photograph by E. Milner.

ENTRANCE TO THE NEW MIDDLESEX GUILDHALL, WESTMINSTER.—Messrs. J. S. GIBSON, SKIPWITH & GORDON, Architects.

few exceptions. In showing lantern views of various stained-glass windows, the lecturer said that the windows in Trinity Chapel, Canterbury, with their richness and intricacy, were an example of failure as pictures but a splendid success as glass. They were a kaleidoscope when they were put up, and their tone beauty now was the result of eight centuries of dirt. The attempt to make a picture on glass went on in later years, and we did not succeed until the eighteenth century, and then our success was even worse than anyone's failures. Sir Joshua Reynolds knew what a picture was, but his windows in New College, Oxford, were flat and muddy, and everything that stained glass should not be. In conclusion, Mr. Drake said that until architects gave them a lead he feared that many stained-glass artists would go on working in the mediæval style.

NOTES ON BOOKS.

"The Cathedrals of Southern France." By T. Francis Bumpus, author of "The Cathedrals of England and Wales," "The Cathedrals of Northern France," &c., &c. (London: T. Werner Laurie, Ltd. 6s. net.)

IT may seem strange, on opening a book on the cathedrals of Southern France, to find the earlier chapters devoted to the cathedral churches of Brittany; but although the ostensible reason for this, as given by the author, is that exigencies of space prevented their inclusion in the earlier volume on the cathedrals of Northern France, there is nevertheless some logical reason for the course adopted. The essential difference between the Mediæval church architecture of Northern and Southern France is the subservience of the former to the constructive and artistic principles of the Ile de France, the independence of the latter from any dominance other than that of its own provincial type. There is a wide divergence between Aquitaine and Auvergne, for example, that cannot be recognised in the North. In this respect Brittany, for its independence and individuality, is rightly classed, architecturally, amongst the southern provinces. The Basque element in the South-west and the Greco-Roman tradition in the South and East, to say nothing of the Anglican influence in Guienne, all assisted to split up the South of France into distinct architectural entities. As in all of the books by Mr. Francis Bumpus, we find in this volume full and critical description of each church amplified by referential comparison with cognate work throughout Europe, which the extensive knowledge of the author so well enables him to furnish. The individualities of Southern French ecclesiastical design are well elucidated, and the volume is an admirable introduction to its study. The illustrations, also, are introductory, being too small to serve otherwise than as hors-d'œuvres, whetting the appetite for more intimate acquaintance.

"The Cathedrals of Southern Spain." By C. Gasquoine Hartley (Mrs. Walter M. Galfichan), author of "Things seen in Spain," "Spain Revisited," "Moorish Cities in Spain," "Santiago de Compostella," &c., &c. (London: T. Werner Laurie, Ltd. 6*s*. net.)

THIS is rather a book for the amateur than for the critical student of architecture, descriptive in the best guide-book manner, sufficiently informative on facts of history, quoting the writings of others rather than originally critical. We are inclined to doubt the accuracy of the lady's architectural knowledge. For example, the detail of the Puerta de los Infantas, Lerida, would predicate a date of about 1150 A.D. at latest, rather than "thirteenth century." As with the volume by Mr. Bumpus, the illustrations for the most part, though with a few pleasing exceptions, are too small for other than a general idea of grouping, but one cannot expect too much for six shillings, and the book is, after all, well worth the price.

"The Bridge of Dee: Its History, its Structural Features, and its Sculptures." By G. M. Fraser, librarian, Public Library, Aberdeen. With illustrations. (Aberdeen: William Smith & Sons. 3*s*. 6*d*. net.)

To a Southron who has never seen the granite city of Aberdeen this volume on the history of the Bridge of Dee is fascinating reading. Much more so, therefore, should it be to Aberdonians in particular and to Scotsmen in general. The story is so admirably told by Mr. Fraser that it may well serve the purpose for which in part it is intended by the author, to serve as a model for the teaching of local history in the schools. We cannot but agree that the first lessons in history to boys and girls should be that of their own environment; thus it becomes a pleasure rather than a task, and, more important still, lays the foundation of a vivid personal interest in the art and life of the past in their own locality that must inevitably broaden into an appreciation of that in a wider sphere. Apart from all local considerations, the Bridge of Dee is noteworthy as an excellent example of artistic engineering—or may we say architecture?—of the sixteenth century which has maintained its essential character and interest to the present day.

ILLUSTRATIONS.

COUTANCES.

IN this plate we have the pleasure of reproducing to the same size as the original an autograph drawing by Mr. Reginald Blomfield, A.R.A., the President of the Royal Institute of British Architects, which formed part of the exhibition of architects' "holiday work" at the recent conversazione of the Architectural Association.

SKETCHES IN ITALY.

THE examples that we are able to give of the "holiday work" of Mr. W. Curtis Green, President of the Architectural Association, are reproduced from rapid "five-minute sketches" in study of grouping.

LECTURE ROOMS, &c., TRINITY HALL, CAMBRIDGE.

THE building is constructed on some long concrete piles on the edge of the Cam and partly on the site of the old King's Ditch. The accommodation includes a large common room for the men, a row of bath-rooms, three lecture-rooms, and three sets of men's rooms.

REREDOS IN OAK, ST. AIDAN'S CHAPEL, BIRKENHEAD.

THIS has just been finished at the extremely low cost of £139, and, like the work at Trinity Hall, Cambridge, has been carried out from the designs of Mr. Hastwell Grayson, M.A., President of the Liverpool Architectural Society.

AN OPEN LOGGIA FOR SCULPTURE.

THE drawing we reproduce was one of the set that obtained the Tite Prize in 1907 for Mr. G. Salway Nicol, now the President of the Birmingham Architectural Association.

ST. CHAD'S CHURCH, BRADFORD.

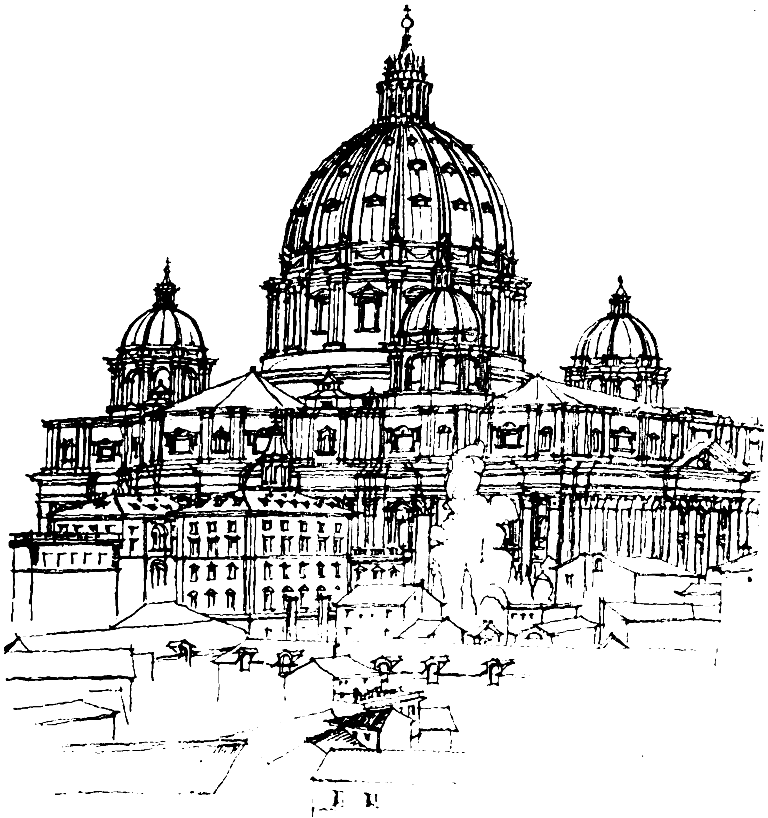
THIS church has recently been erected from the designs of Mr. G. Salway Nicol, A.R.I.B.A.

We also reproduce on the following pages some "holiday sketches" by Mr. Nicol.

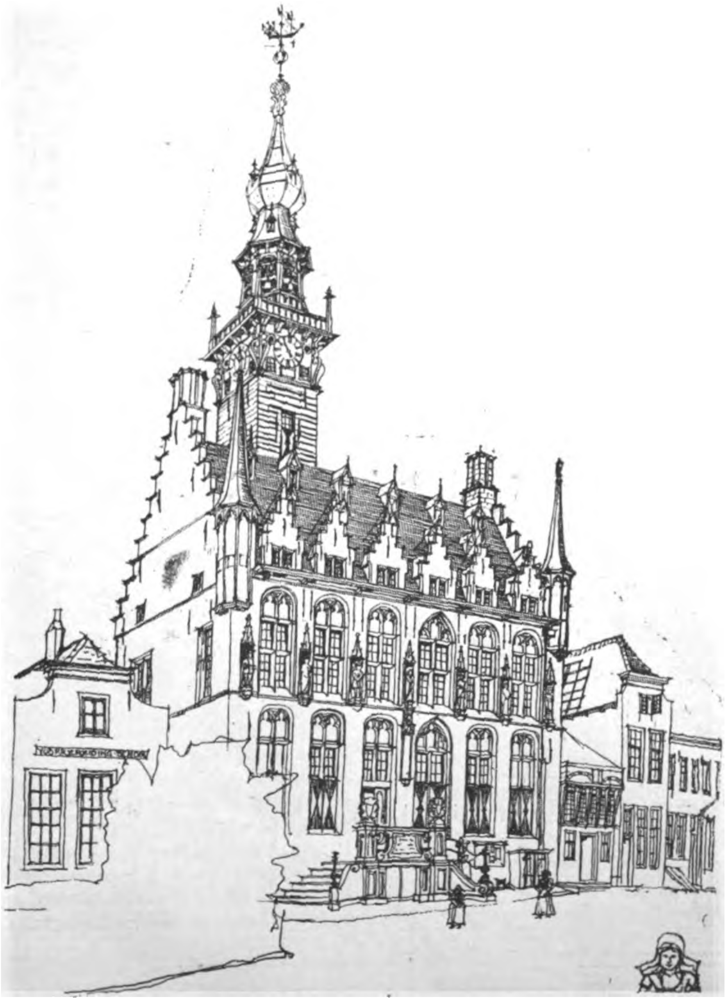
ST. CATHERINE'S CHURCH, HAMBURG.

ARCHBISHOP WHATELY and others have sufficiently shown that the "Great Fire of Moscow" was quite a small affair of burning some provision stores outside the walls, while the "Great Fire of Hamburg," of which Lowell sang, on which Hayter Lewis reported for the London fire insurance offices, and which Sir Gilbert Scott altogether and with reason blessed, was limited to a comparatively small portion of that ancient city. Anyone walking to-day through the place from east to west, from St. Georg to St. Pauli, will pass through whole streets or cross little canals still lined with picturesque timber-gabled warehouses and residences, or, as in the Stein Strasse, with fine stone-fronted buildings erected early in the eighteenth century by the French refugees. The fame of these two historic fires rests rather on the effects they produced than on the extent of their area, in which latter respect they are quite comparable to comparatively recent ones in London, such as those of St. Mary Axe and Wood Street, for in the case of Moscow it led to Napoleon's famous retreat, and in the case of Hamburg to the loss of over £7,000,000 sterling insured on the valuable merchandise which was stored upon its wharves. Another event which tended to increase our interest in the Hamburg fire was the employment of an English architect to rebuild the cathedral of St. Nicholas, which had fallen a prey to the flames; and Scott erected there one of his architecturally correct churches with a tall English spire, all in white brick and stone, looking very incongruous among the many other picturesque church towers of red brick and green copper, although it was, as described by Félix Narjoux, "an archæological work conscientiously elaborated." Of one of these towers, standing by the side of the Alster, and quite close to the cathedral, we give a drawing. In this view—a fairly extensive one—there is no building except the two bridges which did not exist before the great fire, and the range of half-timber warehouses to the left, fronting on to a street known as the Grimm and backing on to the Alster, faced directly on to the block of buildings encircling the cathedral, where, perhaps, the fire was most intense. At the end of the Grimm stands the great three-aisled church of St. Catherine, with square east end and a western tower, all erected in the thirteenth century of red brick in the prevailing style of the Hansa towns. The interior has been modernised, probably at the same time that the tower was refaced on its western side, and the great copper-covered spire, which shows in the centre of our sketch, erected. And this spire forms one of a lofty group of six, which can be seen, looking eastward from the Elbehöhe, dominating the city, of which only two—the cathedral and St. Petri—have been recently built, the remainder, with a large proportion of the picturesque buildings lining the numerous canals belonging to an era before the great fire.

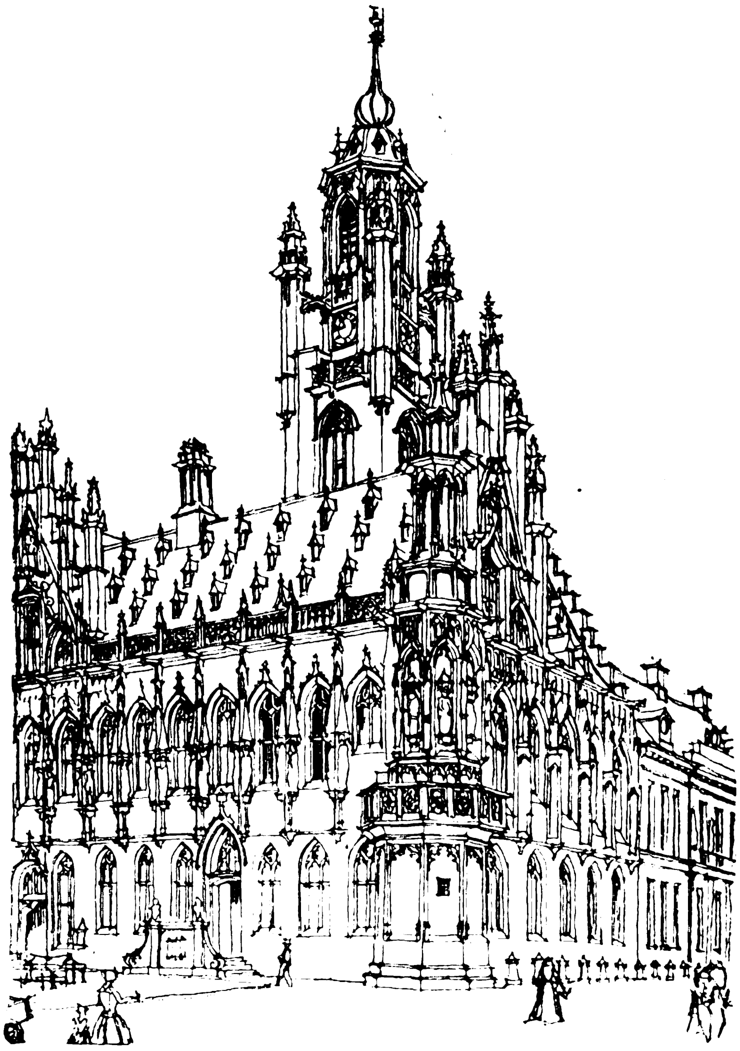
THE Directorship of the National Gallery of Ireland, which has been held since 1892 by Sir Walter Armstrong, will be vacant from the close of the financial year. The post carries a pension. Candidates are invited.



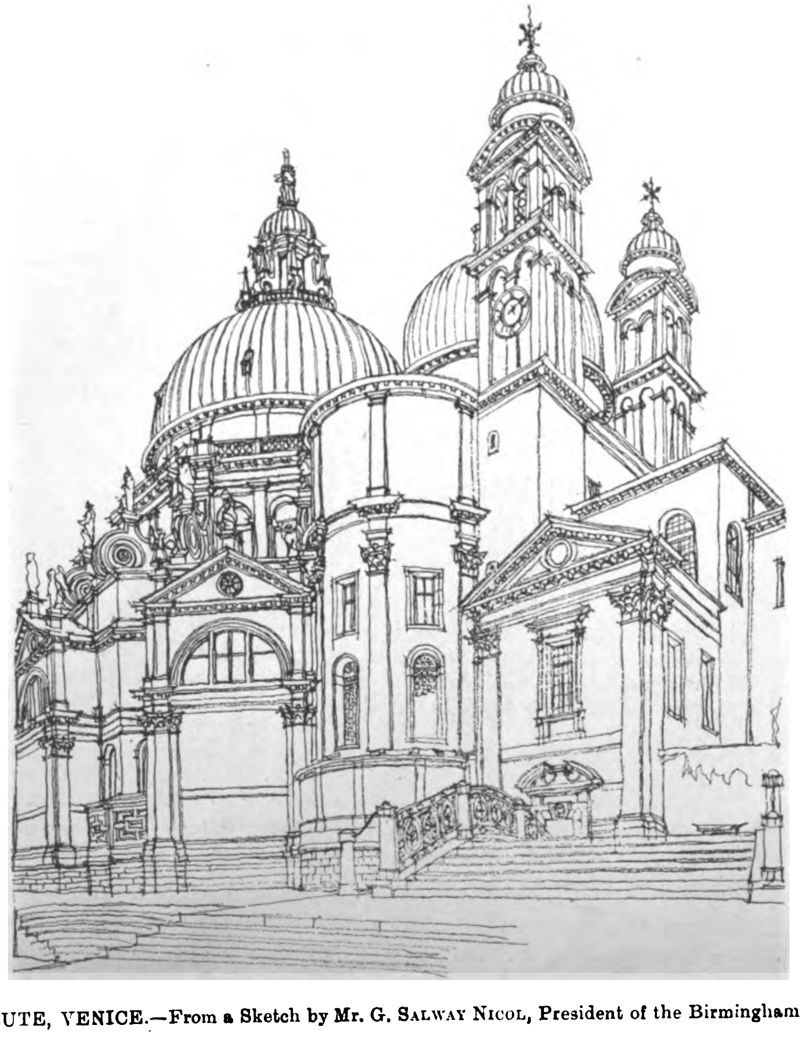
ST. PETER'S, ROME.—From a Sketch by Mr. G. SALWAY NICOL, President of the Birmingham Architectural Association.



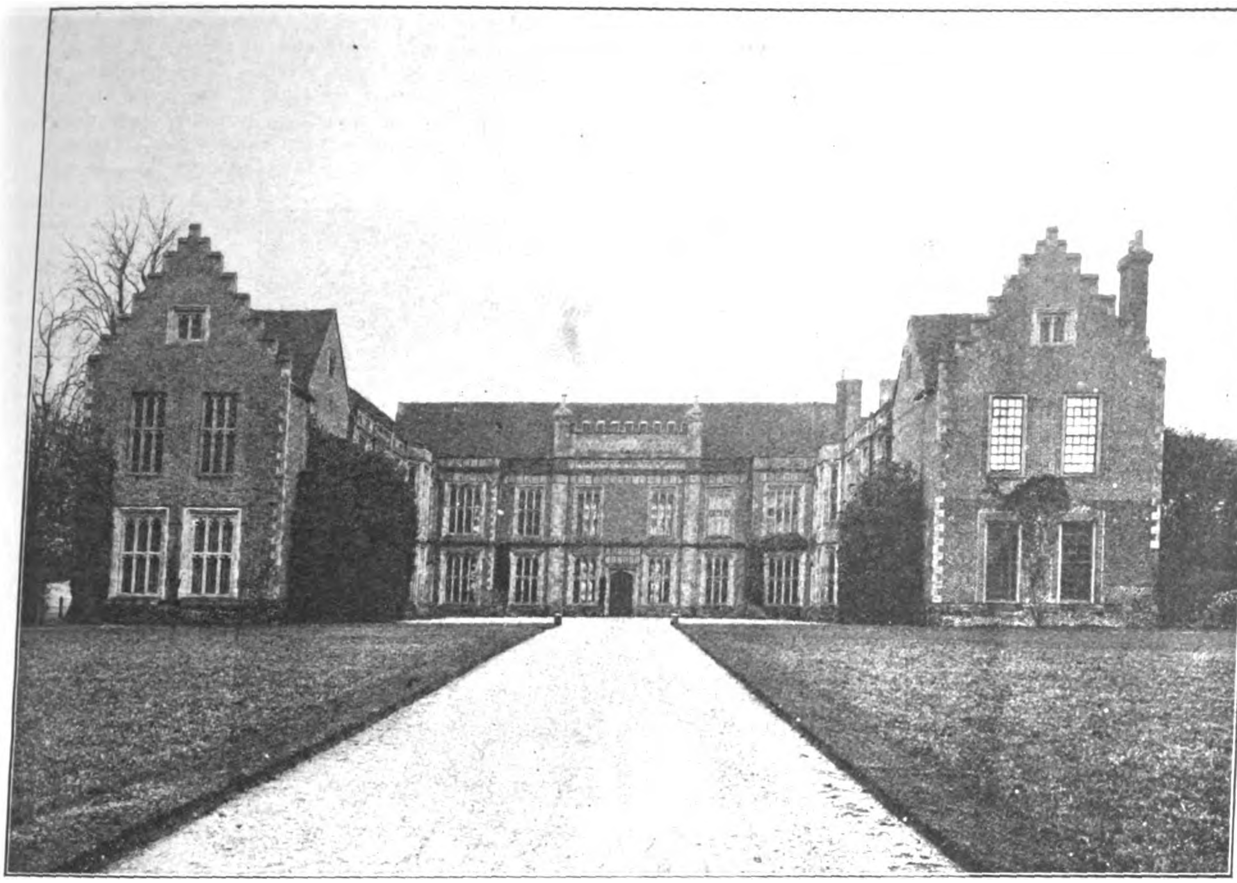
THE STADHUIS, VEERE.—From a Sketch by Mr. G. SALWAY NICOL, President of the Birmingham Architectural Association.



THE STADHUIS, MIDDELBURG.—From a Sketch by Mr. G. SALWAY NICOL, President of the Birmingham Architectural Association.



MARIA DELLA SALUTE, VENICE.—From a Sketch by Mr. G. SALWAY NICOL, President of the Birmingham Architectural Association.



SUTTON PLACE, BY GUILDFORD.

SUTTON PLACE AND ITS OWNERS.*

By Mr. Frederick Higgs.

The mansion of Sutton, or "Sud Towne," the southern hamlet of Woking, near Guildford, was formerly a part of the Manor of Woking held by the King. Edward the Confessor is stated to have had a hunting place very near the site of the house we have to-day visited. William the Conqueror granted it to William Malet, and in the Domesday Survey it is mentioned as being held by him subject to possession by one Durand, who appeared, however, to have little or no title. At a later date it was separated from the Manor of Woking.

During the period between William I. and Henry VII. it had been held by very many grantees, and in almost every case, owing to the disturbed politics of the day, it had reverted back to the Sovereign at the death—mostly by execution or in battle—of the holder.

Margaret Beaufort of pious memory, founder of the Divinity Professorship which bears her name, held it from Henry VII. until her death, when by her will it passed to her nephew, Henry VIII.

A certain family named Weston, said to have descended from worthy retainers who came over with the Conqueror or shortly afterwards, were at the time of Richard III. settled in Boston, Lincs. They were a family of soldiers and sailors, and one of them was at one time Lord Prior in England of the Knights of St. John of Jerusalem.

It is probable that they assisted Henry VII. in the enterprise which culminated at Bosworth Field and established him on the throne of England. They also probably assisted with ships in connection with the crusading enterprise, involving naval operations in the Levant. It is certain at a later date one of the Westons greatly distinguished himself at the siege of Rhodes by Soliman the Magnificent.

So in one way and another they had placed Henry VII. under an obligation to them, and we find that Edmund Weston, of Boston, was signalled out for honours and emoluments directly Henry ascended the throne, and these favours continued to be showered upon him during the many years of comparative peace which signalled Henry's reign. It is not therefore surprising that his eldest son, Richard Weston, was a friend of the young Prince who succeeded Henry VII., and who, at the age of eighteen, became Henry VIII. Before even he was crowned King he began to grant to his friend valuable offices. These began with the ordinary Knighthood, and included Governorship of Guernsey and Castle Cornet; Governorship of Wards in Chancery, and full authority to deal with their property; Governorship of Calais; Keepership of Hanworth Park and of the Manor of Cold Kennington; Stewardship of Marlow, Cookham and Bray; Lordship of the Manor of Upton Pole, Berkshire; Lieutenant of the Castle and Forest of Windsor; licence to freight a ship with merchandise to foreign parts; Knighthood of the Body and Stewardship of Cranbourne Chase and Caversham; Stewardship of Lordship of Flamstead; Judgeship of the Star Chamber at Westminster; King's Cupbearer and Chancellor of the Duchy of Lancaster, and Under-Treasurer of England, all of which carried with them appropriate emoluments. He was present and witnessed the signature of the treaty of peace between France and England in 1518. He was Ambassador to negotiate the arrangements, which never came to fruition, whereby the Dauphin of France, aged six months, was to marry Princess Mary, aged three months. In 1520 he accompanied Henry to the Field of the Cloth of Gold. These journeys, during which he must have seen a good deal of the buildings then going on apace in France, engendered in him a taste for their type of art.

The influence of Wolsey in the politics of England had grown to be paramount, but he could not brook the rivalry of Buckingham, and a conspiracy was hatched against the latter in 1521, in which it appears that Weston took part, or at least connived at, and, after being tried before a jury of twelve, of which Weston was one, Buckingham was condemned and beheaded. On the very day that this tragedy was completed in May 1521, Henry signed the grant of the Manor of Sutton to Sir Richard Weston. Harrison suggests that this was the price of his acquiescence in the judicial murder of the Duke. Be that as it may, Weston suffered severely later on, in his family, by reason of the imperious passions of his Royal master.

Weston appears very shortly afterwards to have started to build the house we have seen to-day, and though he must have been frequently away from the country, either at

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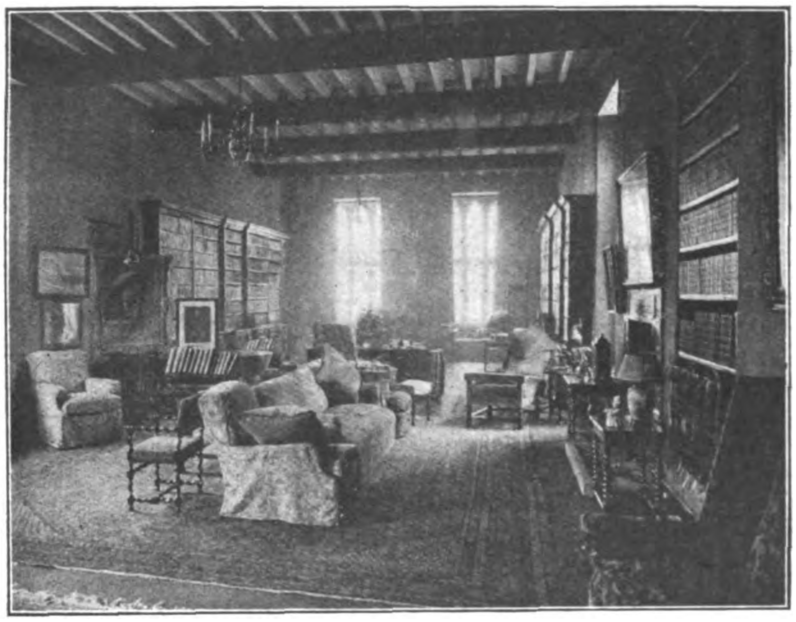
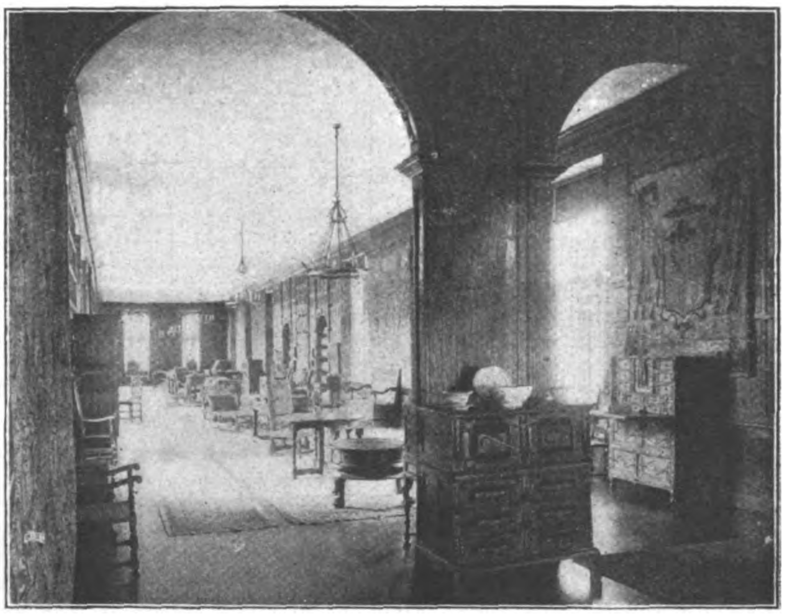
* Read on the occasion of a visit by the Upper Norwood Athenæum.

Calais or on ambassadorial duties, he undoubtedly impressed on his builders his ideas both of plan and of detail.

The manor house on the estate stood some little distance north-west of the spot where Sutton Place now stands, and Sir Richard thought fit, and wisely so, to shift the site of his new home. I understand that the descriptive title "Place," when applied to a manor house, signifies that it has been rebuilt on a fresh site or place; hence the new mansion was styled Sutton Place. Up to this period all the large domestic buildings in this country had more or less partaken of the character of places of defence as well as of residence. You have the fortified moated castle like Windsor, Corfe, Arundel, and others. Then you have the semi-fortified houses like Haddon Hall, Hever, Ightham Mote, &c.; but now that the barons had ceased to fight one another more comfort and solid prosperity was to be got out of peaceful pursuits. The population was increasing, the absolute power of the feudal lords was weakening, and the vox populi was coming into being; so Sir Richard planned out for himself a country house pure and simple, without moat or barred window, embrasure or barbican. He adopted the plan of the house then generally in vogue, viz. quadrangular, one-room deep, with an enclosed courtyard having on one side (in this case the south side) a great hall with its attendant buttery, or servery as we should call it, and having a gallery at the other end approached from the upper floor, the east wing containing the family apartment, two floors, and the west wing those of the servitors, with kitchen and offices on the lower storey and bedrooms overhead. The north side comprised chiefly the gate house and tower, with apartments on either side of it. Access was probably gained to the upper storey by staircases in turrets, of which it is said there were, in this case, seven. There were party walls cutting off the different sections of the house from each other, but apart from this it is probable there were few partitions more substantial than panelling or curtains.



SUTTON PLACE: LIBRARY.



SUTTON PLACE: THE LONG GALLERY.

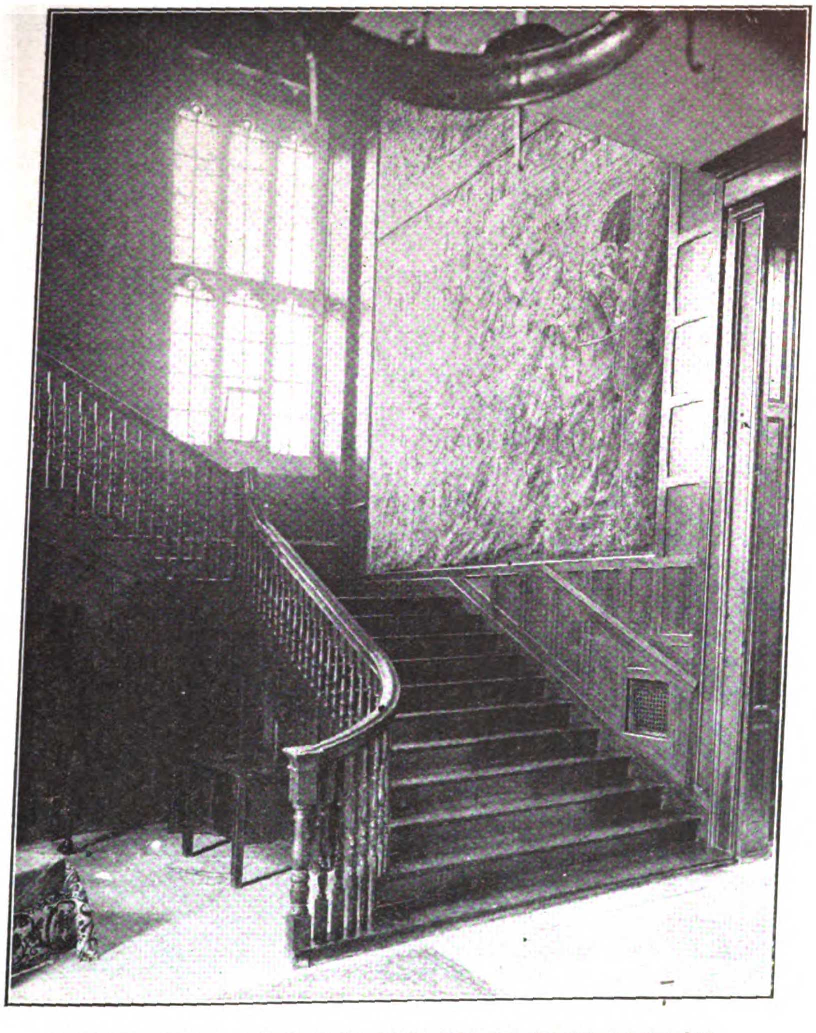
Such was the plan originally adopted, but, as will be noticed by the position of the doorways into the great hall, the plan was subordinated to the general elevation, particularly in the courtyard. Here great pains were expended upon the detail of the decorations and the symmetry and balance of the whole. In this feature foreign influence is noticeable; whereas in Gothic diversity is a great characteristic, Classic requires symmetry and balance; hence you will notice the regularity of the arrangement of string cornices and openings. The doorways to the great hall, although out of centre in the wall, are in the centre of the south side of the court, and correspond with the gateway entrance on the north side, and everything was worked from this centre axis.

The windows in the main follow the models of Perpendicular Gothic, with mullions and transomes; their lower openings show pointed heads, but the upper ones are elliptic, both having the regulation cuspings. The sections of the jambs, &c., are Gothic, but they have moulded on them, both inside and out, a most delicate enrichment quite

Italian in character. The moulded panels or plaques, which are such a feature in the elevation, are distinctly foreign, and the same applies to the ornamental faces of the stones composing the octagonal turrets. The use of terra cotta also as a building material, both decorative and constructive, was a novelty, and introduced from Italy. We have here, therefore, a most interesting example of some of the last work of the English Gothic builders with a blend of Renaissance treatment, with a result so happy and pleasing as to produce regret that a style so truly expressive of domestic comfort should have been submerged by the flood of pomposity and grandeur which came about in the succeeding century.

Henry by 1527 was becoming tired of his Queen Katherine, perhaps by reason of lack of a male heir, and Anne Boleyn, supported by R. Cromwell (Wolsey having fallen), the reform or anti-clerical party had come into the ascendant. Sir Richard Weston, who had assisted in the coronation of Katherine, now had to similarly assist in that of her immediate successor, and his young son Francis, who had been so long King's page, was one of the few attendants on the new Queen on the occasion.

With the passing years the capriciousness of Henry appeared to increase, and the charms of fair Anne Boleyn ceased to sway him. It was necessary, therefore, that some plea with a modicum of probability should be concocted to enable Henry to get rid of her. Charges were brought in of infidelity and the name of Sir Francis Weston joined therewith, and resulted in the execution of both.



SUTTON PLACE: STAIRCASE LEADING TO LONG GALLERY.

Now, Anne appears to have been a somewhat light and frivolous character, but it is generally accepted that there was not an atom of truth in the charges laid against her, particularly in connection with young Weston. He was probably a dilettante gilded youth, singularly lacking in personality; a hanger-on to Court ladies, and probably with a flattering tongue. The most creditable points recorded in his favour appear to have been his skill at games, at which he frequently had the courage to beat his Sovereign, and the dignified demeanour with which he faced death at the block. He had married one of his father's Chancery wards, and left her a widow with a young son and heir one year old. Poor old Sir Richard continued to reside in the house till his death in 1542, guardian of his daughter-in-law (who married twice afterwards) and of his orphaned grandson. He was required by Henry to meet and welcome his Queen, Anne of Cleves, and thus assist at the third coronation ceremony of a Queen.

It is very evident that Sir Richard had a talent for keeping his eye on the main chance, and he must have constantly made his conscience subservient to his sense of obedience to his Sovereign's commands, and been tactful enough to hide his own feelings in a most remarkable manner. The grandson Henry in due time came into possession, and kept up the reputation of the family for acquisitiveness, for he married a rich heiress in Lady Dorothy Arundel, a connection of the Norfolk family and a near relative of Royalty. Her family was distinguished by having had as many as ten on the mother's side and twelve on the father's side who within fifty years had been beheaded for alleged treason.

Sir Henry stood high in Royal trust and favour, and on several occasions entertained Elizabeth at Sutton. To the Sutton estate in 1530 had been added by grant from Henry VIII. large lands at Clandon and Merrow, and I imagine that Weston was by far the most influential land magnate in these parts. The times, however, were disturbed, and Protestantism as developed in Elizabeth's time was in the ascendant. Religion was largely a question of patriotism and politics, and matters did not naturally go well with noblemen who continued to support, tacitly if not openly, the old form of faith and worship. Sir Henry Weston had distinguished himself greatly in Mary's reign by his heroic efforts to retain the town of Calais for his country, in which, however, he failed gloriously, and doubtless for a time this redounded to his credit; but we find that his martial enthusiasm waned at a later period. In 1584, when it was a matter of life and death for the Fatherland, a levy of 1,500 men was ordered to be raised in Surrey for the wars, but it is recorded that "Sir Henry Weston having great occasion to be in the North this summer, desires to be discharged as Captain." His name nowhere appears in any of the records of the glorious doings of the time when Little England, unaided, humbled the pride of Mighty Spain. Evidently he was not free from suspicion, and in 1591 an order was issued for a search of Sutton Place to find one Morgan, a priest, believed to be concealed there under a false name. Sir Henry, however, kept his head and his possessions, dying in 1592, leaving a will couched in the most orthodox fashion, and was buried with his grandfather in the family chapel of Holy Trinity, Guildford.

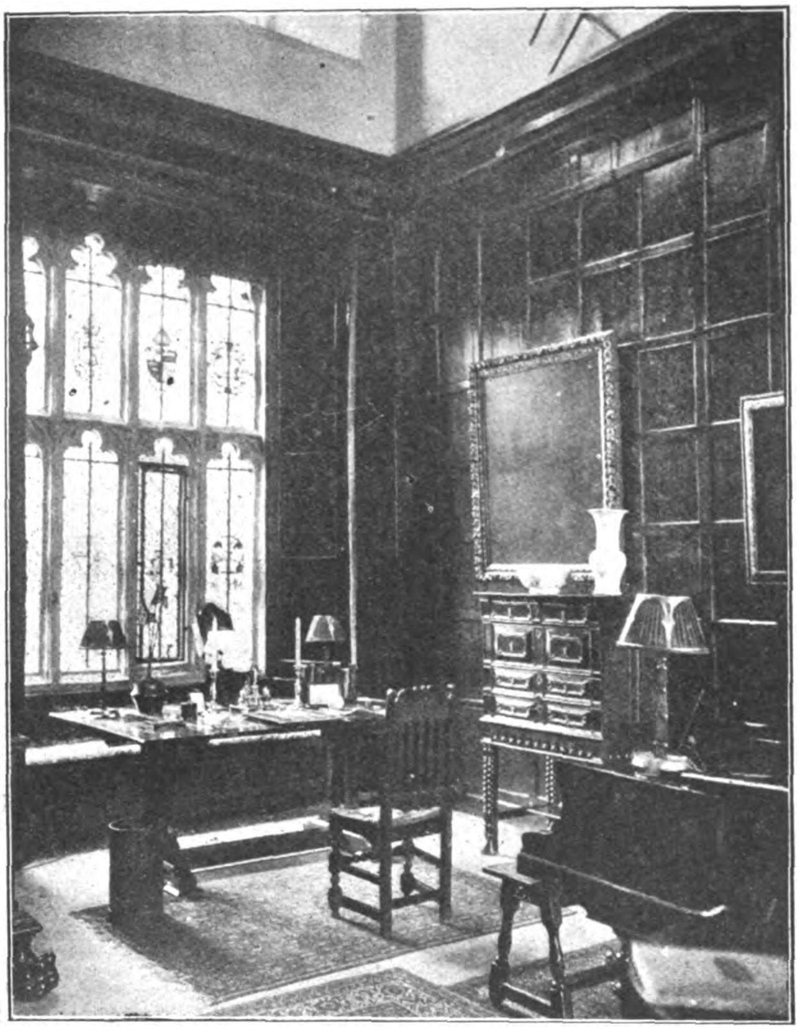
Sir Richard, who succeeded Henry, was a man of peaceful persuasion and talents. He wrote and published a very valuable work on agriculture and introduced the cultivation of clovers and grasses, and thus performed a most valuable service to his country. He had also ideas in respect to inland navigation. He planned and carried into effect the canalisation of the river Wey, and though his anticipations of the financial result of the scheme were never realised, his work remains to this day as a priceless benefit to the district in which he lived.

In order to finance this scheme it is probable that he was obliged to sell his Clandon and Merrow property, which he did in 1641 to Sir R. Onslow, and thenceforward lived in quiet comfort (except for one mishap wherein his property was for some time sequestrated for having joined the Royalist Party in the Civil Wars, culminating in the Commonwealth) at Sutton Place until his death in 1652. He also was gathered to his fathers in Holy Trinity Church, Guildford.

Sir Richard's property passed to his eldest surviving son, John; he married Mary Copley, heiress of Gatton, near Reigate. This property they sold in 1654 and settled down at Sutton Place as their only home.

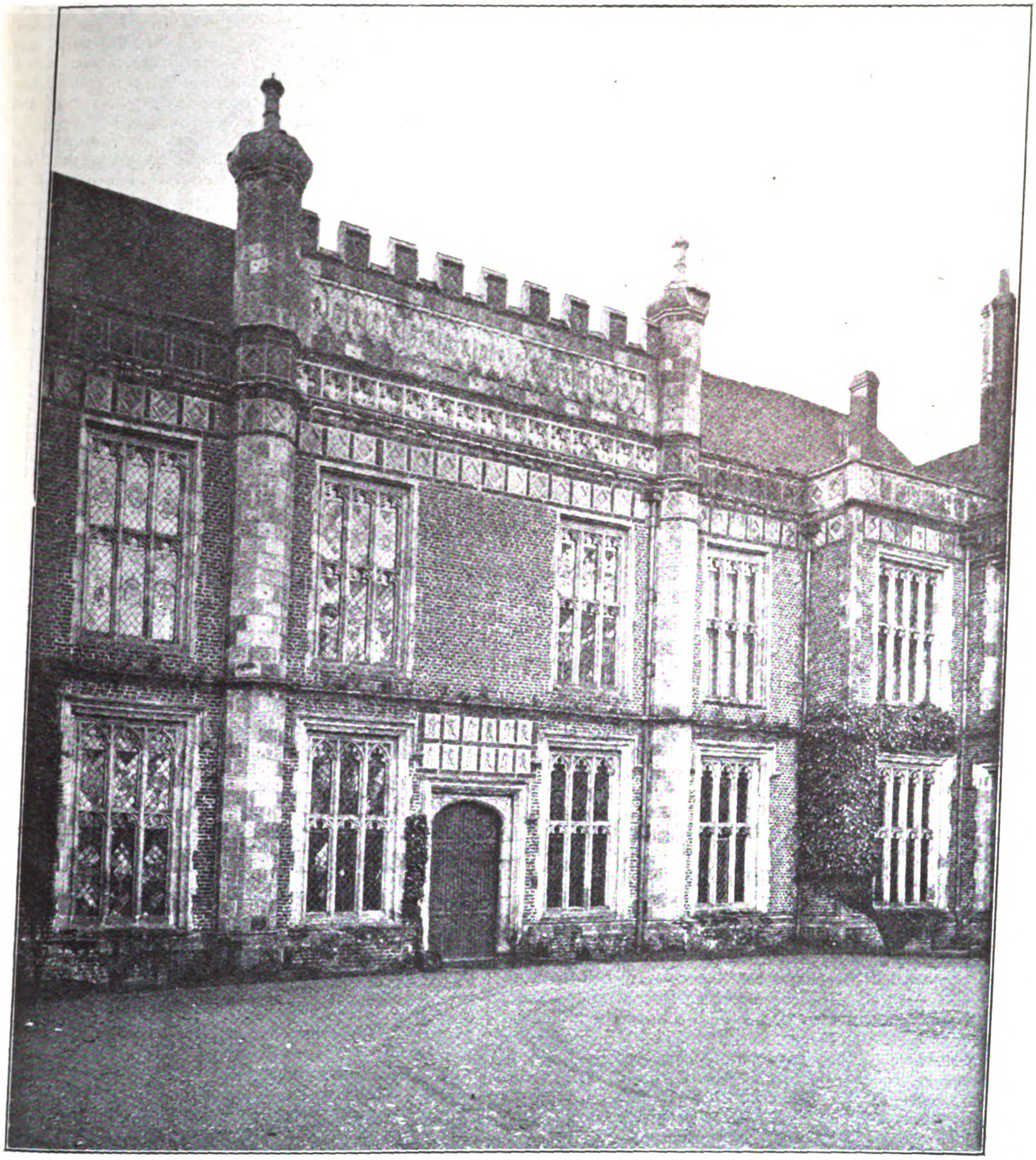
During or after one of Elizabeth's visits to Sutton a disastrous fire occurred which must have done much damage, and probably in reparation of this, and also, by way of improvement, considerable alterations were made to the interior of the house. These, I think, are easily identified from their purely Jacobean and Elizabethan character. There is little doubt that Sir Richard and his son John effected these alterations. They must have shifted the living-rooms westwards, retaining the great hall in its old position and rearranging and adding to the stained glass in the windows and tapestries on the walls, but converting the kitchen in the south-western corner into a panelled hall or parlour, panelling out the walls, introducing chimney-pieces and overmantels of the period, and probably erecting the staircases we now see.

There is no doubt the arched openings leading in and out of the great hall and staircase were made at this time, also that the inner courtyard and the kitchen offices, as we now see them, were then constructed. It is all an excellent example of the type of domestic work of the mid-seventeenth century. With the money from the sale of the Clandon and Reigate properties there is no doubt that they succeeded, notwithstanding the money that had been sunk in the river below, in rendering Sutton Place quite an up-to-date country house.



SUTTON PLACE: CORNER OF THE GREAT HALL.

John and Mary lived a long married life of fifty-three years, John dying in 1690 and being buried with his fathers at Guildford. Through wild and troublous times they lived quietly their lives and retained the enjoyment of their property, and presumably the respect of those with whom they lived. The son of this worthy pair was named Richard; he held for eleven years only, and died in 1701. His son John held for thirty years, dying in 1730. He was of sterner stuff than his forbears, was a Jacobite, and it is recorded that he was fined £939 for refusing to swear fealty to George I. He formed the long gallery in the eastern wing. He was succeeded by his only child, Mary Melior, who never married. She held the property until her death, aged seventy-nine, in 1782. She was the last of the Westons in direct line, and left the property to her paternal cousin, John Webbe, of Hereford. There is a notable monument to her memory in Holy Trinity, Guildford, erected by her legatee, which sets forth in glowing terms her intelligence and virtues. This gentleman, who, by Miss Weston's testamentary directions, had assumed the name of Weston, held for forty-one years, and



SUTTON PLACE: THE ENTRANCE.

made many changes in the house which it is probable that Miss Weston had done little to maintain. The north side, forming the grand entrance and tower, was in a ruinous condition, and he had it demolished and otherwise spent a considerable sum upon the house, but, happily for us, not so much as some of his vandal advisers desired. They proposed to convert it into a mansion of quasi-Italian character, with columns and pediments, and to turn the great hall into a two-storeyed block of chambers.

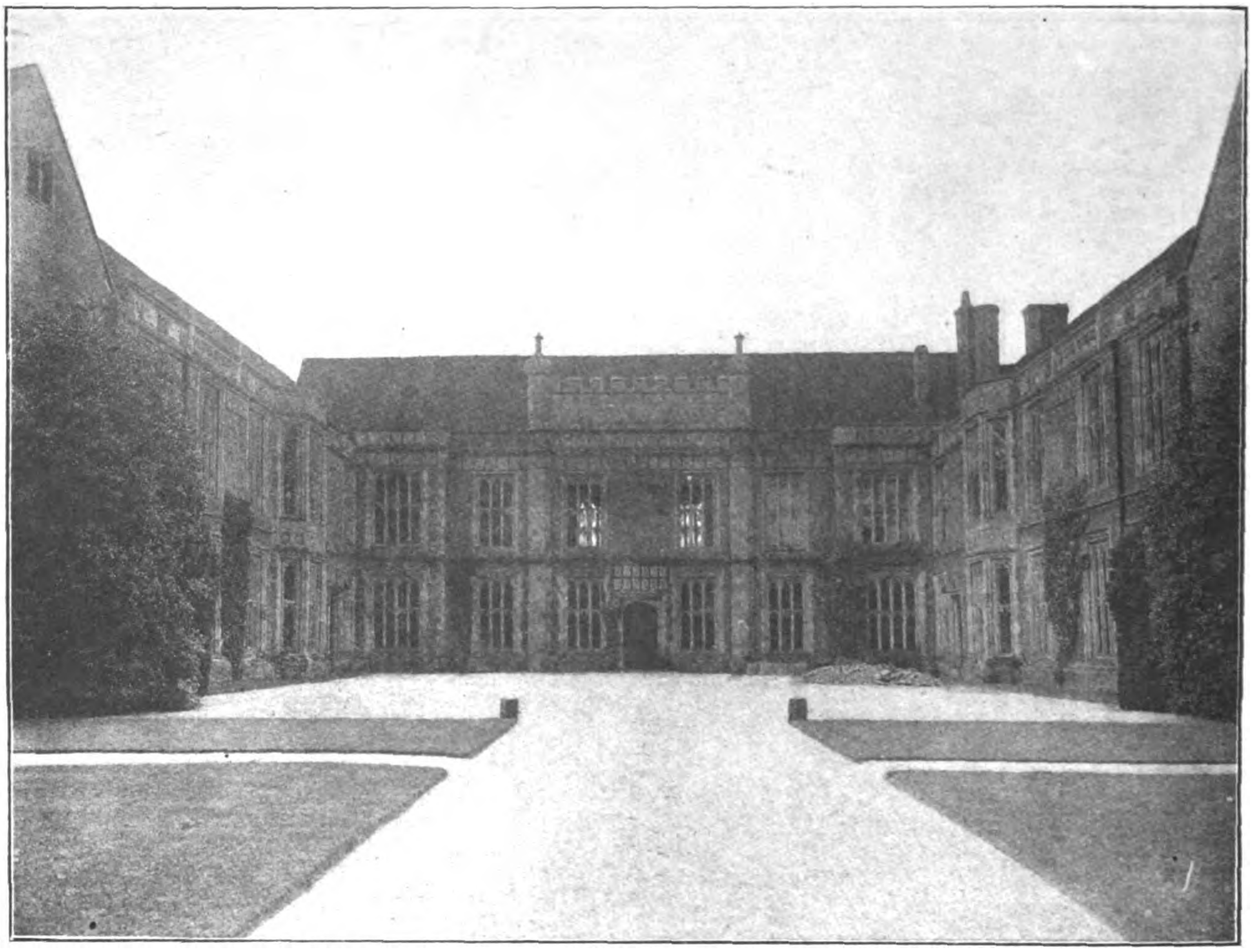
From John Webbe Weston in 1782 we have, to the present day, six owners, and although the evident desire of Miss Weston was by hook or by crook to retain the name with the property, it has, since 1857, been possessed by relatives bearing other names, the late owner, Mr. Salvin, having succeeded Mr. Mornington Webbe Weston, and the present owner being Mr. Witham. He has let the property to Lord Northcliffe, to whose kindness we are indebted for permission to make the present inspection, and under whose intelligent care the place will lose nothing of its unique, historical, and architectural character.

The story I have told is a very curious one of a family deeply attached to their religious belief and observance, and with an overmastering sense of their duty to their Sovereign and belief in the Divine Right of Kings, but one could have wished that they had exhibited more British grit, independence, and fidelity to conscience and conviction, which, after all, are the qualities that, in the long run, win the greatest respect and admiration.

I owe most of the particulars here set forth to the excellent work by Mr. Frederic Harrison, entitled "The Annals of a Country Manor House."

SIXTH CONGRESS OF THE INTERNATIONAL ASSOCIATION FOR TESTING MATERIALS.

FOR the first time the British Government took official notice of the above Association by apointing delegates to their Congress in 1912 at New York, and some of the recommendations discussed had, in the opinion of the delegates appointed by the Board of Trade, a serious bearing on trade interests in this country. The delegates have accordingly prepared a short report, of which we give extracts.



SUTTON PLACE: THE ENTRANCE COURT.

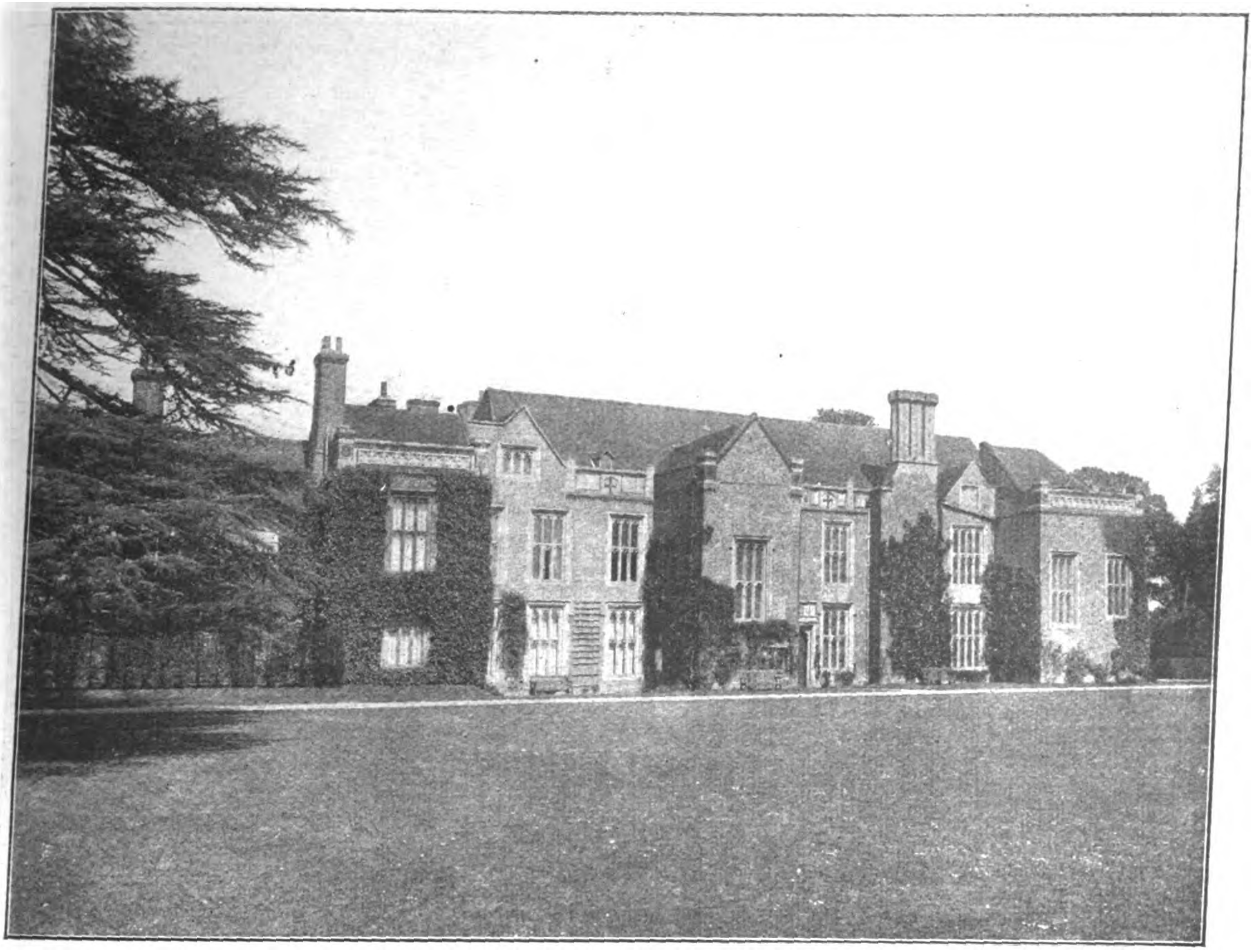
The International Association for Testing Materials is a purely voluntary association, founded in 1884 by Professor Bauschinger, of Munich, who created the first State laboratory for testing materials, one which has been the model for many later institutions, and where an extraordinary number of important researches were made by him. Under his Presidency conferences were held between 1884 and 1893 at Munich, Dresden, Berlin, and Vienna for the study of methods of testing. Since then periodical congresses have met in Zurich in 1895; at Stockholm in 1897; at Buda Pesth in 1901; at Brussels in 1906; at Copenhagen in 1909; and at New York in 1912. The central office of the Association is at Vienna, and its affairs are managed by a Council, to which each country in which there are twenty members has the right to nominate one member. The President is elected by the Congress, and is usually a distinguished engineer or scientist in the country where the next Congress is to be held. The President at New York was Professor Henry M. Howe, of Columbia University. The work in connection with the British Section has been carried on by Mr. G. C. Lloyd (the British member of Council) from the offices of the Iron and Steel Institute.

The Association is supported by the subscriptions of its members, and by annual subventions from several Continental Governments or Government departments, and from railway and industrial corporations. In 1911 the subscriptions amounted to about 25,000 francs and the subventions to 14,000 francs. The income for the triennial period is about 100,000 francs, of which 30,000 went to the work of the central office, 60,000 to the publication of Congress papers, and 10,000 towards the publication of proceedings in the interval between two Congresses. In future the subscription of members is to be increased, so that the income will be larger. In addition, the Local Organising Committee of each Congress obtains funds for assisting the work of the Congress. There are about 3,000 members, of whom only about 120 are British. The contribution to the funds by this country from all sources—membership, donations, &c.—is less than that of either France, Germany, Austria, Hungary, Russia, the United States, Denmark, or Switzerland.

The objects of the Association were originally purely scientific, the discussion of methods of testing and the determination of the qualities of materials of most service for industrial use, but these questions touch closely on trade and commercial considerations which, in the opinion of the delegates, call for the close attention of British representatives. The work of the Association is subdivided into sections dealing (*a*) with metals; (*b*) with natural and artificial building stones, cements, mortars, and road materials; (*c*) with other materials such as timber, rubber, paper, &c. Proceedings are published in German, French, and English, and these constitute a very valuable storehouse of information. The papers presented at the New York Congress, as printed, form a volume of about 800 pages. Much of the research work put before the Congress is the work of individual members. But a number of committees are appointed to study special subjects, and these committees formulate the results of their investigations in recommendations which are in many cases subsequently adopted by the Congress and carry the authority of the Association.

The decisions or recommendations of the Congresses have no binding force on any group of its members. But the Association, in twenty-eight years of serious work, has attained a position of such authority and influence that its recommendations carry great weight and cannot be disregarded by those interested in industries concerned.

At the New York Congress, in addition to the three representatives of the Board of Trade (Messrs. W. C. Unwin, A. Denny, and Betram Blount), the British Engineering Standards Committee was represented by Mr. Leslie S. Robertson; the National Physical Laboratory by Dr. Rosenhain; the Institution of Civil Engineers by Dr. Unwin and Mr. Alfred Noble; the Iron and Steel Institute by Mr. G. C. Lloyd (member of Council of the Association); the Institute of Mining and Metallurgy by Mr. F. W. Harbord; and the Steel Ingot Makers' Association by Mr. Saniter, of Sheffield. There is no doubt that a much more prominent part in the proceedings was taken by the British representatives at this than at any previous Congress. It is believed that on all points which appeared important to the British representatives the decisions arrived at were satisfactory to them.



SUTTON PLACE: GARDEN FRONT.

About 400 members from twenty-four countries attended the Congress. The opening meeting was held in the auditorium of the Engineering Societies' Building.

International Specifications.

There is general consent that, provided it is possible to agree on the adoption of international specifications for iron, steel, and cement, certain advantages would result. It would be an extension to a much wider field of the principle which has proved beneficial in the publication of national specifications in England, the United States, and Germany. In 1896 a German Association for testing materials was formed, and undertook the task of formulating national specifications, and in 1901 the British Engineering Standards Committee, and in 1902 the American Society for Testing Materials addressed themselves to the same task.

Up to about six years ago no progress had been made by the committee of the International Association appointed to draft international specifications, except the collection of information. In 1906 Dr. von Rieppel (of Nuremberg), its very able chairman, proposed to facilitate the work of the committee by limiting its scope. It was then resolved by the Association at Brussels that the work of the committee should be restricted to an attempt to find common specifications by compromises of the clauses of the British, German, and American specifications. A special sub-committee was also formed to deal with cast iron. After much correspondence, extending over several years, the members of the committees found it to be impracticable to arrive by consent at any result.

In May 1912 a meeting of the iron and steel section of the committee was held in London. Previous to this a larger number of engineers and manufacturers were called into consultation, representatives of Germany, Belgium, and Great Britain being present, but the American representatives were unfortunately absent. The British and German representatives were unanimously of opinion that, to have any chance of being accepted, uniform international specifications must represent an advance on the existing specifications of the separate countries, and that in the present state of the manufacture of iron and steel it would be premature to draw up such specifications. In the event the following resolutions were drawn up and subsequently adopted by the International Committee for submission to the Congress:—

"(1) That the time is not ripe for the sixth Congress of the International Association to make any recommendations for the adoption of international specifications."

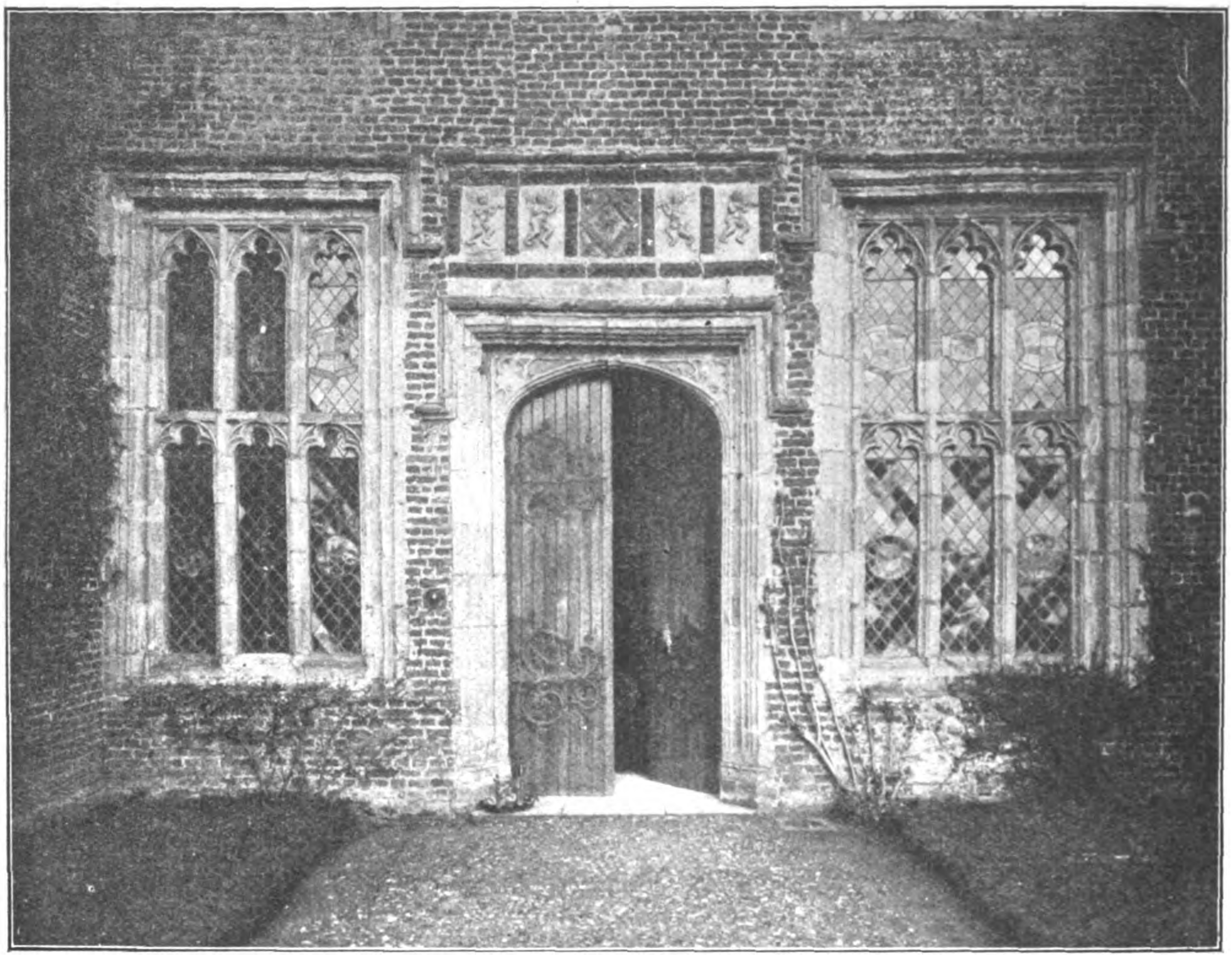
"(2) That the meeting fully recognises the desirability of such international specifications when an agreement can be reached, and they desire the committee to continue its work, but they are unanimously of opinion that any action at the forthcoming Congress would be undesirable."

The sub-committee dealing with cast iron found itself equally precluded by insuperable difficulties from drafting any international specification.

It will be seen, therefore, that the whole work of the committee appointed in 1897 to draft uniform international specifications has been up to the present time confessedly fruitless.

The British delegates were aware, before leaving England, that the resolutions passed at the London meeting in May were regarded with disfavour by the American members of the committee, and that they were even disposed to raise a technical objection to their presentation to the Congress, on the ground that they had been passed in the unavoidable absence of the American representatives, although the meeting in London had been summoned at their special request.

A proposal put forward by some members of the American Association was that the British Standard specification for shipbuilding material, with the addition of a chemical analysis, should be adopted as an international specification, and that for bridge and structural steel three of the American specifications should be recommended as international specifications. The British specification for shipbuilding material is already accepted by the great shipping registration societies, but the introduction of a chemical analysis, after full discussion by the British Standards Committee, was considered undesirable. The other specifications are different in many respects from the



SUTTON PLACE: THE GARDEN DOOR.

British Standard specifications, and their adoption would be unacceptable to the manufacturers in this country.

As the result of discussion at the meetings and in private the committee dealing with specifications was reconstituted with new instructions—namely, to collect and disseminate information in regard to the modifications in the specifications of the different countries; to report to the Council from time to time any changes adopted in different countries, and to await further instructions before proceeding to draft international specifications.

It appeared to the British delegates that the Association is not a body sufficiently representative of engineers and manufacturers to be entrusted with the drafting of international specifications, for although many manufacturers are members, they do not take an active part in the Congresses. There is the further difficulty that it would be an extremely cumbrous body through which to make such modifications in specifications as would be desirable from time to time. Considering steel only, the ores and the processes of production differ in different countries. Specifications could easily be so drawn as to favour one country at the expense of others. It is not at present clear that any country has arrived at a specification securing absolutely the best quality consistent with considerations of cost, even for its own production. The tendency of any attempt at compromise of the requirements of different countries would be to arrive at a specification of quality less satisfactory than that of any one country, whereas, if possible, an international specification should, in the interest of consumers, be of the highest standard.

The question of international specifications has been referred to at length as one of much importance, one on which recommendations adopted by the Association, though binding on no country, might have serious influence on industry. If international specifications are possible at all, they can only be drafted safely after much longer discussion, by agreements reached step by step, and with the sanction of bodies larger and more representative than committees of the International Association.

Portland Cement.

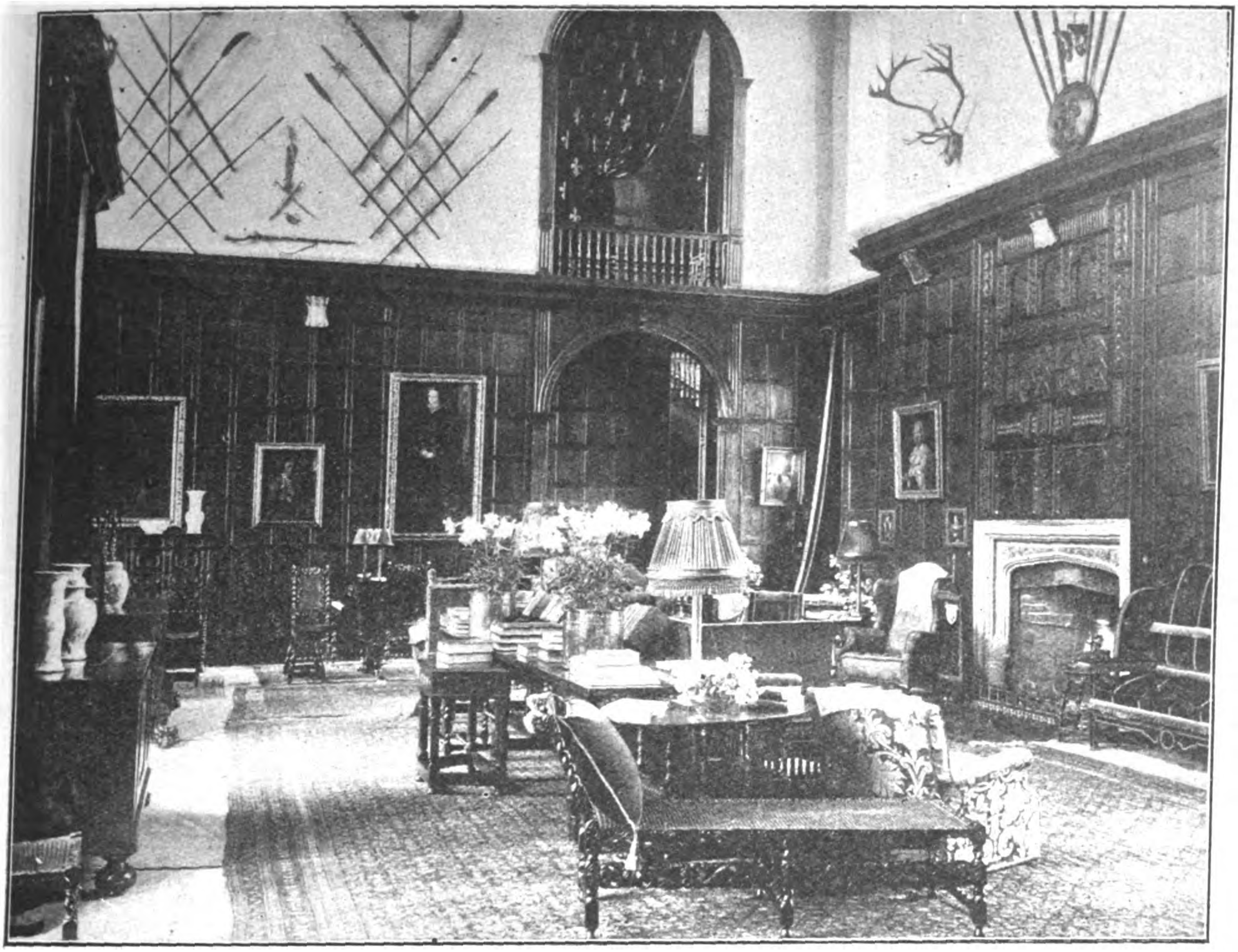
Section B is concerned with non-metallic structural materials. Of such substances, that which needs special care in the prescription of methods of testing is cement, and on this account the principal work of the section relates to this subject.

Methods of testing cement are well established and understood in all countries, but their unification is not complete, and the International Association for Testing Materials has been endeavouring to achieve this unification. There may be, and are, differences of view among the representatives of the various countries, and these are best composed by personal discussion.

That method was used in the present instance. There was a sharp difference of opinion between the British and other delegates, and it was therefore particularly necessary that an exposition of the British case should be made in such a way as to carry conviction, and avoid its being lost by the weight of mere numbers.

The chief matter of contention arose in this way: At the Congress in Copenhagen in 1909 the report of Committee No. 32 appointed to deal with the question of accelerated tests for the constancy of volume of cement was presented. This report was the outcome of work dating from 1903, in which all countries concerned had been asked to participate. As the result of numerous experiments it was decided to recommend the adoption of the Le Chatelier test, which had already proved its value by many years of use in France, and, more recently, in England. It has been adopted in the British Standard specification. The members of the committee who attended at Copenhagen were unanimous in their recommendation. When their recommendation was submitted to Section B, opposition was offered by Germany and America. After discussion Section B passed a resolution accepting the recommendation of Committee No. 32 by a substantial majority, and this was confirmed by the Congress in full session in Copenhagen. The terms of the resolution thus finally passed are as follows:—

"The Congress decides to recommend the method of



SUTTON PLACE: THE GREAT HALL.

Le Chatelier as the standard accelerated test for the constancy of volume of cement."

Since that date continued and determined attacks have been made on this method of testing by the German Association of Portland Cement Makers, which culminated in the presentation at New York of two resolutions demanding the rescission of the Copenhagen resolution. Experimental evidence obtained since the date of the meeting was adduced to show that the test was liable to give discordant results, and might condemn cement which had given satisfactory results in practice. At the same time it was demonstrated that the great majority of German cements passed the test with ease.

Reverting to the contentions of the German representatives who brought forward resolutions for the rescission of the Copenhagen decision, it was pointed out that they fall under two heads—(1) that the test gives discordant results, and (2) that it may condemn cement which gives good results in practice. Without going into technical details, these objections may be very simply met. Discordant results are chiefly due to experimental errors made by careless or unskilled operators, but also arise from the fact that cement, if stored, even in closed vessels, changes in quality, and thus may give different results when tested at different places and at different times. As to the condemnation of cement which may give satisfactory results in practice, it is only necessary to say that no cement which passes the Le Chatelier test has been known to give other than good results in practice, whereas cement which would fail to pass the Le Chatelier test has often given disastrous results in practice; evidently a buyer has a right to employ so valuable a safeguard.

The constancy of volume of cement, or, in other words, that chemical stability which prevents the occurrence of harmful internal stresses, is of such importance for all structures that no test which does not ensure that the cement passing it shall be unexceptionable in this respect, can be regarded as effective, or accepted internationally.

This obvious conclusion had its influence at the Congress. The upshot of the private and public discussions which took place was that the German and American representatives agreed to their motion being withdrawn, and the Le Chatelier test stands accepted by the International Association for Testing Materials.

There being on all sides a spirit of conciliation and a desire for mutual understanding, a mode was found whereby those members of the Congress who were in doubt as to the value of the Le Chatelier test could resolve their doubt or devise another and a better test. It was decided to continue the work of Committee No. 32 which, be it said, relates to the study of accelerated methods for the determination of constancy of volume of cement, and is in no way confined to the consideration of any particular test. The resolution embodying this view runs thus:—

"That the task of further examining all methods of accelerated tests for the constancy of volume of Portland cement be referred to a committee, and that it shall be an instruction to this committee to invite experiments by various testing laboratories, and also to have some experiments made by an official testing authority in each country concerned"

and was passed unanimously by Section B and by the Congress in full session.

The second matter of commercial importance discussed in Section B is the question of permissible limits of sulphuric anhydride in Portland cement. Some countries—*e.g.* France and the Argentine—require for harbour work not more than 1.2 or 1.5 per cent. of this constituent. English and French makers are able to comply with this requirement easily, but many German and some American manufacturers are not. A resolution by the Association of German Portland Cement Manufacturers was presented thus:—

"The Congress recommends that a uniform permissible maximum limit of SO_3—namely, 2.5 per cent.—be generally adopted in specifications for Portland cement, whatever may be the purpose for which the cement is intended."

This means that in neutral markets any cement having not more than 2.5 per cent. of sulphuric anhydride would come in with the cachet of the International Association for Testing Materials.

SUTTON PLACE: THE SMALL HALL

This was strongly opposed, and ultimately the following resolution was substituted:—

"That the Council be requested to appoint a committee to report at the next Congress regarding the effect of SO_3 in Portland cement."

This was accepted unanimously, and it will be seen that no limit has been set by the Association for the percentage of sulphuric anhydride in cement.

Nomenclature.

Some committees reported on the nomenclature of the constituents and products of manufacture of iron and steel. One report dealt with the scientific definition and nomenclature of the microscopic constituents of iron and steel, martensite, troostite, austenite, &c. This report, which is valuable, was accepted by the Congress. Another report dealt with the trade names applied to manufactured iron and steel, and as to this there were serious differences of opinion, some of the definitions proposed being opposed to long-established trade usages. The matter is not merely academic. Definitions of trade terms may be of serious importance in cases which come before the Courts of Law. Confusion has arisen from there being two series of products—one of the plastic and one of fluid origin—and two kinds of product in each series—one capable and the other incapable of hardening—which are not properly distinguished by trade names in ordinary use. The attempt to escape from this confusion involved anomalies which appeared disadvantageous to special trades. The German delegates pointed out that though an attempt had been made to unify English and American nomenclature, no regard had been paid to current German nomenclature, which has been established after careful consideration on a totally different basis. In the event the report was not adopted but was referred back to the committee. This does not imply that the work of the committee or the discussion at the Congress has been useless. If in future the differences in the use of terms in America, Germany, France, and Great Britain cannot be obviated, still much can be done in eliminating some misleading usages, in better defining iron and steel products, and in promoting mutual understanding.

What impressed the delegates strongly was that the Association had reached a very influential position; that its work at various points oversteps science and touches on trade; and that it has been too much ignored or neglected by engineers and manufacturers in this country. Especially the United States and the Teutonic nations have taken hitherto a much larger share in its proceedings and supported it more fully than Great Britain.

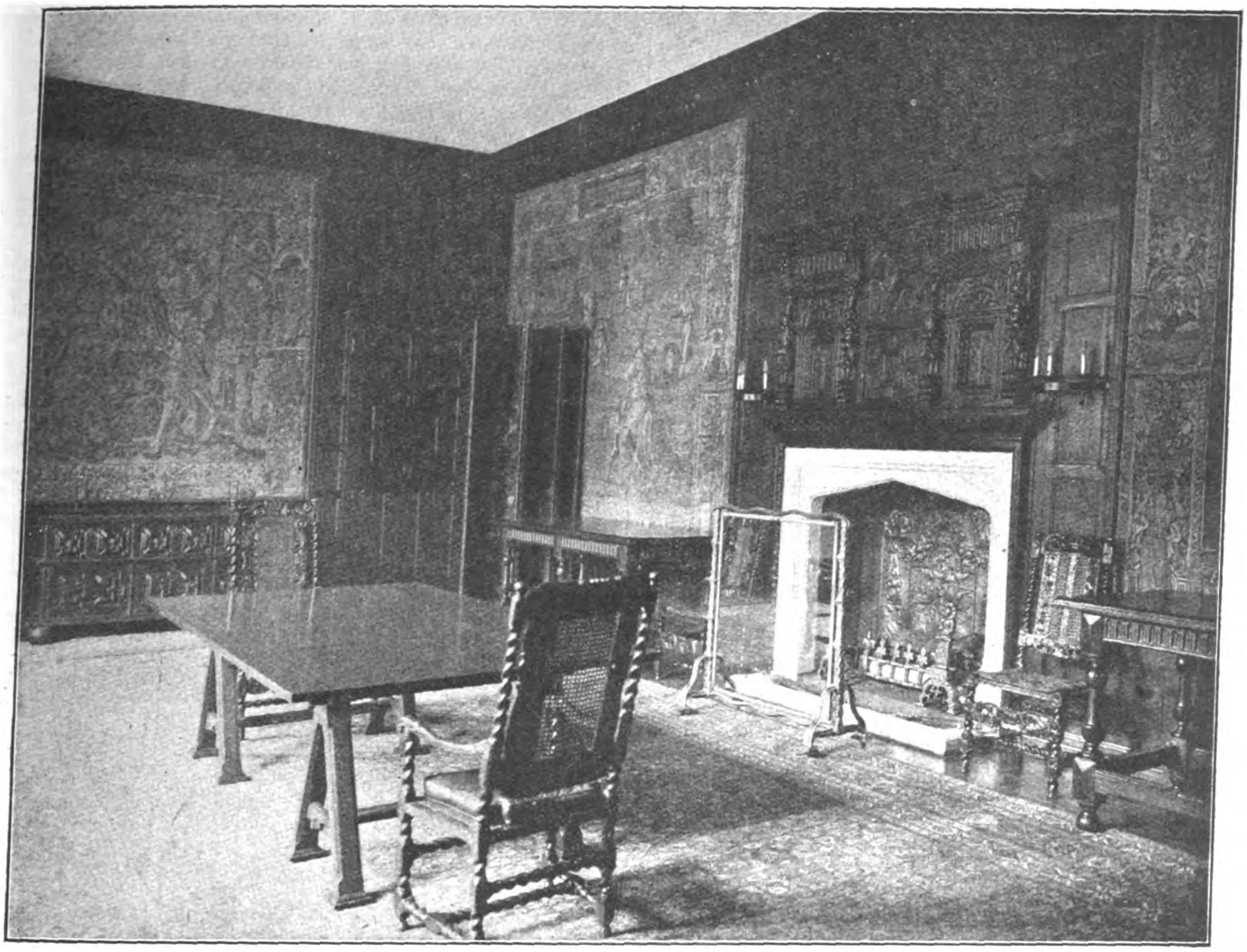
It was resolved that the next Congress, in 1915, should be held in St. Petersburg. The idea was discussed whether the subsequent Congress, in 1918, could be held in London.

The Bureau of Standards at Washington.

The delegates took an opportunity afforded them of visiting the National Bureau of Standards at Washington established in 1901. It is now a very important institution having 286 employees, five laboratory buildings in Washington, and branch laboratories in Pittsburgh and Northampton, Pa., and in Charleston, S.C. The main laboratories on a site of eight acres are most admirably placed and equipped.

The Bureau of Standards has the custody of the standards of measure, with the responsibility for inter-comparisons necessary to maintain their constancy. It also undertakes the comparisons of standards for States, municipalities, and the general public, the construction of new standards, the determination of physical constants, and the determination of the properties of materials. In very many respects the Bureau of Standards corresponds to the National Physical Laboratory at Teddington.

A department which interested the delegates was that for testing materials. Amongst the materials dealt with are cements, concretes, steel, bricks, clays, alloys, rubber, paper, textiles, &c. Equally important are studies of the scientific and practical basis for specifications, the determination of desirable qualities in materials, their accurate description in terms of physical and chemical properties,



SUTTON PLACE: DINING-ROOM.

standard methods of sampling, and standard methods of testing.

The cement used in all federal and State buildings and that for the construction of the Panama Canal is all tested by the laboratory.

For the investigations of engineering materials the Bureau has an equipment such as does not exist in this country. Amongst the testing machines may be mentioned an Emery testing machine of the highest accuracy capable of straining to 2,000 tons specimens up to 30 feet in length. At the Pittsburgh laboratory the Bureau has erected a machine capable of exerting 5.000 tons.

The delegates learned that in addition to sites and buildings the Government gives an annual subvention of nearly £100,000 for the development and maintenance of the laboratory. The following is a summary of the last appropriation:—

Salaries	£48,000
Apparatus, &c.	10,000
Light, heat and power, and contingencies	5,000
Repairs	400
Grounds	600
Investigation of effect of electric currents on water mains, &c.	2,000
Investigation of structural materials	15,000
Maintenance and operation of testing machines	6,000
Construction of testing tank for current meters	1,000
	£88,000

There has been a further appropriation of £20,000 for additional land and for an investigation of refrigerating constants.

Visit to Pittsburgh, Buffalo, and Niagara.

One of the signers of this report proceeded on the complete official tour, which included Washington, Pittsburgh, Buffalo, and Niagara, and lasted for one week.

Both at the Bureau of Mines, Pittsburgh, and at Washington development in the practical testing of materials in the Bureau of Standards is very considerable; real workable plants for investigation in the manufacture of paper, bricks, and other building materials, coal briquetting plant, &c., are in full operation, and it is anticipated that this branch of investigation will be extended to many commercial interests in the United States. Of special interest was a test conducted on the crushing strength of a large brick pier by means of a ten million pound Olsen compression machine. This pier, which was 4 feet by 4 feet by 12 feet, failed at 6,580,000 lb. These tests are made for the purpose of ascertaining the loads which may be safely placed on piers in the enormous buildings always under construction in the United States.

In every direction, especially under Government superintendence (the Bureau of Standards and the Bureau of Mines), there is to be seen a determination to discover the most economical methods of conducting commercial operations, and in these investigations, as has been already mentioned, Government gives liberal assistance by special Congressional grants, expended under talented specialists.

In conclusion, the delegates make the following recommendations for the consideration of the Board of Trade:—

1. That His Majesty's Government recognise the International Association for Testing Materials by continuing to appoint delegates to the periodical Congresses, with instructions as to their duties.

2. That a subvention to the funds of the Association should be made either directly or through the departments interested in the work of the Association.

3. That should the Congress meet in London in 1918 His Majesty's Government should accord the Congress official recognition.

MR. C. VALENTINE HUNTER, A.R.I.B.A., C.C., died at his London residence on the 4th inst. in his seventy-second year. Mr. "Val" Hunter practised in the City, and for nearly twenty years represented the Castle Baynard Ward. He was well known in connection with athletics, and in his prime was well known as a runner, oarsman, swimmer, and shot.

PROFESSIONAL CHARGES OF ARCHITECTS.

IN view of the business at next Monday's meeting of the Royal Institute, considerable interest attaches to the following report in a recent issue of the *Journal of the American Institute of Architects* by its Committee on Schedule of Charges: Irving K. Pond (F), R. Clipston Sturgis (F), Joseph C. Llewellyn.

The committee on the Schedule of Charges is cognisant of a very widespread feeling within the Institute that the schedule of charges, as at present formulated, does not meet the nation-wide demands of the profession, in that it is not a logical nor altogether fair expression, and does not satisfy the special needs. That feeling was in a measure voiced in the report of the committee to consider the reports of special committees at the last Convention, together with their suggestion that the committee be continued and instructed to report to the present Convention along lines suggested by last year's report. Communications from Chapters and individuals indicate the desire for a more definite statement of the fee considered proper in cases where more than the 6 per cent. minimum is to obtain; for the establishment of a fee of less than 6 per cent. for buildings of simple type of construction; and for a graduated scale running from a higher fee for work of lesser cost to a lower fee for work of greater cost. To meet all of these eminently reasonable requirements has been the aim of your committee in formulating the schedule which it herewith presents for your careful consideration and criticism and possible, though at present hardly probable, adoption.

Mr. Robert Maynicke, who was a member of this committee when death robbed it of his services, formulated that portion of last year's report which placed loft and factory buildings in the 5 per cent. class. He did this in obedience to his own desire, and at the earnest solicitation of many members of the New York Chapter, if not of the Chapter itself. The recollection of the chairman is that the officers of the New York Chapter had petitioned the Board of Directors of the Institute to permit the 5 per cent. rate on lofts in the competition code. Mr. Maynicke expressed himself shortly before his death as being opposed to an extensive revision of the schedule, in view of the effect such revision might have upon the courts. It is the opinion of the chairman and one other member of this committee that the courts will soon recognise and enforce whatever may appeal to them as a fair, reasonable, sound, and logical schedule, and it is just such a schedule that the Institute desires to promulgate, and no other.

If the courts or the Institute desire precedent, this committee presents France, with her graduated scales; Germany, with a detailed classification of buildings to which graduated scales are applied—a certain per centum on the structural part and a higher per centum on the artistic features—a schedule subdivided with the most detailed minutiæ; England, with a graduated scale for work costing up to $12,500, and from there on a flat rate of 5 per centum. "Graduated scale" in all these cases meaning, as before stated, a higher rate for a work of smaller cost, with the rate diminishing as the cost increases. While the German schedule shows the ultimate in logical development, it seems to this committee to be too detailed to be more than suggestive to us. The new schedule of the Royal Institute of British Architects is really more detailed than that presented by your committee. The service furnished by the architect under the 5 per cent. of the English schedule is considerably less than is expected from an architect in the United States under our 6 per cent. minimum, and rates are fixed for the extras which enter in to make up the full complement of the architect's services.

In formulating this schedule the committee has changed the form and wording of the present schedule as little as possible, and has sought to conserve what has been gained to the profession by such recognition of the 6 per cent. flat rate as has been attained.

The schedule will tend to help the architect in modest practice, while under it the practitioner whose single commissions run up into the millions will find ample reward. Mr. R. C. Sturgis felt that the committee might better not present a definite form to the Convention, but should simply ask instructions. This sentiment is not shared by the other members of the committee, who feel that the instructions are sufficiently definite and that the Institute can better determine whether it wants a thing when it sees clearly what manner of thing it is. The expressed fear that the public will come to think that there are types of building which an architect can afford to do for less than 6 per cent. may be doubly discounted, as the building public already knows that a great many architects do not ask or receive more than 5 per cent. on any class of work other than residences, except as the commission may be gained through a competition.

It might be well for our schedule to state frankly that its minimum fee is not to be considered as sufficient remuneration for the services of an architect of special attainments and high standing, who should formulate his individual schedule on a higher basis. Following will be found the committee's suggestions.

Professional Practice of Architects and Schedule of Proper Minimum Charges.

1. The architect's professional services consist of the necessary conferences, the preparation of preliminary studies, working drawings, specifications, large-scale and full-size detail drawings, and of the general direction and supervision of the work.

2. The architect's charge shall be based upon the total cost (or in case of discontinuance or abandonment, upon the estimated total cost) of the work. Total cost is to be interpreted as the cost of all materials and labour necessary to complete the work, plus contractors' profits and expenses, as such cost would be if all materials were new and all labour fully paid, at market prices current when the work was ordered.

3. The minimum charge for work of a particular type and cost is as given in the following tables and notes:—

Table A.

	Lofts, factories, warehouses, power-houses	Public and private work generally		Residences		Monuments, fixtures, furniture, cabinet-work, &c.
Cost.	Per cent.	Per cent.	Cost.	Per cent.	Cost.	Per cent.
$20,000	5·5	6·5	$10,000	8·	$100	20
30,000	5·4	6·4	20,000	7·9	300	19
40,000	5·3	6·3	30,000	7·8	600	18
50,000	5·2	6·2	40,000	7·7	1,000	17
75,000	5·1	6·1	50,000	7·6	1,500	16
100,000	5·	6·	75,000	7·5	2,000	15
150,000	4·9	5·9	100,000	7·4	3,000	14
200,000	4·8	5·8	150,000	7·3	5,000	13
250,000	4·7	5·7	200,000	7·2	7,500	12
300,000	4·6	5·6	250,000	7·1		
350,000	4·5	5·5	300,000	7·		
400,000	4·4	5·4				
450,000	4·3	5·3				
500,000	4·2	5·2				
750,000	4·1	5·1				
1,000,000	4·	5·				

For alterations in existing work the fee should be twice that for new work of the same cost, the owner furnishing measurements and other necessary data.

When the cost falls between any two consecutive figures in the cost columns, the higher percentage shall be used in computing the fee, but such fee shall not exceed that set down as proper for the higher of the two figures. In public work in which the architect is forced to modify his practice in accordance with special laws or departmental rules the minimum fee shall be determined by the following:—

Table B.

On work costing up to $100,000 the fee shall be that determined by Table A, under "Public and private work generally."

Cost.	Per cent.
From $100,000 to $1,000,000	6·0
From $1,000,000 to $2,000,000	5·8
From $2,000,000 to $4,000,000	5·6
From $4,000,000 upward	5·5

4. When two or more buildings are erected from the same plan, at the same time, in the same locality, the fee shall is based upon the total sum of the costs, except that the charge for supervision should be determined by multiplying the fee for the supervision of one building by the number of buildings erected.

5. The following table will indicate a proper division of the total fee in relation to the various services rendered:—

Table C.

Services.		Corresponding values in the tenths of the total fee.	
Preliminary Studies	Preliminary sketches sufficient to judge the scheme	·1	
	Fully developed preliminary sketches	·1 + ·05	= ·5
Working drawings		·35	
Full-size details		·05	= ·2
Specifications		·15	
Preparing and lotting contracts			·3
Supervision			
Auditing accounts			

6. The architect is entitled to compensation for articles purchased under his direction, even though not designed by him. (Present 3.)

7. If an operation is conducted under separate contracts rather than under a general contract, it is proper to charge a special fee in addition to the charges mentioned elsewhere in this schedule. (Present 4.)

8. Where the architect is not otherwise retained, consultation fees for professional advice are to be paid in proportion to the importance of the questions involved and services rendered. (Present 5.)

9. The total cost upon which the minimum charge is based includes the cost of such structure, and such heating, ventilating, sanitary, and electrical equipment as shall serve the normal purposes of the building as such. Should special equipment to serve the needs of special uses or occupancy be desired, the architect is entitled to an extra fee for designing and supervising the installation of such equipment; and if the services of experts are demanded by the owner, said owner shall pay for them. Chemical and mechanical tests and surveys, when required, are to be paid for by the owner.

10. Necessary travelling expenses are to be paid by the owner. (Present 7.)

11. If, after a definite scheme has been approved, changes in drawings, specifications, or other documents are required by the owner; or if the architect be put to extra labour or expense by the delinquency or insolvency of a contractor, the architect shall be paid for such additional services and expense. (Present 8.)

12. Payments are due to the architect as the work progresses, and in accordance with the subdivisions given in Table C, excepting that the fee for supervision is to be spread over the entire period of the work, the final one-tenth of the fee being due when the final accounts are audited. Until an actual estimate is received, charges are to be based upon the proposed cost of the work, and payments received are on account of the entire fee.

13. In case of the abandonment or supension of the work, the basis of settlement shall be in accordance with the apportionment made in Table C.

14. The supervision of an architect (as distinguished from the continuous personal superintendence, which may be secured by the employment of a clerk of the works or superintendent of construction) means such inspection by the architect or his deputy of work in studios and shops or a building or other work in process of erection, completion, or alteration, as he finds necessary to ascertain whether it is being executed in general conformity with his drawings and specifications or directions. He has authority to reject any part of the work which does not so conform and to order its removal and reconstruction. He has authority to act in emergencies that may arise in the course of construction, to order necessary changes, and to define the intent and meaning of the drawings and specifications. On operations where a clerk of the works or superintendent of construction is required the architect shall employ such assistance at the owner's expense. (Present 11.)

15. Drawings and specifications, as instruments of service, are the property of the architect. (Present 12.)

PROGRESS OF SCHOOL HYGIENE.

A SESSIONAL meeting of the Royal Sanitary Institute was held at 90 Buckingham Palace Road on Tuesday, the 9th ult., when a discussion took place on the above subject. The chair was taken by Sir William J. Collins, D.L., M.D., &c.

The discussion was introduced by a report on the Fourth International Congress on School Hygiene at Buffalo by Mr. James Kerr, M.A., M.D., D.P.H., from which we give the following extracts:—

The matters which more concern to-night's discussion may be grouped as questions of environment, the child's training, and general administration.

Of environmental conditions the open-air school is being widely adopted as of immense importance in the contest with debility and tubercle. Fresh air, rest, and feeding are its dominant features, and there is a feeling that residential schools are really required for serious cases and children from homes where tubercle exists. Chicago and Boston set the example, which has extended through the land, till even California has its open-air schools, rooms, and classes.

The abundant provision of playgrounds, recreation-rooms, and opportunities for swimming and bathing, are held to be sound economy, and one of the main duties of a municipality; and here Chicago is a decade ahead of any English town.

But the open-air school suggests open-air for all scholars. The English classroom is worked to 10 square feet per head, a measure probably taken from the Prussian regulations of 1867. Classrooms in America and Canada vary from 16 to 21 square feet per head.

There are many advantages in a small classroom: space in economy of site, cost of building, heating, lighting, cleansing, and saving in effort of voice and attention from the teacher, besides reducing strain on the eyes and ears of scholars.

On the other hand, classroom space ought to be large to give a sense of freedom mentally and physically to the child, a matter of greater importance educationally than first appears, and especially is this necessary in greater lateral width of desks. A large room diminishes risk of either gross or fine infections, although these risks may be regarded as a minor consideration in school work. The most important of school health considerations is effective ventilation. With the average size of classroom and usual English climatic conditions, from 1,000 to 3,000 cubic feet of air per head is hourly required to maintain conditions satisfactory for health, and this can only be obtained by mechanical means.

Ventilation formerly supposed to be for the purpose of removing carbon dioxide and poisonous matters excreted by the lungs is now known to be needed for a different purpose, for although a poison in expired air has recently been again asserted, careful workers fail to detect even traces.

The ideal condition of living in dry fresh country air can be imagined. Oxygen is the life-giving element. There is, however, absolutely less oxygen in a cubic foot of air from the Upper Engadine, or the top of the Saint Gothard, than in the same volume from a gallery of the lowest music-hall in London in the last hours of Saturday. The qualities recognisable in country air are dryness, coolness, and movement. Nearly ten years ago Flügge and his assistants at Breslau associated heat and moisture as the chief factors in determining efficiency of ventilation. Knowing the trend of their work, it was observed practically in London schools that temperature and humidity were all that need be regarded. Some recent experiments at Boston, in Massachusetts, done on a more thorough scale, have confirmed to the letter the truth of these observations for schools. Haldane of Oxford, in his researches on the deep Cornish mines, stated concisely that the temperature of the wet bulb thermometer is of most importance. Recently Professor Leonard Hill has devised what may be called an artificial body reacting like a human body for determining the ventilation values of the summed effects of temperature and humidity in any atmosphere.

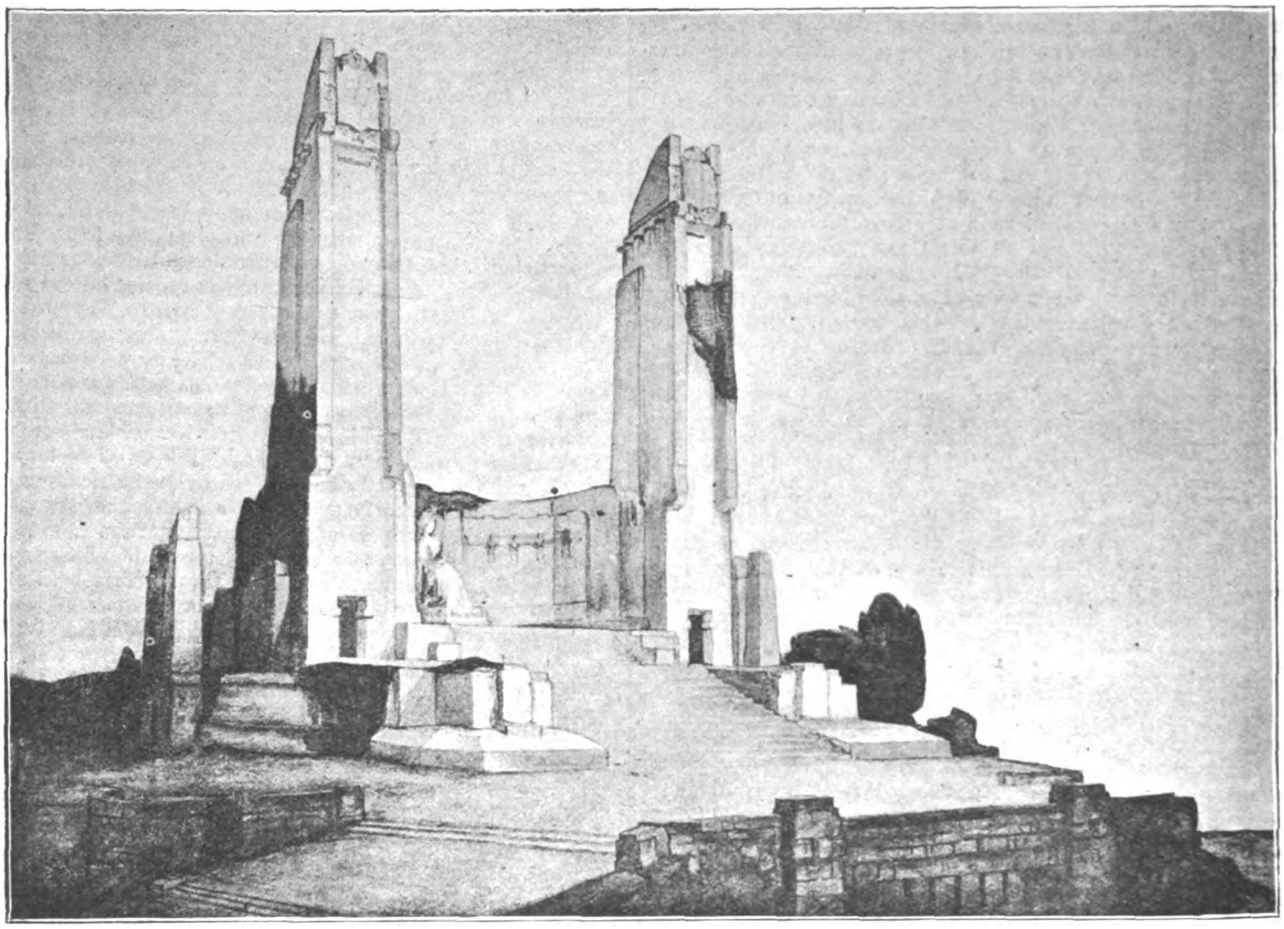
Smells or odours from respired air have subjective effects which are not noticeable to those working in it. The dry distillation of dust particles from overheated metal surfaces causes feelings of irritation in the eyes and dryness and tickling in the throat, which are independent of humidity. The presence of dust and actual disease germs is a separate problem. It may now be clearly and definitely stated that the chemical composition of the air as affected by respiration is, sanitarily, of no importance. The purpose of ventilation is the removal of heat from the body, or as the Breslau investigators put it, the prevention of heat accumulation. This heat accumulation interferes with metabolism, inducing the well-known symptoms of fatigue, toxic exhaustion, and breathlessness. The heat removal takes place by the natural warming of the film of the air in contact with the skin; this film of air must be cooler than the skin, but not too cold to be unpleasant. Tight or thick clothes interfering with its movement prevent ventilation in other ways than is usually implied. The specific heat of air, however, is very low, so that air alone does not remove enough heat. A sufficiency is only removed when there is a considerable amount of water vapourised at the surface of the skin, much heat being then rendered latent.

The problem of ventilation then becomes the supply of cool, dry air in school. It might be illustrated by the extreme theoretical case of a room with large windows and a very low outside temperature, when the supply of fresh air required to meet respiratory requirements would become a negligible quantity.

Where mechanical arrangements have been used they have generally been discounted in practice, because hitherto, although protested against for years, the mistake has been made of carrying heat by air. All schoolrooms require warming quite separately from the air supply. Specially devised schools for cross ventilation, like the Staffordshire

MODERN EUROPEAN ARCHITECTURE.

SPAIN.



[From *Arquitectura y Construccion.*

DESIGN FOR MONUMENT TO H.M. QUEEN CHRISTINA AT SAN SEBASTIAN.—Don Teodoro de Anasagasti, Architect.

type or the new Derbyshire schools, have advantages in mild or warm weather, but are very costly in heating in winter, when, indeed, their windows might advantageously be shut. With classrooms on the ten-square-feet basis any system of natural ventilation will often fail from the health standpoint, and probably 90 to 95 per cent. of English classrooms are wanting in this respect; they then help to manufacture anæmia, debility, and headaches. With a circulation of cool air by a plenum system, or locally by electric fans, even the smallest classroom can be made healthy. By washing, cooling, and moving the air the health conditions of fresh country air can be reproduced anywhere.

These principles have been carried out in America to the extent of advocating "recirculated air" or reventilation. One large gymnastic institution for over a year has been washing the used air and recirculating it with fans; no fresh air is taken in, and the gymnasia and other rooms are said to be always cool and fresh. The new arrangements have further saved 60 per cent. on the previous coal bills, and 40 per cent. on other working expenses. Obviously a possibility of material gain in health in school lies in better ventilation.

Lighting of schools was considered at two Buffalo meetings, held jointly with the American Illuminating Engineering Society. The standard of two foot-candles as the minimum artificial lighting of a school place was unanimously concurred in. Many views of day lighting were expressed, and an obvious dislike of sunshine in the school was really a local climatic perculiarity. Right-handed and back lighting must be adjudged insanitary, and, in addition to the children's difficulties, many a teacher is condemned to a painful existence of neurasthenic headaches from working facing the glare of windows.

In regard to infectious diseases, the modern view that the town school is a relatively unimportant factor in distribution was well put by several authors of repute and wide experience, and school disinfection condemned as wasteful and unnecessary. Extreme care, however, is taken with public drinking supplies. America is the land of the crystal spring and other jet-drinking fountains. Parchment-paper cups are gratuitously distributed by railway companies, sanitary authorities, insurance societies, and others. Impure water itself is a serious risk nearly all over that continent. It will be remembered that Montreal is the only great city whose typhoid mortality rises, showing a positive instead of a negative increment in the deaths, whilst in the schools at Ottawa are notices on the water taps that "whatever anyone may say, this water is dangerous to drink."

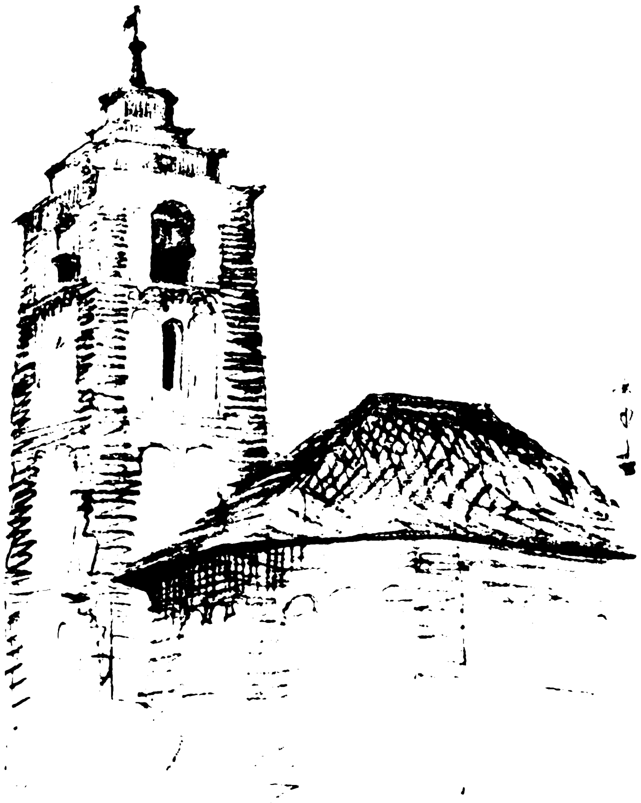
In cleansing methods, the vacuum arrangements present novelty. They were first experimentally adopted some years ago in Hamburg. Boston fitted a school out in 1908, and temporarily abandoned the method. With improved arrangements this method now takes the first place, and the last four new schools in Boston are so provided. The school arrangements I saw had piping with wall openings about the size of a fire plug, communicating with an electrically worked exhaust machine in the cellar.

Oiled floors seemed as generally used as in Germany.

Looked at as a whole, the suggestions that America insists on are that the smallest child is a potential American citizen with rights and claims upon the State which must always be fully honoured. Next that school hygiene means more than medical inspection, that the searching out of causes is required, and the prophylaxis of the conditions found on inspection. As one speaker picturesquely put it, to go on inspecting and treating is merely tinkering with evils which should be prevented.

The environment of the slum child in its classroom can be made to rival physiologically that of the more costly open-air school if proper attention is paid to the movement, temperature, and humidity of the air in the classroom, and to the feeding and resting of the child. These children bear the burden of civilisation, and health is the least of the things with which in our own interests they can be provided.

American methods by simplifying inspection, dropping out the unnecessary, diminishing clerical forms, and employing nurses specially trained to do the greater part of



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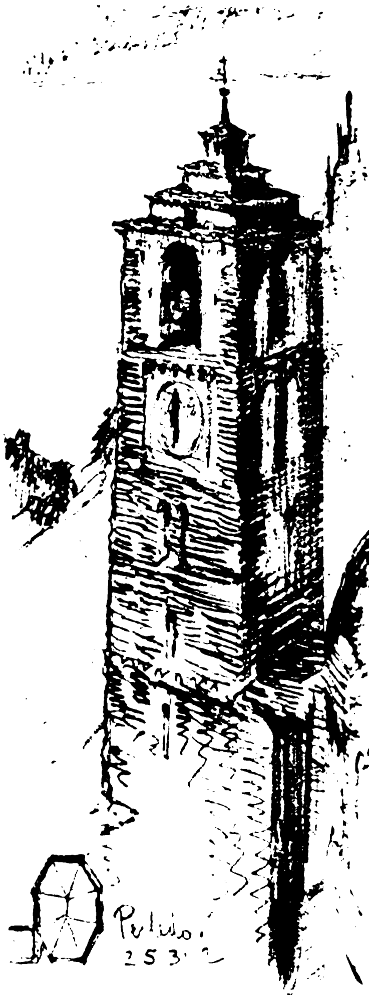

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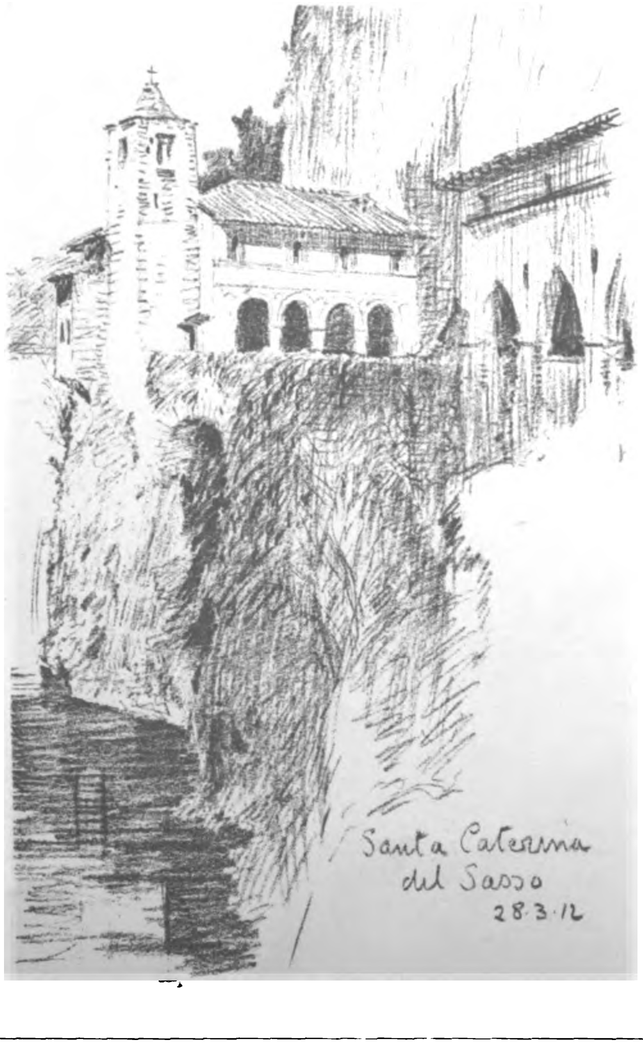

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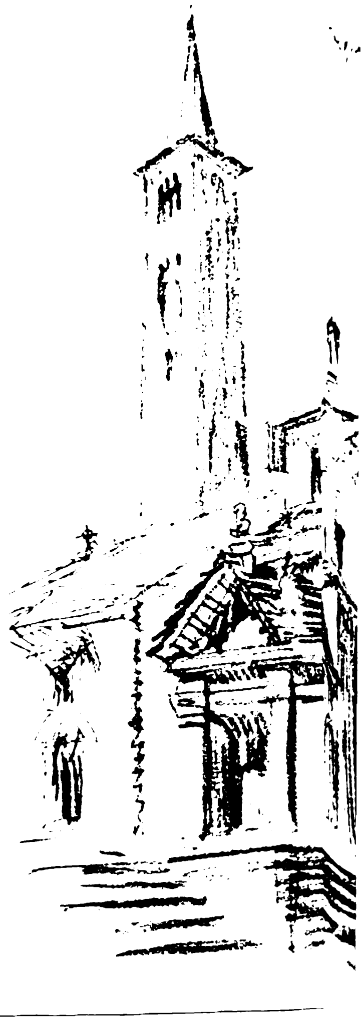

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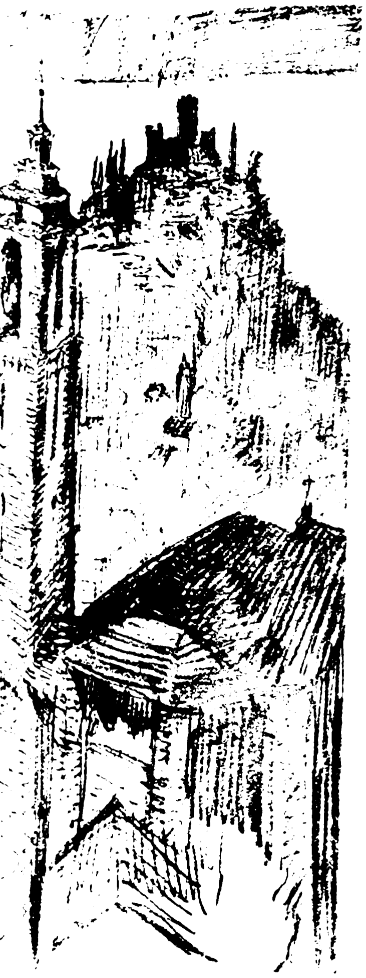

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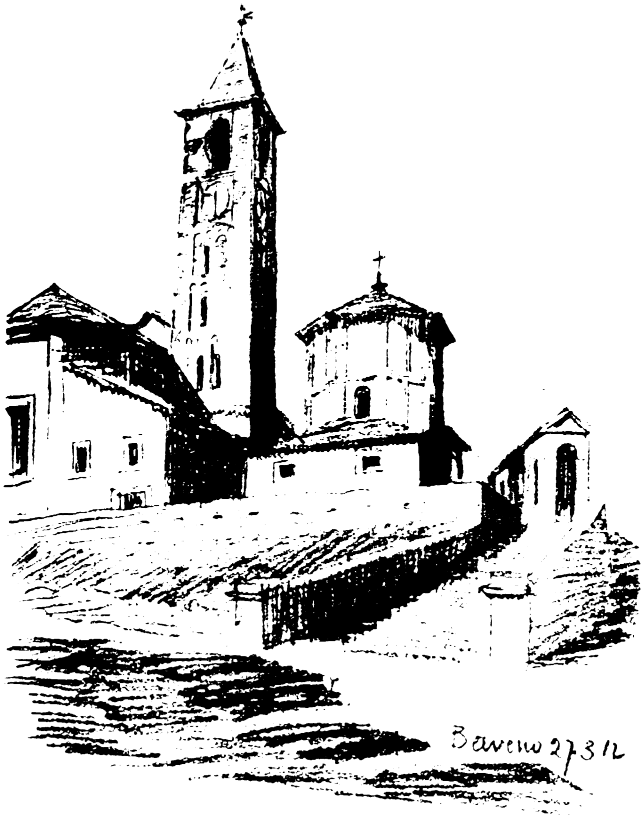
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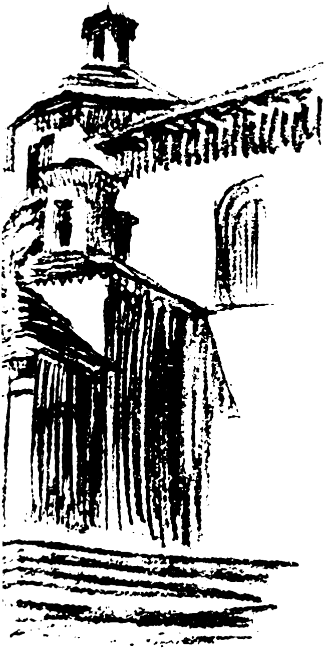

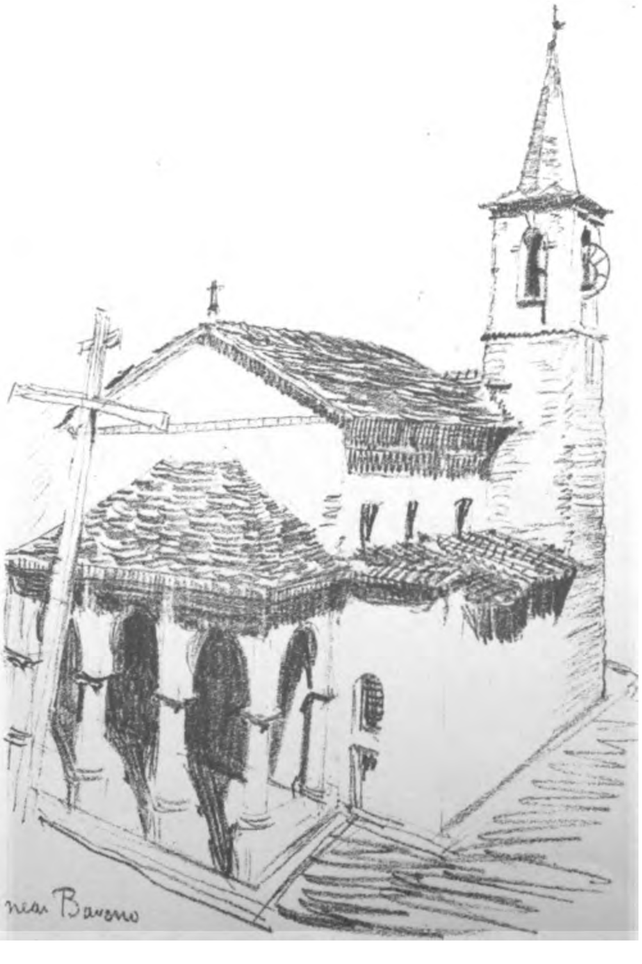
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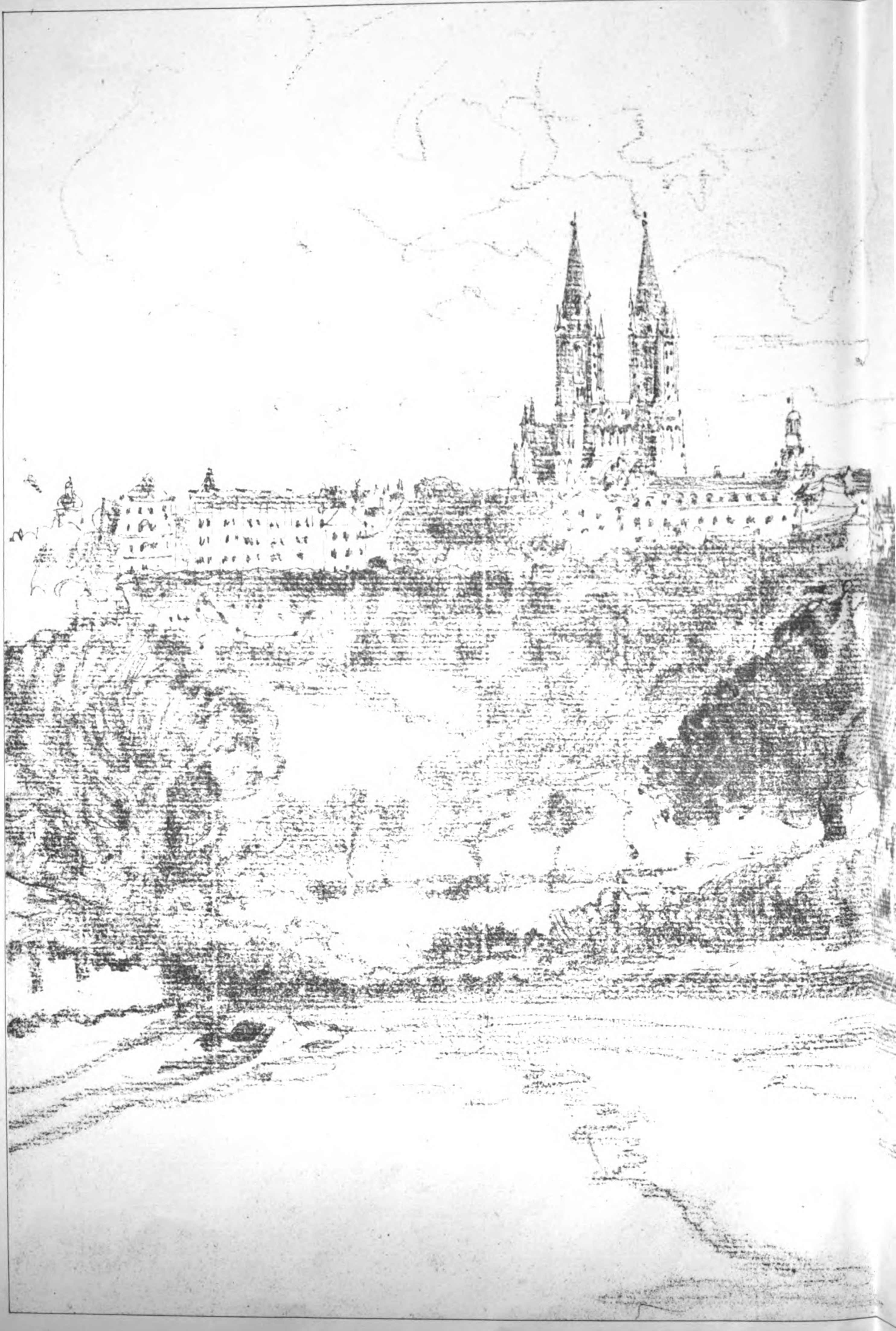

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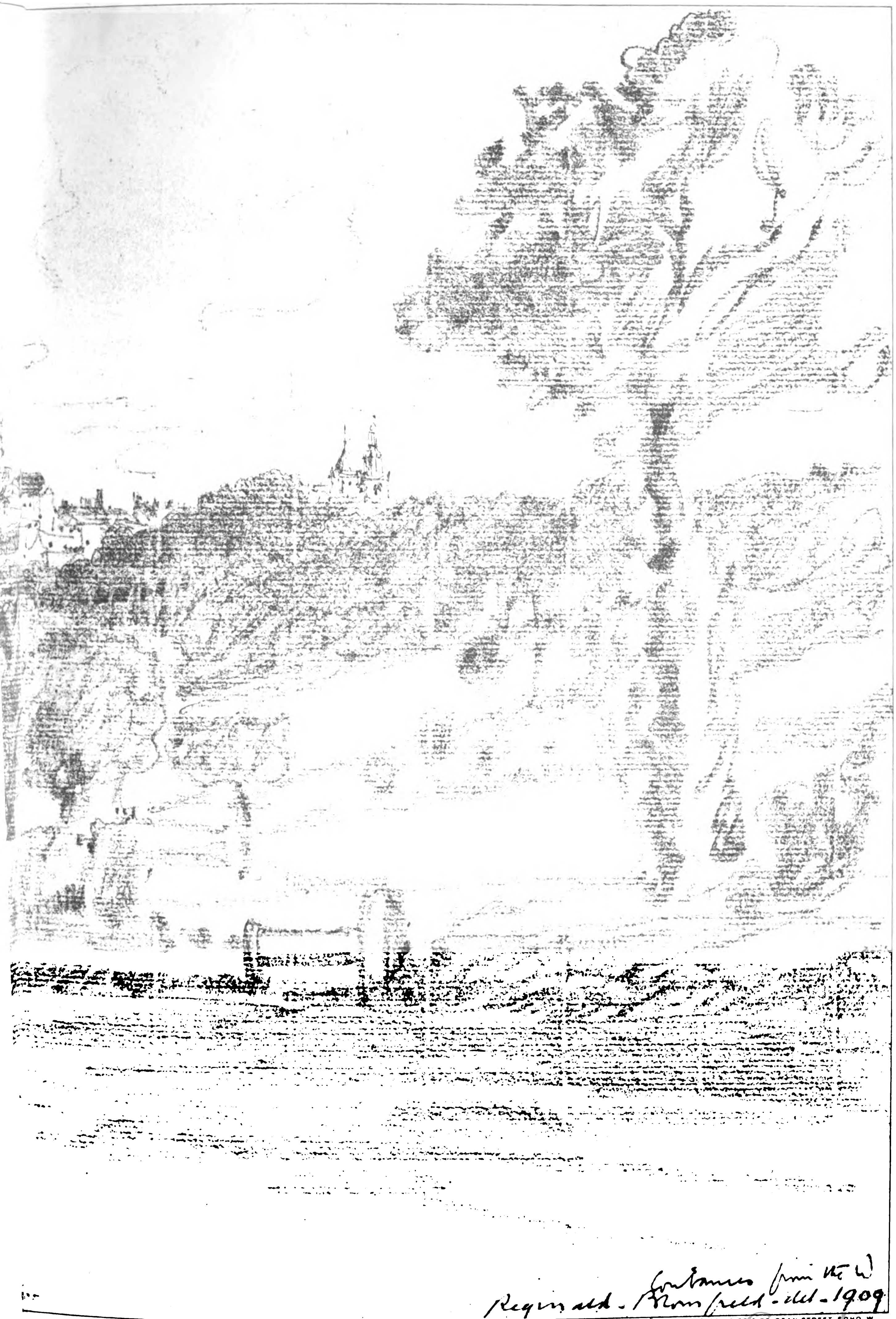
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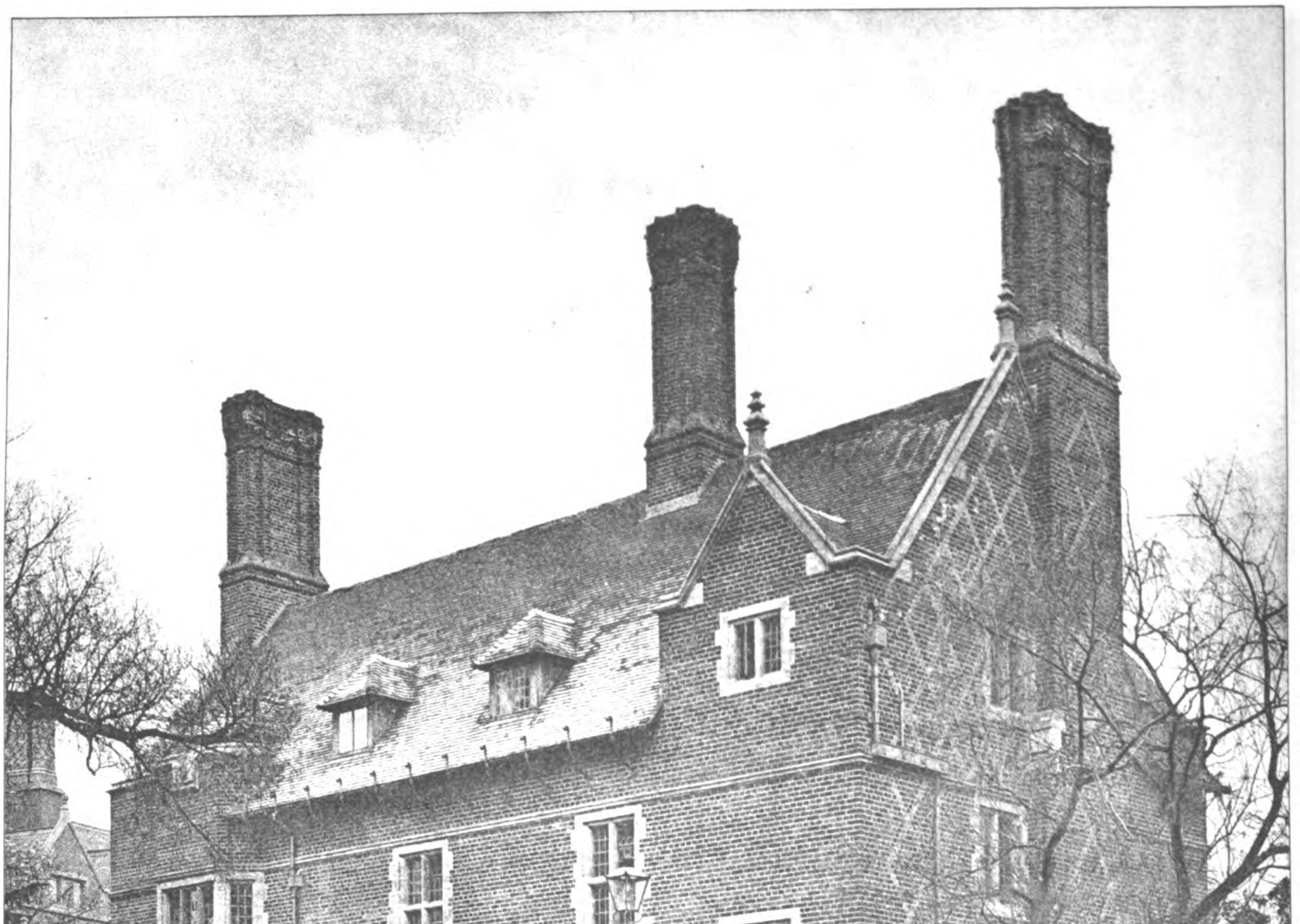
The Architect, Jan: 9th 1914.



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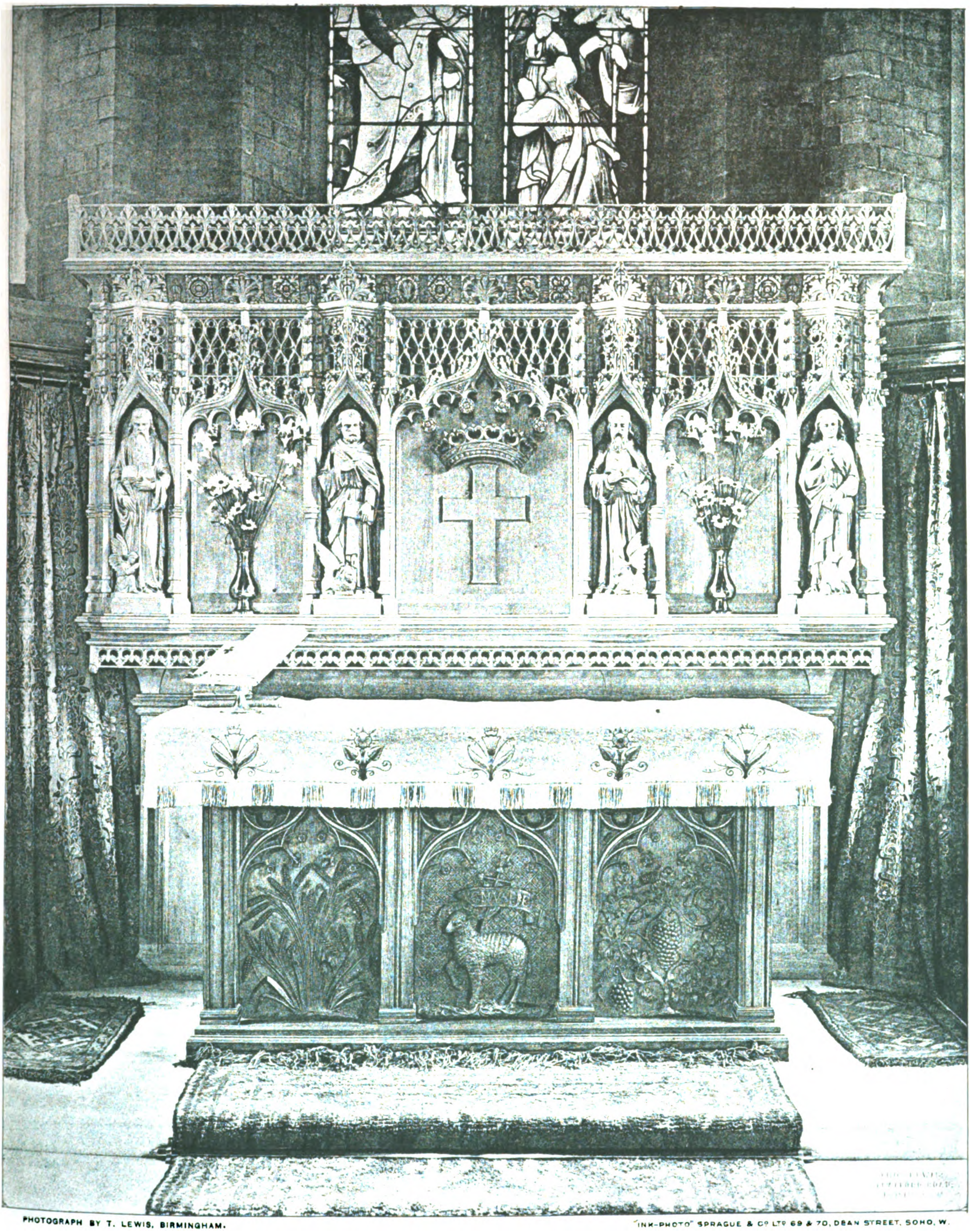
LECTURE ROOMS, ETC., TRINITY HALL, CAMBRIDGE. Mr. HASTWELL GRAYSON, M.A., Architect.

President of the Liverpool Architectural Society.



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REREDOS IN OAK, ST. AIDAN'S CHAPEL, BIRKENHEAD. Mr. HASTWELL GRAYSON, M.A., Architect.

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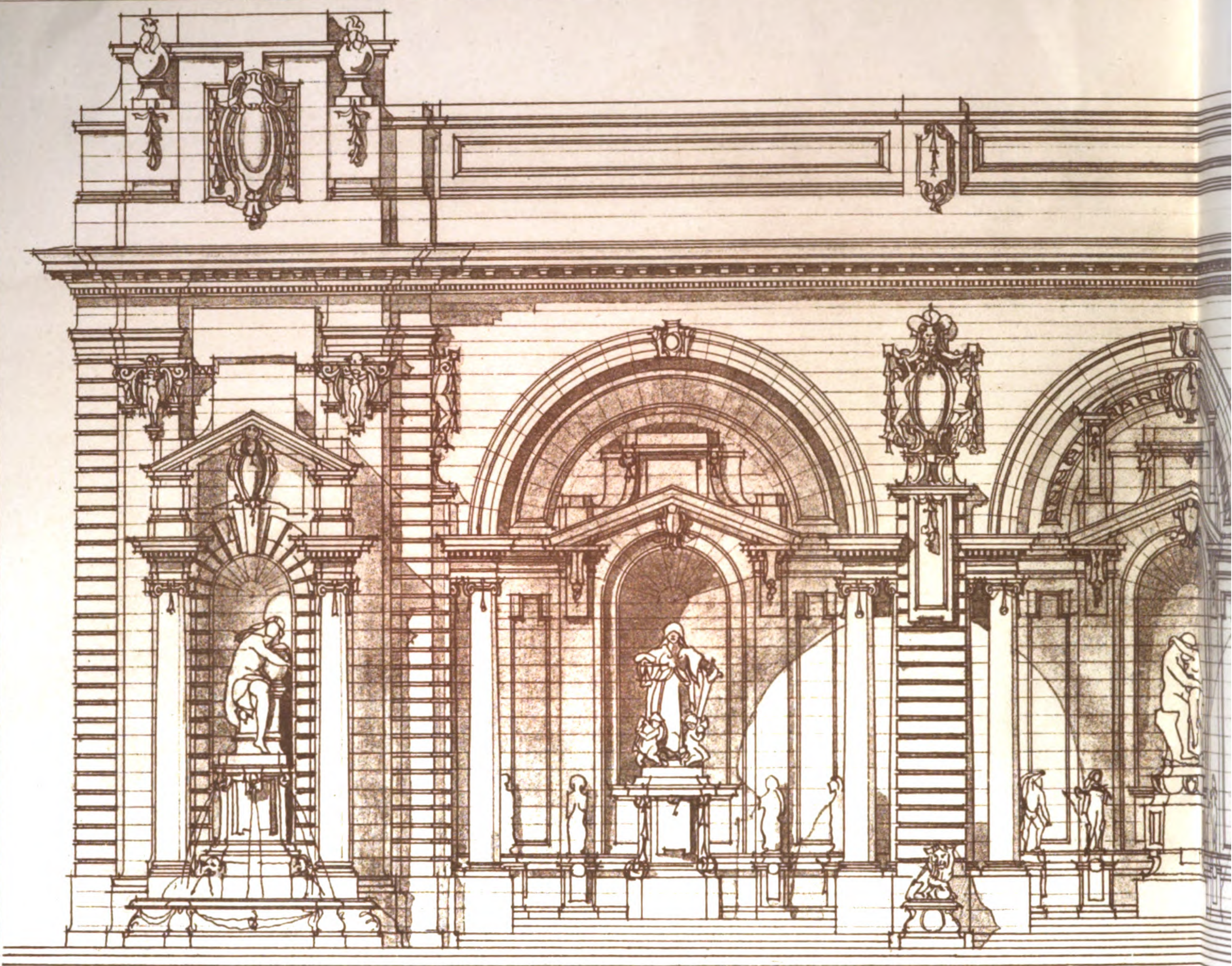

AN OPEN LOGGIA FOR SCULPTURE. From an autograph dra

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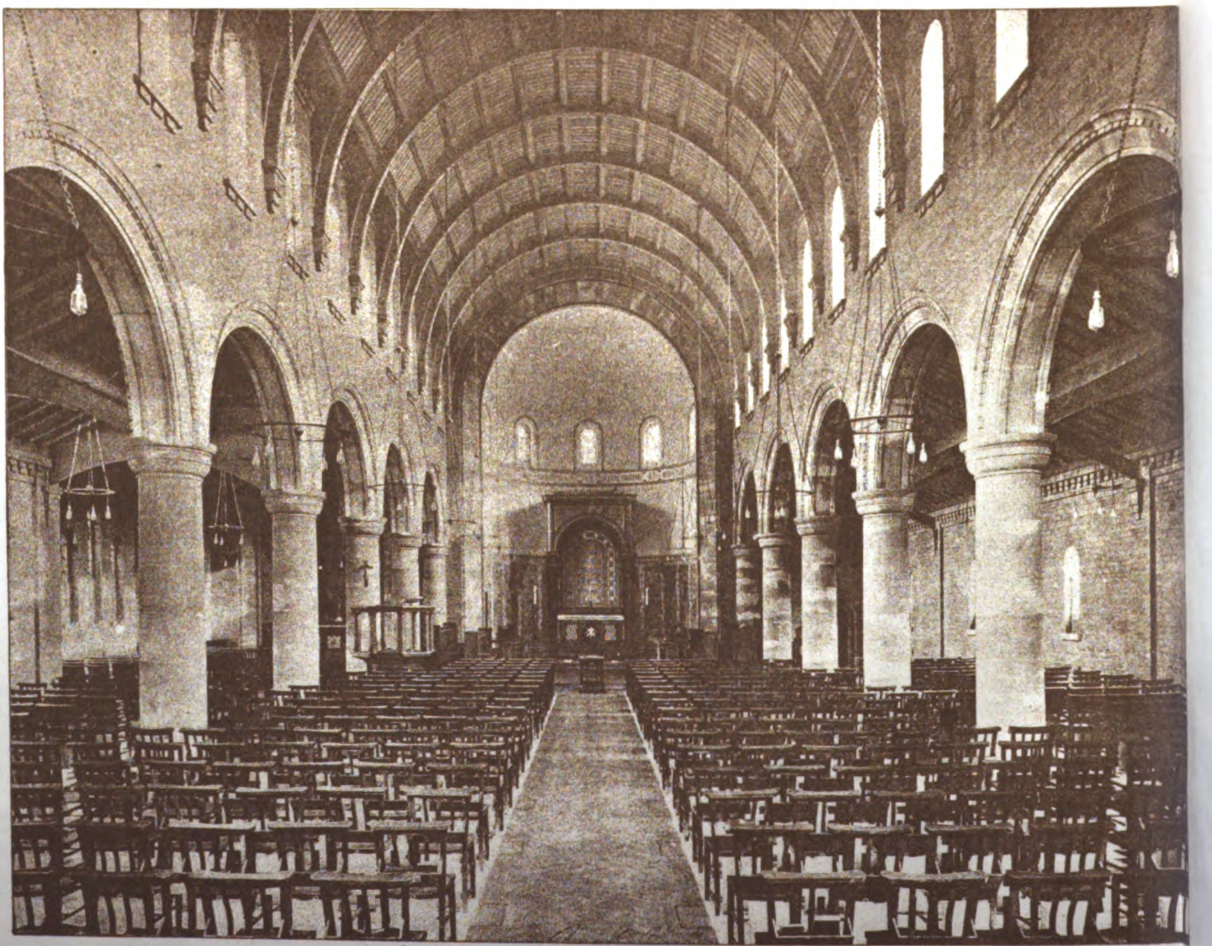

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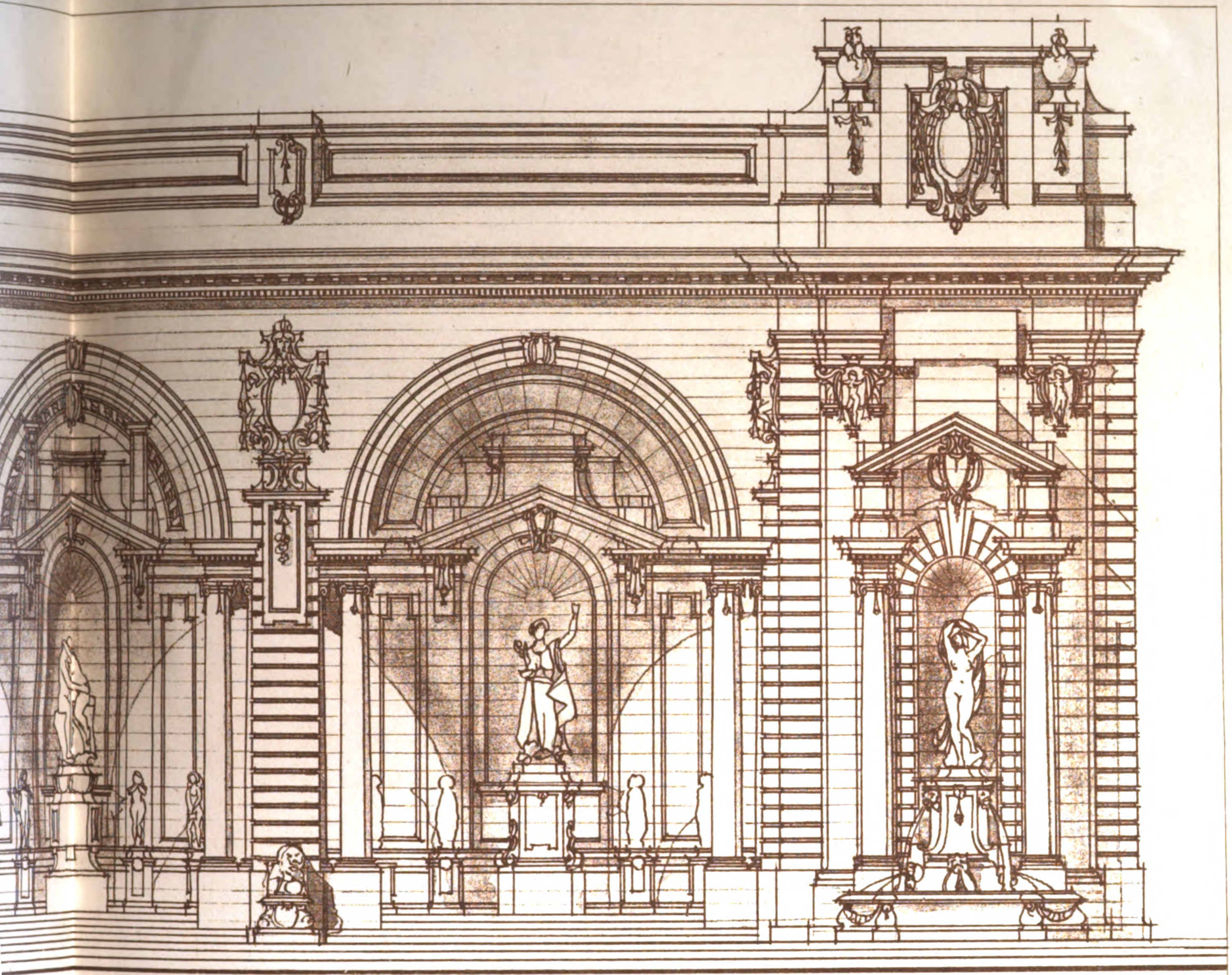

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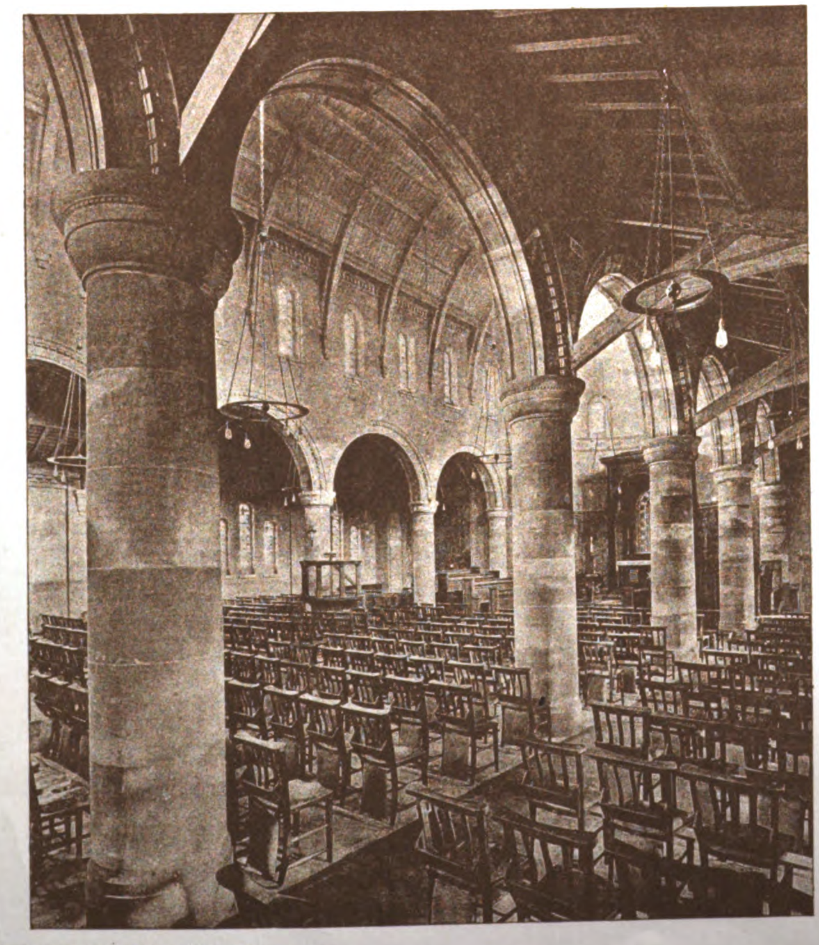

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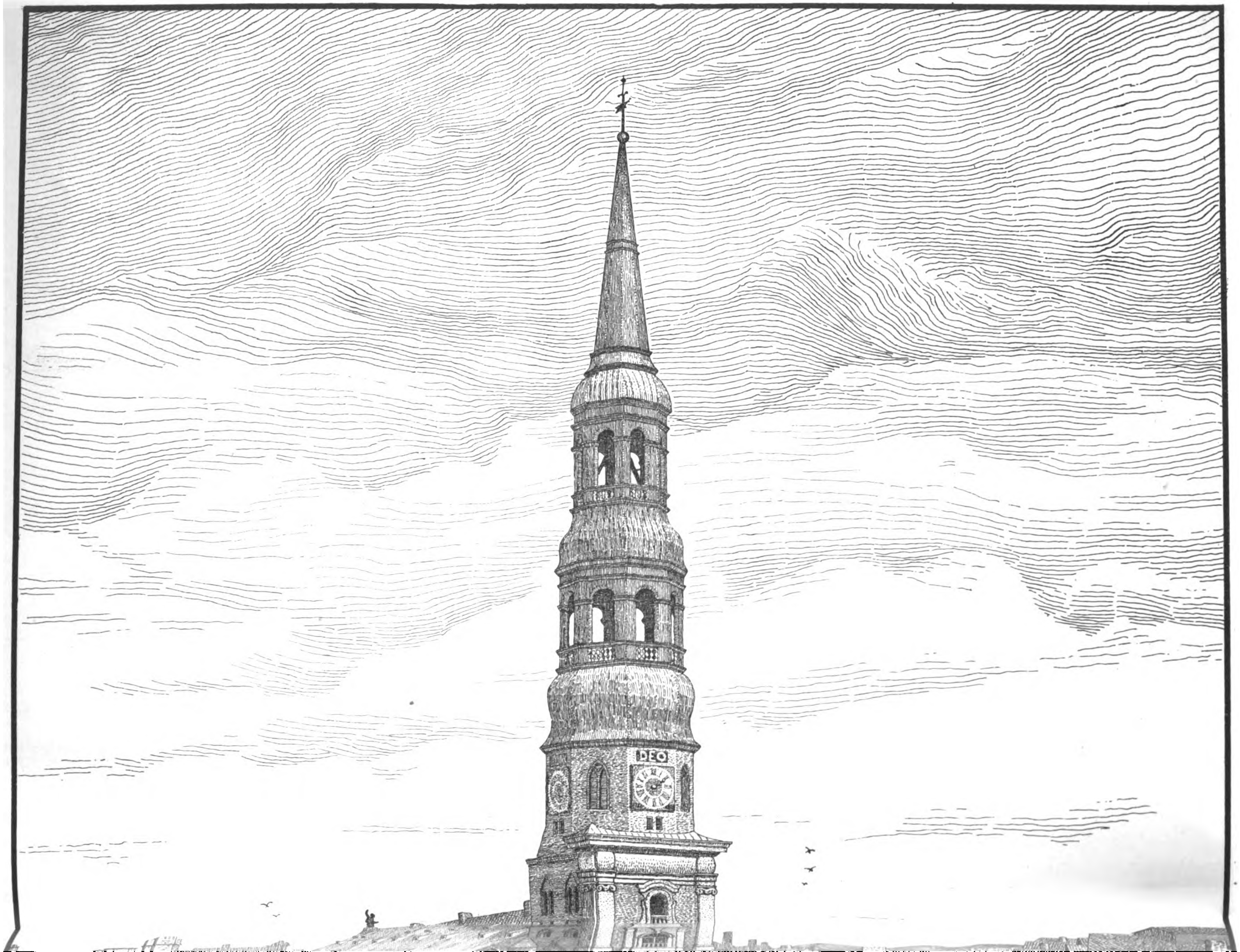
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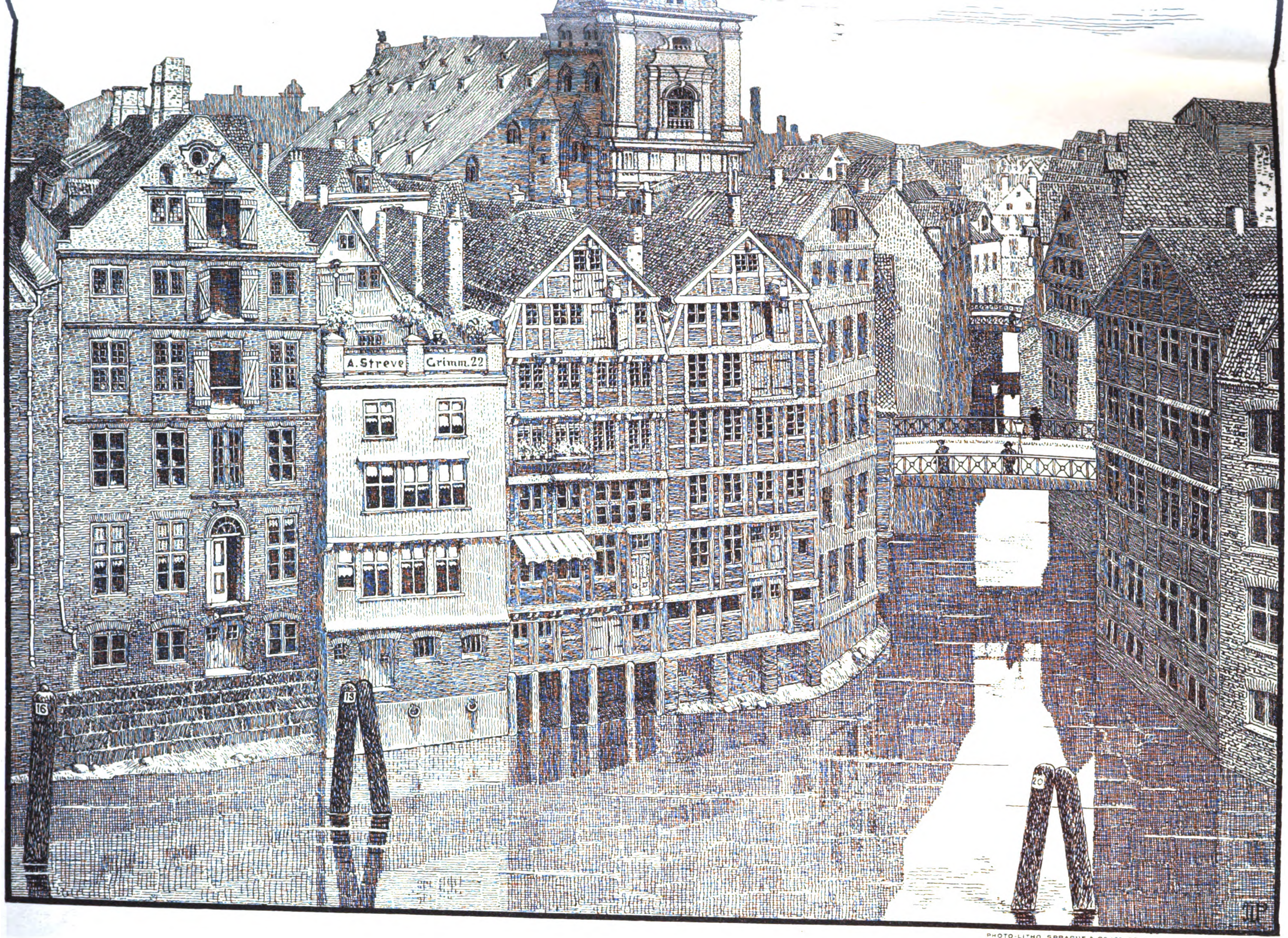
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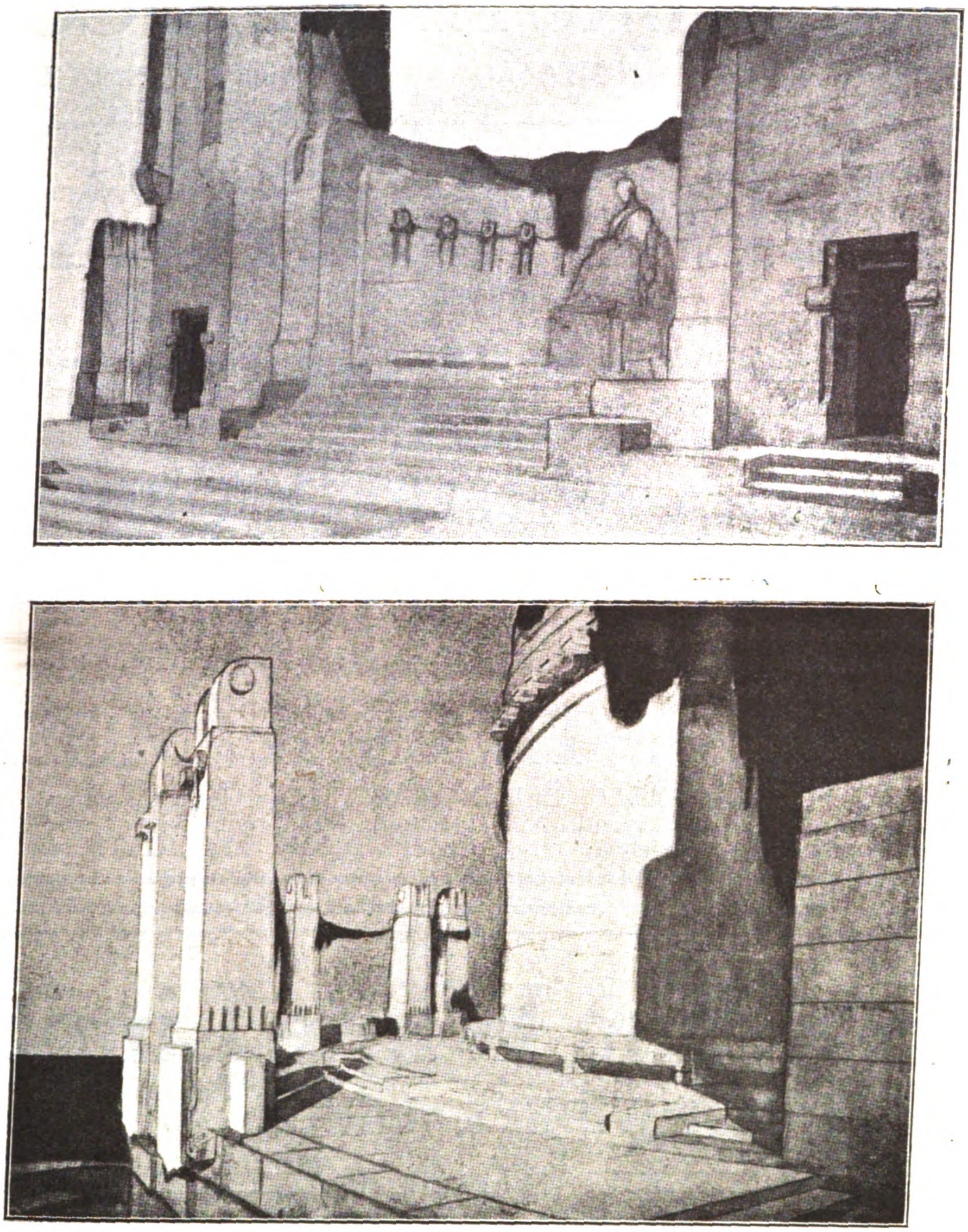

[From *Arquitectura y Construccion.*

DETAILS FROM DESIGN FOR MONUMENT TO H.M. QUEEN CHRISTINA.—Don Teodoro de Anasagasti, Architect.

work at first done by doctors, have greatly reduced cost without diminishing efficiency.

English and American ideals apparently greatly differ. Still, we console ourselves that we always muddle through. The school hygiene of the last new edition of an English text-book, which apparently has sold well in the past dozen years, is by a medical officer of health who is also a school medical officer, and he publishes plans of a model school for about 1,600 children which includes four classrooms for ninety, and other rooms for 100, 120, and 125, if I remember rightly, the last two being divisible, and one half of each entirely back-lighted. Such is a glimpse of one picture of school hygiene, here, at the present moment, and it is quite typical.

At a very fully attended meeting of the R.I.B.A. at 9 Conduit Street, on Monday evening last, Mr. Reginald Blomfield, A.R.A., President, in the chair, it was unanimously resolved to adopt the Council's recommendation to apply for a new Charter establishing a Register of Architects. An amendment in favour of promoting a Registration Bill in Parliament was lost.

SAN GIMIGNANO OF THE TOWERS.

By C. E. Eldred, R.N.

There is an irresistible fascination in those old hill-top towns of Tuscany which sit perched up on their heights, so unchanged by modernity that the circuit of their mediæval walls still suffices to contain their life. The average tourist only "does" those which happen to lie convenient to his route, takes them in his stride, and trusts to his Kodak to preserve for him what he calls his impressions. One of these, rather more inaccessible than the average, is San Gimignano.

Notwithstanding the abundance of literature which San Gimignano is said to have inspired, the only previous knowledge with which the writer was encumbered was that acquired in the cafés of Siena—a knowledge by no means extensive, since most of my acquaintances assured me that they as Italians possessed no understanding of the antiquities of their country, of which the chief students were the English and other *forestieri*. They knew it only as the Town of the Towers, mediæval of aspect, and too far off from the railway for modern convenience. From the station at Poggibonsi a post-diligence performs the journey

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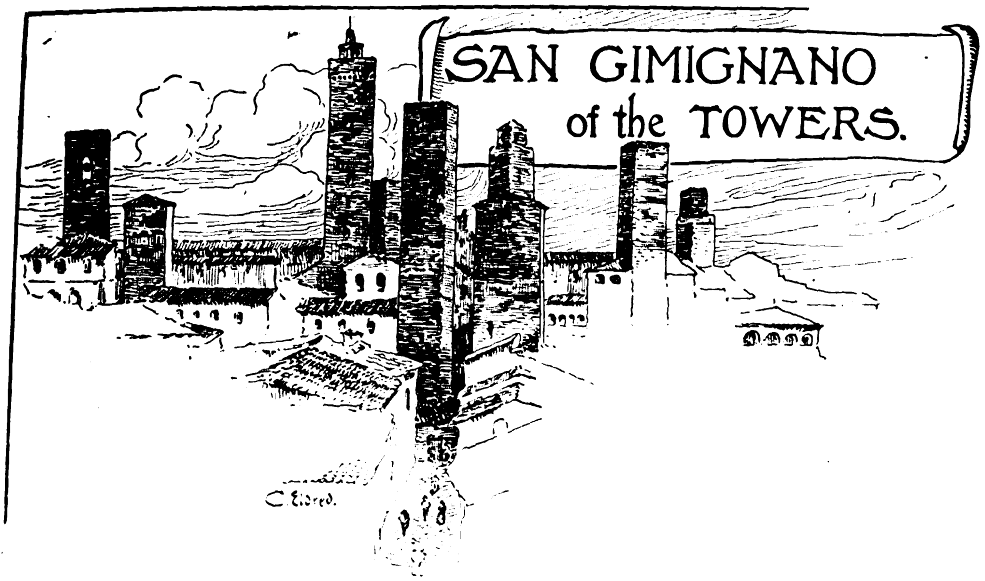
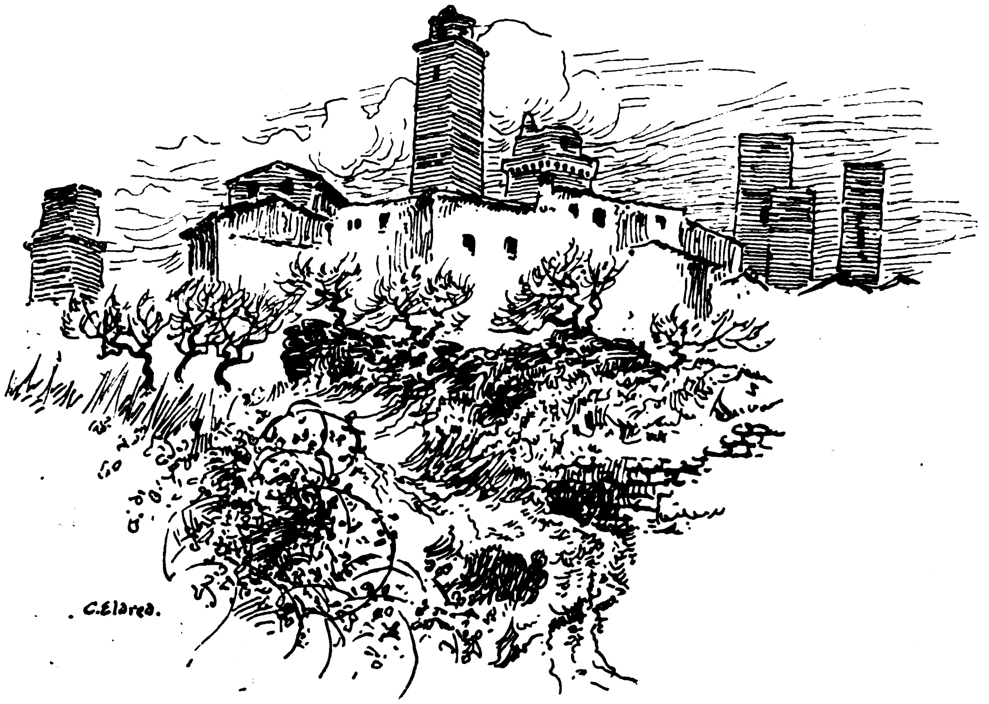

SAN GIMIGNANO
of the TOWERS.
C. Eldred.

to San Gimignano twice daily by a road which runs for half the distance through a fertile valley in which the same soil supports generous crops of vine and grain together. The first glimpse of the cluster of grey towers silhouetted against a stormy sky and crowning a distant hilltop seems neither in accordance with a rich and fertile country nor with the universal courtesy and gentility of the present generation of Italians. There had been no competition amongst the few passengers for the seat by the driver of the diligence, to whose mind the strongest evidence of the importance of his native town was the number of English who visited it, and sometimes stayed a week. This seemed also a satisfactory proof of its antiquity. And guides and drivers who wish to impress upon the foreigner the antiquity of a structure tell them it is *Etruscan*. The diligence driver added to this by informing me they were constructed to mount cannon upon.



ERRATIC SKY-LINES.

As one approaches one looks for some savage aspect of nature more in accordance with the grim architecture above. The imagination receives some satisfaction when the ascent begins and the fantastic olive trees cover the steep slopes, and the river has diminished to a stream at the bottom of a deep ravine. In the serpentine course of the road the town is lost to sight from time to time, to reappear under changed and different aspects. The red carts drawn by white oxen in the open space outside the dark archway leading into the town are sufficiently in keeping, but the response to a mental picture of a knigh in armour in the shadow of the archway is the glitter of a motor-car gliding out of the shadow. And in the costumes of the inhabitants who come out upon this terrace to get into the sun one can only discover the redeeming point that they don't wear bowler hats.

But the ever-dominant note to which the attention continually reverts is the towers. In Italian the title of the town is nearly always San Gimignano of the Beautiful Towers—an expression we might dispute the justice of. It might be questioned, indeed, if their builders gave any more consideration to the question of æsthetic appearance than do the constructors of a battleship.

They present no fantastic variety of form, being uniformly quadrilateral, and the variety in height is only due to the fact that a number of them have been partly demolished. But if you would learn the infinity of picturesque possibility they present in erratic sky-lines or effects of colour, go outside the walls at the hours of sunrise or sunset and wander amongst the olive trees on the slopes of the ravines that radiate from the foundations of the walls.

Of the five-and-twenty that existed in the sixteenth century there now remain thirteen. The greater number of these cluster quite near each other in the very centre of the town, the ancient innermost stronghold, of which the two chief gates still remain. Of the ancient well in the Piazza the inhabitants have a saying that he who

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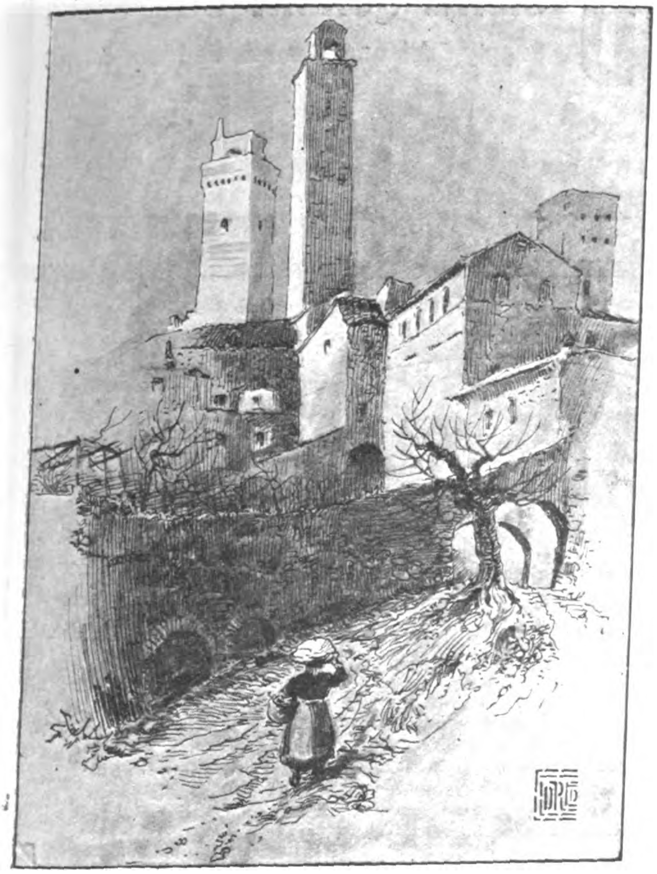
walks round this is unable afterwards to find his way out of the town, implying thereby that the briefest acquaintance is sufficient to captivate one. From this spot there is probably not an edifice one can look upon but that dates from the thirteenth or fourteenth century. There is no superfluity of ornament in the façades of these old *palazzi*; their beauty depends first upon a direct simplicity and distinct harmony of proportion, and then in the honest strength of masonry that has defied the centuries, robbing from them that golden tinge beneath which there is not the faintest hint of decay. It was of such architecture Ruskin was writing when he said: "The greatest glory of a building is in its age, and in that deep sense of voicefulness, of stern watching, of mysterious sympathy, nay, even of approval or condemnation, which we feel in walls that have long been washed by the passing waves of humanity."

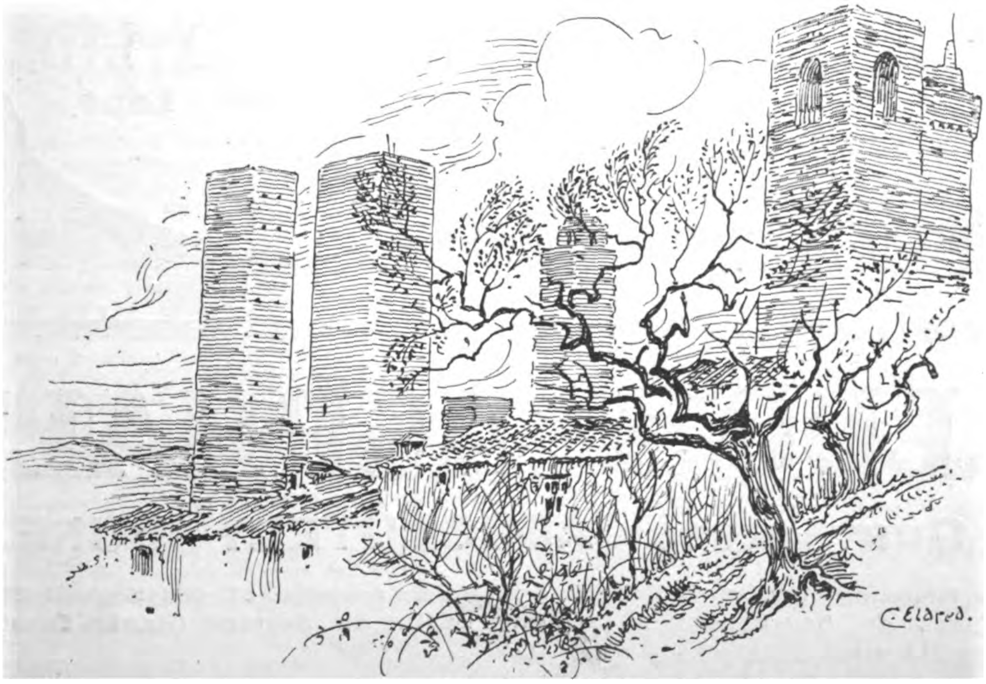


THE DOMINANT NOTE.—THE TOWERS.

It will be observed that the towers are usually a development of the principal palaces or houses of the nobles, rearing their protecting height from the flank or rear of the edifice. Luigi Pecori, the best-recognised historian of San Gimignano, states that only the richest nobles were permitted to construct these, and that their height was not permitted to exceed 50.92 metres. One could wish that in place of such mathematical precision of decimals more information were obtainable as to the engines of war that might have been mounted on the summits, for such solid platforms would have been well adapted for *ballistae* or catapults of the heaviest calibre. The long loopholes for the archers tell their own story, but the horizontal rows of square holes with projecting slabs on the lower edge still afford subject for dispute and conjecture. Some suppose that external wooden stages were constructed either for terraces upon the occasions of festivals or spectacles, or to facilitate fighting in the times of civil combats. For it would appear that when the town was not united in carrying on war with its neighbour Volterra, it was disturbed by internal feuds, such as the long-standing quarrel between the Guelphs and the Ghibellines. These feuds were only brought to an end by the town renouncing its independence as an autonomous commune and becoming subject to the Republic of Florence in 1353. It was to bring this about that Dante was despatched by the Florentines as Ambassador to the Sangimignanese.

This subjection, however, appears to have had but little actual effect in curtailing the town's liberty, and the pomp and magnificence of the municipal functions for which it had always been famous continued with undiminished brilliancy down to the eighteenth century. The stage and the scenery of these pageants remain to us practically unchanged; the actors, alas! have vanished.

But yet at unexpected moments one may meet with groups perfectly in harmony with the mediæval architecture, such as the old crones in the shadows spinning with primitive distaff and spindle. And here is a picture that might have been seen when the most ancient of the towers was in course of construction—a red cart with white oxen on the steep, rough slope leading to one of the dark archways piercing the walls; the cart so overcharged with building stone that the united efforts of seven or eight men pushing and straining with the oxen can only keep it advancing by short stages. The impressiveness of the picture is emphasised the more indelibly when one learns that the stone is to construct an engine-house for an electric-light installation, the site being by the side of that most imposing of all the gates, the Arco dei Talei.



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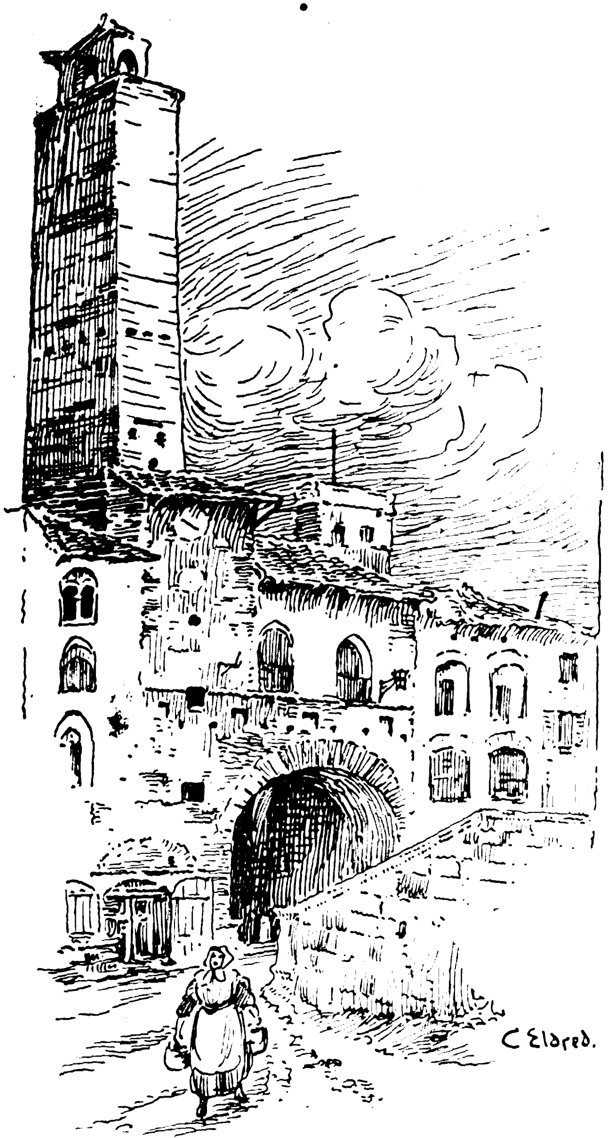
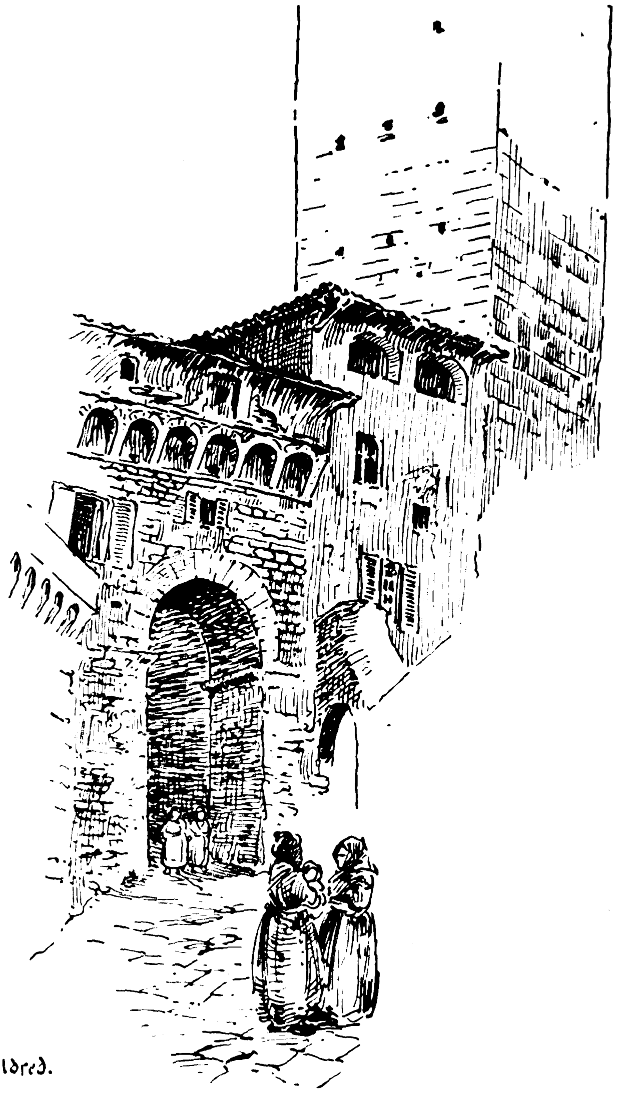


A DEVELOPMENT OF THE PALAZZI.



ARCO DEI TALEI.

ROADS AND STREETS.*

By Mr. RAYMOND UNWIN, F.R.I.B.A.

(Concluded from last week.)

IN laying down the lines of streets, therefore, the planner must have in his imagination all the time the grouping of the buildings that is likely to result, and particularly from the junctions of the streets which always form some of the points of emphasis. Neither a straight line nor a curved line will necessarily produce a beautiful street. Much will depend upon the correct point of emphasis so that the street view will compose into a satisfactory street picture, and that is equally true whether the effect aimed at is the more architectural and monumental effect commonly called "formal," or what is usually known as the picturesque commonly called "informal." If, for example, we compare the view of the curved line of Holborn with the Karolinenstrasse at Augsburg—streets which have an almost identical line on plan—we shall see how the want of harmony in the building and the lack of any point of emphasis near the centre of the picture makes of the former an ugly street, while the latter, although it contains equal variety, is by reason of a certain harmony of style and by the admirable placing of the tower, transformed into a beautiful picture.

Much controversy rages around the question of formal as opposed to informal, monumental as opposed to picturesque treatment of streets and towns, and when one sees the high degree of beauty attained by each form, it is difficult to accept either as final. If, for instance, we study a mediæval town such as Munster in Germany, and see the admirable placing of many of the churches such as the church of St. Lambertus, equally successful in the street picture, whether we examine it from an old print before the spire was added, or from a photograph since its restoration, it is very difficult to believe that all this beauty is purely accidental. That it may have been largely the unconscious result of a generally accepted building tradition owing to which each group of builders tended to do the right thing in the right place almost by accident, is, I think, probably true, and I think it is also true that any attempt consciously to reproduce the irregular effects which these skilled artists did not create, but managed to turn to good account, would be artificial and affected. But to say, as some do, that it is impossible to produce such picturesque effects, is contrary to proved fact. We have only to study the street widening and improvement scheme carried out at Stuttgart, where all the picturesque treatment of irregular streets which characterised mediæval Stuttgart has been reproduced on irregular street lines consciously greater for the purpose, to be convinced that it is, at least, possible. Personally, I think that such conscious effort at accidental irregularity is affected and artificial, and is unlikely to be the basis of any good system of town planning design. But, when handling the many irregularities that already exist in our towns, and those which must spring from the nature of our hilly country, I can see no reason why we should torture our lines into equally artificial formal effects, or neglect to create beautiful views, or to place prominent buildings where they will dominate a street picture, just because we cannot secure a formal or monumental effect in that particular instance. When, for example, we have an opportunity of opening up such a vista as that of St. George's Church from the Market Place at Nordlingen, a superb bit of non-symmetrical composition, with its dominating central feature, its balancing frame, and its harmonising unity of detail, it would indeed be folly to neglect it because the view cannot be made an entirely symmetrical one. In like manner, because in a certain very limited sense a

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* **A Paper read before a meeting of the London Society at the United Service Institution.**

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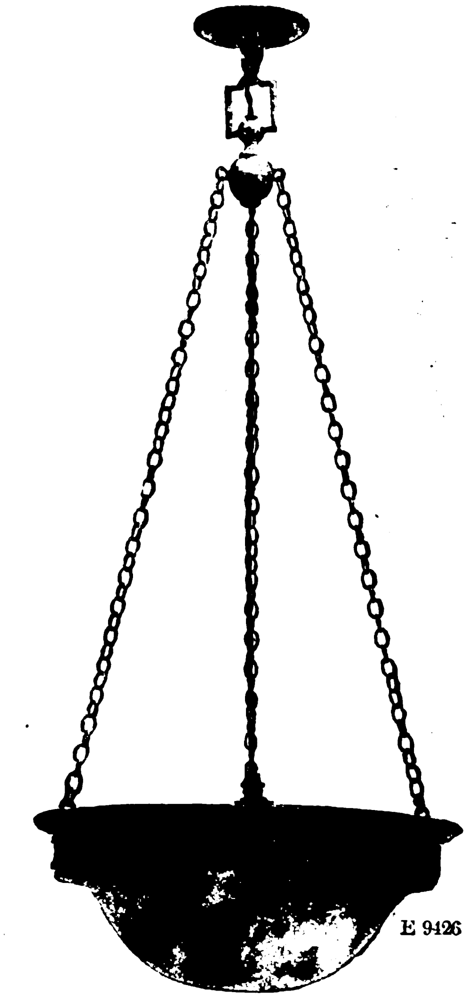

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straight line may be said to be more formal than one diverging at intervals, we should therefore produce vistas of interminable length, instead of adopting some of the many simple devices for terminating the vista in suitable lengths would seem to me to be mere pedantry.

We have spoken of terminal features and of the buildings at each side of the entrance to a straight length of street as being the most prominent positions in many streets, and for this reason the forms of road junctions have a very marked bearing on the beauty of the street views which the architects can create. The recent German school, far over-reaching the suggestions of Camillo Sitte, have studied to make all sorts of irregular road junctions which would lead to well-placed buildings, and to the closing of vistas without causing undue inconvenience to traffic. But most of these ends can be equally gained by more regular and formal treatment of the different junctions, and, in addition, the beauty of orderly composition may be secured, instead of the chance accident of a clever picturesque treatment of what, in itself, is nothing but a very awkward, irregular plan. A few examples of such treatment of corners and road junctions will illustrate this. There is a particularly valuable one in Princes Street, Edinburgh, where Leith Street coming in at an awkward angle has been treated with great success and a frame to the Calton Hill terminal picture has been created. A study of German town-planning may suggest to us many such opportunities for handling an irregular corner, but we must avoid in this case, as in all others, accepting one element, perhaps, accidental, as the cause of a successful treatment. For example, people visit Karlsruhe and see the charming effect of the street lines with horizontal mansard roof, or they pass through Bath, where some very valuable town-planning and building composition may be seen, and find there crescents and streets with long, horizontal building and roof lines, broken, if at all, merely by a parapet or low pediment. These may come back and say that beauty in streets depends on maintaining unbroken lines of plain wall and horizontal roof. But beauty will not necessarily result from such treatment. Others visit Rothenburg or Dinkelsbuhl, and they return and tell us that it is the custom of building the gables to the streets which is the secret of the beauty of these places. But, again, gables to the streets, as we may see in plenty on our suburban roads, will not solve the problem. And so, while many of the beauties of mediæval cities are associated with an irregular plan, we must not hastily conclude that an irregularity of plan is the main cause of its beauty; nay, even that in many cases it contributes anything essential.

It is interesting to compare with the bit of informal composition of street lines from Stuttgart the more formal town plan prepared in the year 1768 for Strasburg by Blondel, the last of a distinguished trio of French architects of that name. It is easy to see in the plan the same love of beautiful effects, the same care to build up beautiful street pictures, only wherever he could manage it Blondel tried to secure symmetrical groupings and orderly plans, and only accepted irregularity when symmetry could not be obtained except at too great a sacrifice. Little of this plan was, unfortunately, carried out, but we may see in other places the result of such formal composition. Examples are not wanting in London, where many quite successful bits of composition may be seen. The view of Smith Square from North Street, with its simple foreground and prominent terminal, is well composed, though the church has been likened to an inverted footstool; Charles Street also, with the Haymarket terminal at one end and the charming view of the equestrian statue in St. James's Square at the other, is very pleasing, and one has only to study the region between Regent's Park, Hyde Park, and Gray's Inn Road to find evidences that there was a period not far distant when it was thought worth while in London to apply the principles of beautiful composition to the arrangement of streets. The Amalienberg Platz in Copenhagen, with the road leading to the harbour and to the domed church in its enclosed square, is a charming bit of simple, formal composition, beautifully carried out. Such principles are just as applicable to the little streets and squares of a suburb, and may be applied to the proper grouping of cottage dwellings, both with formal treatment on regular ground and with less formal composition on undulating ground; but it is necessary to recognise that the creation of beautiful streets is an art combined of town-planning and architecture. The planner must lay down the lines right and the architect must, in his invidual design, think first of the whole street effect and be willing that his building instead of seeking to overpower all the others by reason of the loudness of its acclamation must be content to take its place in the orchestra, finding its satisfaction in the success of the melody to which it contributes.

SUMMARY.

1. We need some central authority to undertake the planning of main highways linking up the different towns and the various parts of specially populous regions.

2. We need a similar authority for London to plan the main lines of London as a whole and co-ordinate the town-planning schemes which are made from the point of view of an individual local authority. Many of the powers exist in the different Government departments, but they need bringing together and making effective.

3. We must take our arterial roads seriously as highways for inter-communication, and must reserve enough routes from being blocked to provide for considerable development of road traffic.

4. We must recognise that roads to-day carry vehicles of at least three distinct speeds, and that efficiency requires separate lines and tracks for each, especially that a separate track with a refuge walk should be provided for tramways.

5. The framework of main roads having been planned, the danger and delay points caused by crossings should be reduced as far as possible by gathering up the minor streets into secondary roads and bringing them only at fairly long intervals into the main arteries.

6. That where these junctions occur ample space for the circulation and spreading out of vehicles should be provided to facilitate passing and crossing.

7. That at all road junctions the buildings should be set back at the corners to enable approaching vehicles to be seen at sufficient distance from the meeting point.

8. That proper organic planning of road systems with a main frame of arterial highways, with secondary roads linking them up and gathering up minor systems and mere building streets not used for through traffic, will enable roads of many varying widths to be safely allowed to be used, because such a system is least liable to change. If the main and secondary roads are properly planned the through traffic will always follow them, and, provided due space is secured between the buildings for light and air, it is economical that the road width which is not wanted on minor roads should be added to the main thoroughfares, where it is urgently required.

9. That in new suburban areas adequate width on the main routes should be reserved wherever likely to be rendered needful by future growth, providing tree-planted margins of grass or gravel meantime.

10. That the principles of organic planning, varying road widths, unbroken lengths of façade on main streets opening out of view at road junctions are all in harmony with the architectural principles of town design, and will add to the beauty as well as convenience of streets.

11. That there is no reason why streets should not be either straight or curved, provided only that each type is used in appropriate circumstances and treated to develop its characteristic beauties.

12. That approaches to important buildings should have a concave grade line and not a hogs-back.

13. That where there is a dominating terminal feature to a straight street, the treatment of the road façades should be reserved; but where the terminal is absent some interest can be created by a set back of building line and dominating treatment of the corner buildings thus created.

14. That the beauty of streets of all kinds depends largely on the form of the road junctions and the treatment of the buildings there.

15. That where symmetrical and regular treatment suits the conditions it is the more architectural method of composition and should be adopted. But that where it cannot be secured, or only at too great a sacrifice, the beauties of non-symmetrical grouping of buildings should not be lost sight of.

16. That while with a bad road line or awkward junction it may be almost impossible to secure a satisfactory result, a good line and junction, though they will promote a beautiful architectural treatment, will not take the place of it.

17. That to secure beautiful streets, the architect must be willing to regard his building as a contribution to a larger street effect, and must study that it will take its place in the whole picture.

18. That we must carry the public sympathy along with us in developing any style of road and street design by helping them to appreciate the points involved.

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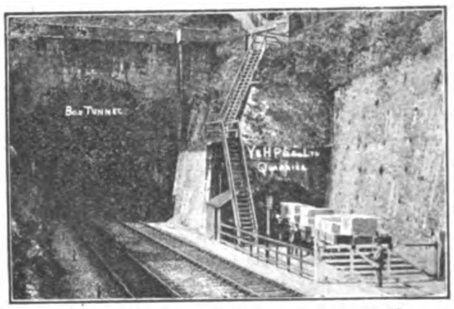

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BUILDING PROGRESS IN THE PROVINCES AND SUBURBS.

A LIST OF WORKS PROJECTED OR COMMENCED.

(N.B.—Local Authorities, architects, and others are invited to submit full particulars for insertion in this weekly list. Where districts are not entered against names of architects and builders the address is as a rule local.)

ENGLAND.

Cambridgeshire.

Cambridge.—S.A. Citadel (£2,000).

Cheshire.

Hough Green.—180 workmen's dwellings, for the Chester Corporation. Mr. P. Abercrombie, architect, Liverpool University.

Northwich.—Forty-eight workmen's cottages.

Cornwall.

Gorran.—Proposed Wesleyan Chapel, The Haven.

Penzance.—Drill Hall, &c., for the County Terr. F.A. Mr. O. R. Caldwell, architect, Victoria Square.

Devon.

Bratton Clovelly and Soutton.—Public Elementary School (for about 60 places), Boasley Cross.

Durham.

Black Hall.—House, shop, and stabling, Middle Street, for Mr. N. Wright.

Durham.—Miners' Hall, Red Hills (£21,400), for the Durham Miners' Association.

Spennymoor.—Public Elementary School (for about 500 places), Mount Pleasant.

Essex.

Chelmsford.—Coval Hall: additions and alterations for Mr. F. J. French.

House, Roxwell Road, for Mr. E. Smith.

Four pairs of houses, Vicarage Road, for Mr. W. Fincham.

Motor garage, showrooms, and house, Duke Street, for Mr. J. W. Austin.

Earls Colne.—Council School for 370 places.

Tendring.—Cottage Homes for the Board of Guardians. Mr. N. J. Dawson, A.R.I.B.A., architect, 73 Duke Street, Chelmsford.

White Notley.—Six cottages, for Braintree R.D.C.

Gloucestershire.

Cheltenham.—Houses, the Promenade: conversion into Municipal Offices (£1,100).

Hampshire.

Portsmouth.—Premises, corner of Park and Commercial Roads: rebuilding for the Gas Company.

Kent.

Dover.—Premises, corner of High Street and Tower Hamlets Road. Messrs. Worsfold & Hayward, architects, Market Square.

Herne Bay.—Children's Seaside Hostel (Middlesex Edward VII. Memorial) for 50 beds.

Lenham.—Central Sanatorium.

Lancashire.

Levenshulme.—Congregational Church, Clare Road (£5,000).

Manchester.—Sunday School and Rectory, Blackley, for Holy Trinity Church.

Leicestershire.

Markfield.—Twelve workmen's dwellings (£2,200).

Lincolnshire.

Lincoln.—Fifteen houses, Whitehall Grove, for Mr. R. L. Holland; also

Four houses, West Parade.

Two houses, Monks Road, for A. E. Parkinson Exors.

Six houses, Severn Street, for Messrs. W. & H. Hopes.

"New Bridge" Inn: addition for Messrs. Hole & Co.

Cycle Works and Showroom, St. Benedict's Square, for Messrs. Binks & Co.

Open-air School, South Park, for Education Committee.

Middlesex.

Ealing, North.—Council Senior School: western block (£5,000). Mr. Hicks, Borough surveyor.

Hendon.—Parish Church: extension. Messrs. T. S. Ullathorne & Sons, contractors, Trinity Works, Selby.

Northwood.—Proposed new Presbyterian Church.

Norfolk.

Hindolvestone.—Church (£1,600).

Northumberland.

Newcastle-on-Tyne.—Girls' School, Bath Lane; also alterations to existing Bath Lane School (£7,000).

Nottinghamshire.

Kingston-on-Soar.—Midland Agricultural and Dairy College: proposed new buildings.

Mansfield.—Ten houses, shop, and showroom, Market House Place, for Mr. J. Copestake.

Picture House, Skerry Hill, for the People's Kinema Co.

Workhouse: casual ward.

Staffordshire.

Stoke-on-Trent.—Anglican Church, Basford Road, Basford.

Two Secondary Schools.

Walsall.—Two hundred municipal houses (£40,000). Mr. J. Taylor, Borough surveyor.

Surrey.

Egham.—Council School.

Ewell.—Council School for 380 places.

Guildford.—Five houses, Stocton Road. Messrs. T. Swayne & Son, builders, Stoke Road.

Two houses, Stoke Park Farm Estate, for Mr. A. G. Taylor.

79 Stoke Road: school clinic premises, for Education Committee.

Pyrford.—School: head teacher's house additions.

Windlesham.—School: domestic subjects room.

Sussex.

Easebourne.—See below.

Horsham.—Station Hotel: additions and alterations. Messrs. H. Lindfield & Sons, builders, 42 Brighton Road.

Midhurst and Easebourne.—Twelve cottages for the R.D.C.

Warwickshire.

Birmingham.—School clinic, Great Charles Street (£3,500).

Council School, Saltley and Washwood Heath district (for 1,200 places).

King's Heath.—Council School: improvements (£2,700).

Worthing.—St. Andrew's Schools (£3,000).

Worcestershire.

Knightwick.—Sanatorium: extension (£11,600).

Worcester.—Boot factory, Boughton Park, for Messrs. J. & F. Willis, Ltd.

Yorkshire.

Batley.—Council School (for 200 places), Healey Lane.

Bradford.—Picture Hall, North Parade (for 1,400 places). Mr. H. W. Rogerson, architect, 13 Cheapside.

Goole.—Municipal Offices (£8,000). Mr. E. E. Fetch, A.R.I.B.A., architect, 20 John Street, Adelphi, London.

Howden Clough.—Council School (£2,250).

Maltby.—School chapel, near Leslie Avenue, for Rotherham R.D.C.

Mexborough.—Schools, Queen Street, Swinton: special subjects block (£1,200). Education architect, County Hall, Wakefield.

Middlesbrough.—Picture Hall. Mr. J. Forbes, architect, 43 Albert Road.

Midhope.—Council School (£1,500).

Pontefract.—Shop, Beancroft Road. Messrs. Holt & Shephard, architects, 91 Carlton Street, Castleford.

Rochdale.—Church, Sudden. Messrs. T. S. Ullathorne & Sons, contractors, Trinity Works, Selby; also

Selby.—Conservative Club: alterations (£1,000).

Sheffield.—Council School, Duchess Road: extension. Mr. F. E. P. Edwards, City architect.

WALES.

Cardiff.—Thirty working-class houses (£5,700).

Mardy.—Workmen's Institute: alterations. Mr. T. E. Richards, A.R.I.B.A., architect, Market Square Chambers, Pontypridd.

Mountain Ash.—Premises for the Met. Bank of England and Wales, Ltd. Mr. T. W. Millar, architect, Oxford Chambers.

SCOTLAND.

Edinburgh.—Grove Biscuit Factory, Slateford Road: extension for Messrs. S. Henderson & Son, Ltd.

Central Fire Station, Lauriston: alterations.

Premises, Haddon's Court: rebuilding for Mr. Duncan Stuart.

Nos. 87 and 89 Leith Street: alterations for Signor L. de Marco.

Girvan.—Picture House (for 700 places), Bridge Street. Mr. J. R. Johnstone, architect, The Cross, Troon.

Glasgow.—Kelvindale Mills, Bridge Street, Maryhill: electric fire station for Messrs. W. Cumming & Co., Ltd.

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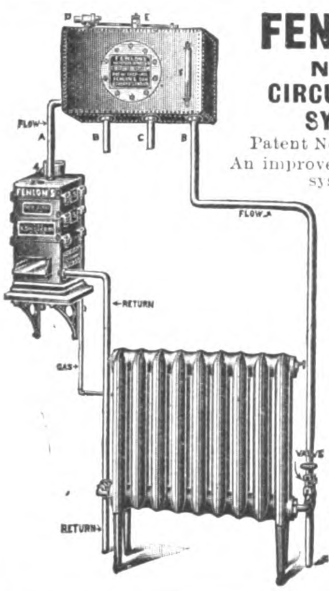

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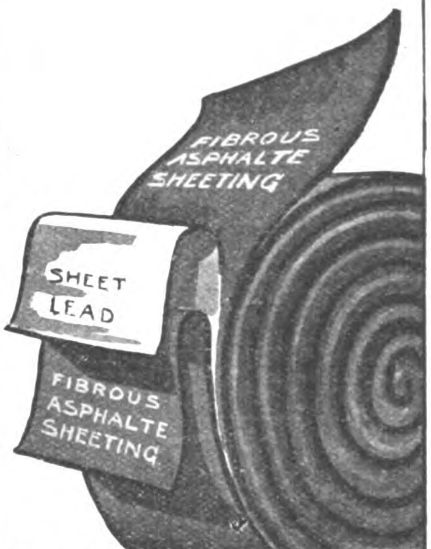

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Glasgow—continued.

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Nos. 835-837 Govan Road: additional school buildings for Archbishop Maguire and others.

Savoy Street, Bridgeton: rebuilding for the United Wireworks, Ltd.

Alterations to Works, Cathcart, for Messrs. G. & J. Weir.

No. 196 Bath Street: alterations for the Literary Club.

Nos. 96-106 Paterson Street, South Side: additions to factories for the Scottish Co-op. Wholesale Society, Ltd.

Kelty.—R.C. School.

Leuchars.—Parish Church: renovation (£1,200). Mr. Reginald Fairlie, architect.

IRELAND

Athea.—Creamery, &c., for Co-op. Society. Mr. J. D. Leahy, of Newcastle (co. Limerick), architect.

Banbridge.—Catholic and Nationalist Hall, Hill Street (£2,200). Mr. P. B. Gregory, C.E., architect, Donegall Street, Belfast. Mr. P. McAleenan, contractor (of Castlewellan).

Gibbstown (Co. Meath).—Mansion. Mr. J. F. Fuller, F.R.I.B.A., architect, 179 Gt. Brunswick Street, Dublin.

Irvinestown.—Market House: rebuilding. Mr. F. E. Townsend, C.E., architect, Enniskillen.

Youghal.—Green Park Hotel: additions. Mr. J. F. McMullen, M.R.I.A.I., architect, 30 South Mall, Cork

PATENT SPECIFICATIONS PUBLISHED JANUARY 1, 1914.

Selected by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

No. 26,068. April 12, 1913.—M. H. Judge & Max Judge, architects, 7 Pall Mall, S.W. Air inlet valve or ventilator.

28,110. Dec. 5, 1912.—François Cancalon, 37 rue de l'Entrepot, Roanne, France. Method of constructing a roof framework of reinforced or ferro-ceramics.

28,117. Dec. 5, 1912.—Robert Harrison, carpenter, and George Kohler, timber merchant, Durban, Natal, South Africa. Means for opening and closing and fastening sash windows.

28,275. Dec. 7, 1912.—B. A. Slade, 27 Charles Street, Berkeley Street, architect, and F. W. Thompson, Birkrigg, Ashford. Portable tanks, cesspools, and the like.

28,289. Dec. 7, 1912.—J. W. Cloud, 82 York Road, King's Cross, London. Flexible or articulated pipes.

28,622. Dec. 12, 1912.—E. J. Jenkins, Kimberworth, Rotherham, York. Boilers for heating water and other liquids.

28,794. Dec. 14, 1912.—W. W. R. F. Griffiths, Red House, Toodley Fields, Warwickshire, and Wm. J. Frame, 73 Robertson Street, Glasgow. Vacuum dust extracting apparatus.

28,974. Dec. 16, 1912.—Dated under International Convention Dec. 16, 1911. L. A. Jaubard, 20 rue Falguieres, Toulouse (Haute-Garonne), France. Casings and seats or rests for sanitary closets.

29,441. Dec. 21, 1912.—George Anderson & Co. (1905), Ltd., and A. G. Grice, Carnoustie, Forfar. Band saws for cutting stone.

5,054. Feb. 27, 1913.—John Wallace, 27 Medows Street, Fort, Bombay, India. Humidifiers.

5,682. March 7, 1913.—Dated under International Convention Aug. 29, 1912. Firm Gustav Eirich, Hardheim, Baden. Machine for mixing concrete and the like.

6,711. March 19, 1913.—H. D. Morgan, 743 Royal Liver Buildings, Pier Head, Liverpool. Ventilator.

7,454. March 29, 1913.—Thos. Midgley, 12 Cross Bank Street, Todmorden, York. Expansible or telescopic ladders.

7,907. April 4, 1913.—Archibald Denny, LL.D., Leven Shipyard, Dumbarton, and D. G. Anderson, B.Sc., 10 Wendover Crescent, Mount Florida, Glasgow. Composition for flooring and like purposes.

11,682. May 20, 1913.—J. Duckett & Son, Ltd., and G. F. Duckett, both of Blannel Street, Burnley, Lancs. Closets for the use of orientals.

9,275. April 19, 1913.—A. V. Christensen, 13 Gravene, Odense, Denmark. Flushing apparatus for water closets.

9,731. April 25, 1913.—Harry Smith, Abbots Ironworks, Falkirk. Cooking ranges.

10,515. May 5, 1913.—R. C. Cooper, 4 Borneo Street, Walsall. Bolts for doors and gates.

11,901. May 21, 1913.—J. W. Revy, Bridge House, 181 Queen Victoria Street, E.C. Hot-water heating apparatus.

12,781. June 2, 1913.—Thos. Priestnall, 2636 North Lawrence Street, Philadelphia. Bricks.

15,353. July 3, 1913.—Dated under International Convention July 4, 1912. L. A. Garchey, 39 rue Labruyere, Paris. Pavement lights and the like.

17,801. Aug. 2, 1913.—Dated under International Convention Aug. 3, 1912. Otto Arndt, architect, of 19B Neue Goldbergerstr, Liegnitz, Germany. End bearings for centering frames for the construction of floors and ceilings.

20,040. Sept. 5, 1913.—S. R. Parkes, Pretoria Works, Willenhall. Device for retaining windows and the like in different positions as required.

20,227. Sept. 8, 1913.—G. A. Weech, 61 Maudlin Street, Bristol. Safety clutches for extension ladders.

1,711. Jan. 21, 1913.—C. T. Lee, 9 West Side, Wandsworth Common, S.W., architect and surveyor. Construction of strong rooms, safes, armoured structures.

27,993. Dec. 4, 1912.—François Cancalon, 37 rue de l'Entrepot, Roanne. Reinforced building constructions.

899. Jan. 11, 1913.—Edward Pim, "Linden," Maghull, near Liverpool. Regulation of the temperature of stoves and the like.

Any of the above specifications may be obtained from J. D. Roots & Co.

COMPETITION NEWS

Burton-on-Trent.—The Board of Guardians are about to invite competitive plans for the erection of children's homes on land adjoining the workhouse, and to offer prizes of £25 and £10. It was decided to throw the competition open, an amendment for confining the contest to local architects being defeated by sixteen votes to six.

Guildford.—The Town Council decided at their last meeting to invite three local architects to sumbit competitive designs for the proposed municipal offices.

Correspondence

[The Editor will not be responsible for the opinions expressed by Correspondents.]

Re Kingsway and Aldwych.

Sir,—The article in your issue of the 19th ult. on the above subject is, we think, so worded as to give the impression that the design now approved by the Improvements Committee of the London County Council was prepared by us in association with Sir Ernest George. This is not the case. Sir Ernest George prepared an elevation to which our clients would not agree, and the design now approved by the London County Council was not commenced by us until after Sir Ernest George had left for India, and is entirely our own conception.

We shall be glad if you will kindly publish this letter in order to remove any misapprehension which might arise from your paragraph.—Yours faithfully,

Treherne & Norman.

Sardinia House, 52 Lincoln's Inn Fields, London, W.C.

At a meeting of the Council of the Glasgow Institute of Architects held last week, the President, Mr. A. N. Paterson, A.R.S.A., referred to the great loss which the Institute had sustained by the death of Mr. Robert Douglas Sandilands, F.R.I.B.A., I.A., a vice-president of the Institute. The meeting expressed their deep sympathy with the widow of Mr. Sandilands, and instructed the secretary to write her a letter of condolence. Out of respect for the memory of the late Mr. Sandilands the meeting decided not to appoint a vice-president in his place, but to leave the appointment open during the present session of the Institute.

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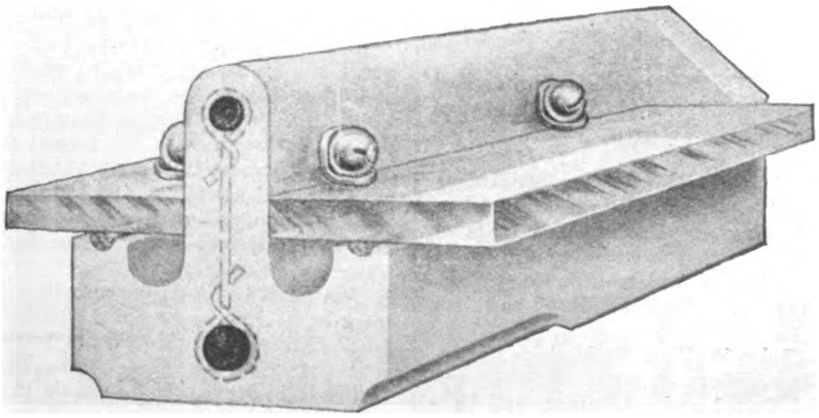

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THE ARCHITECT

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FORTHCOMING EVENTS.

Monday, January 19.

Royal Society of Arts : Cantor Lecture (1), "The Relation of Industry to Art," by Sir Charles Waldstein, Litt.D., Ph.D., at 8 P.M.

Institute of Sanitary Engineers : Paper entitled "The Need for Purer Air," by Bailie W. B. Smith, at 8 P.M.

Tuesday, January 20.

Nottingham and Derby Architectural Society : Paper entitled "Schools," by Messrs. H. J. Chetwood and C. A. L. Sutton, AA.R.I.B.A., at 8 P.M.

Wednesday, January 21.

Northern Architectural Association : Students' Meeting, at 7.30 P.M.

Carpenters' Hall : Paper entitled "History as Written in Sculpture," by Mr. T. Stirling Lee, at 7.45 P.M.

Thursday, January 22.

Paint and Varnish Society : Paper entitled "The Present Relationship between Painters and Paint Manufacturers," by Mr. F. Scott Mitchell, at 8 P.M.

OLD YORKSHIRE HOUSES.

THE specialised study of the architecture of any particular locality almost invariably affords a fertile field for investigation and results in the elucidation of particular developments which often open up valuable sources of inspiration. As an opportunity for such specialised study the domestic architecture of Yorkshire has been singularly neglected by writers and makers of architectural books. It is, therefore, with considerable pleasure the we take up the volume* which Mr. Louis Ambler has just produced dealing with the old halls and manor houses of Yorkshire. Possibly one of the reasons why Yorkshire in general, and the West Riding in particular, has been much neglected in the past is that the hard stone universally there employed in building has necessitated an absence of elaborate detail, whilst for another the character of the population prior to the general use of coal—a population whose occupation was for the most part that of combined farmer and weaver—has with the former led to the standardisation, so to speak, of the type of old houses built before the year 1700, so that on a casual glance it has rather looked as though having seen one old Yorkshire house of the sixteenth or seventeenth century one had become acquainted with the only type.

The hard sandstone of which the buildings have been constructed has also for the most part weathered to an unattractive dark grey, very different to the weathered appearance of old stone work in limestone districts. These various operative causes have led to the formation of a generally received notion that the domestic architecture of Yorkshire was not worth troubling very much about, and the general absence of large and magnificent mansions has further accentuated that opinion. It has, therefore, remained for the native enthusiasm of a Yorkshireman like Mr. Louis Ambler to devote that serious attention to the study of the domestic architecture of the county which was needed to reveal its special features and its peculiar excellences.

The domestic architecture of Yorkshire does not appear to be prolific in remains of mediæval work, although it embraces such interesting examples as Markenfield and Tanfield. There is also a general lack of half-timber buildings, so that the old houses built before the year 1700 are almost entirely stone-built examples of sixteenth and seventeenth-century domestic architecture.

Mr. Ambler has adopted the very sensible plan of first of all describing the general treatment of features with special reference to those peculiarities characteristic of the county, and then he follows with a description of a large number of houses which are illustrated.

Amongst the features which receive peculiar treatment in Yorkshire are lintel-headed doorways, in which the outer mouldings are carried up and shaped in various forms of curves and other devices on the surface of the lintel. In England this treatment seems to be peculiar to Yorkshire and Lancashire, but is not at all uncommon in work of the same date in Portugal, the reason probably being identical in both cases—the existence of an ample supply of large and very hard stone, making a lintel treatment with simple ornamentation the most logical and suitable.

It will be noticed particularly in the smaller houses how very general is the employment of many mullioned windows. The explanation of this is the fact to which we have already referred—the general activity of the farmer class in weaving. It would appear that almost every farmer, at any rate in the West Riding, combined weaving with agricultural pursuits; and, as this occupation would in this combination of activity necessarily imply that a considerable portion of the indoor labour was carried on during the dull months of the year, ample light was necessary in order to permit of the industry being prosecuted successfully. Thus we may account for what Mr. Ambler describes as the most distinctive feature of the old Yorkshire houses of the latter part of the sixteenth and the whole of the seventeenth century, that is the fenestration. Nowhere else, says he, "is there such a variety of windows as in the examples of that period in the three Ridings, especially the West Riding."

It is interesting to find in Mr. Ambler's book that the plaster work in the old Yorkshire houses bears evidence of great refinement, as well as of fertility of invention, and at the same time appears free from any very marked foreign influence. That is to say, it is evidently the work of native craftsmen who have left upon it the impress of their own individuality and not

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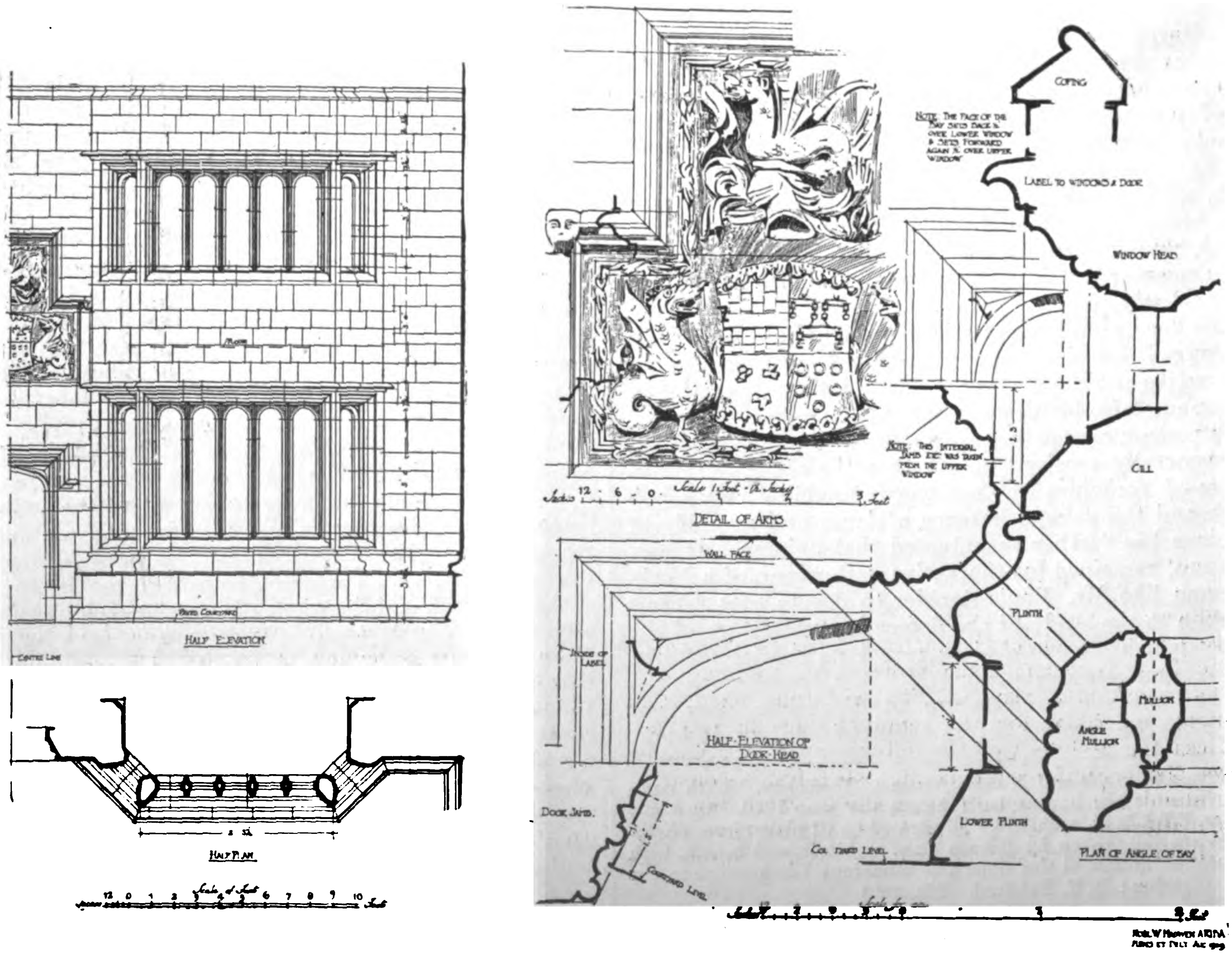
* *The Old Halls and Manor Houses of Yorkshire.* With some examples of other houses built before the year 1700. By Louis Ambler, F.R.I.B.A., architect. Illustrated by 91 plates from photographs specially taken by Horace Dan, architect, and others, with 20 plates of measured drawings and numerous illustrations in the text. (London : B. T. Batsford. 35*s.* net.)

[From "The Old Halls and Manor Houses of Yorkshire."

BURTON AGNES HALL

[From "The Old Halls and Manor Houses of Yorkshire."

KIDDAL HALL.



Half Elevation
Centre Line
Half Plan
Scale of Feet
Coping
Note. The face of the bay sets back ½" over lower window & sets forward again ½" over upper window
Label to windows & door
Window Head
Cill
Note. This internal jamb etc. was taken from the upper window
Detail of Arms
Scale 1 inch = 1 foot
Wall Face
Plinth
Mullion
Angle Mullion
Lower Plinth
Plan of Angle of Bay
Half-Elevation of Door-Head
Door Jamb
Hood of Label
Ground Level
Courtyard Level

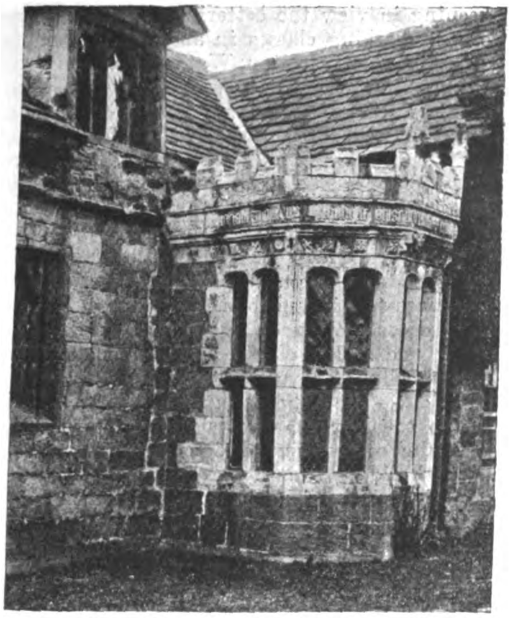
[From "The Old Halls and Manor Houses of Yorkshire."

DETAILS FROM SKIPTON CASTLE.

that of wandering journeymen from Italy or France, or even from the Low Countries.

The woodwork which Mr. Ambler illustrates from Yorkshire houses does not strike us as being different in character from that of the same period in other parts of England; the characteristic treatment of the Renaissance in the sixteenth and seventeenth centuries appears to obtain in Yorkshire with very similar character to that which prevails elsewhere. This is not to say that the woodwork is without interest or without originality and piquancy of treatment, nor that it invariably follows a general type in composition. In this respect it of course agrees with the characteristics of work in other parts of the country.

The volume which Mr. Ambler has prepared is not only praiseworthy for its critical treatment but is a delightful album of illustrations of the finest examples, such as Burton Agnes, Burton Constable, Woodsome, Fountains, and Temple Newsam, as well as of the smaller manor houses and even of the farmhouses. The value of the book is enhanced by the inclusion of numerous measured drawings, as well as the excellently reproduced photographs which we have become accustomed to expect in publications of the house of B. T. Batsford.



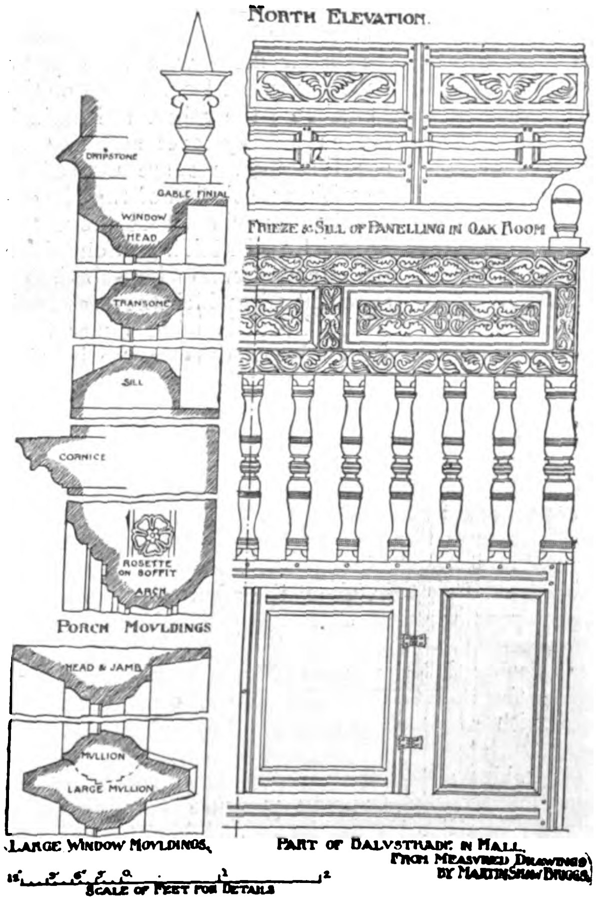
[From "The Old Halls and Manor Houses of Yorkshire."

KIDDAL HALL.

NOTES AND COMMENTS.

After unsuccessful attempts on two previous occasions a quorum was obtained for the business meeting at the Royal Institute on Monday last, to further discuss the proposed revised scale of charges and, as is usual when a number of individuals try to amend the drafting of a document, slow progress only was made and the proceedings were not without humour. One principle adopted is not, we think, altogether creditable to the profession or tended to increase the respect of the general public for the ability of architects, and that is the recognition of the introduction of consultants when, in plain English, the architect is not sufficiently expert in all the multifarious sciences and technical trades that play a part in modern building. As one member pointed out, the adoption of this principle will be that the more incompetent the architect the more will his client have to pay in fees to expert consultants—and, we may add, the less work and responsibility will the incompetent architect undertake for the remuneration he receives. The less the architect of the future, on this principle, knows about reinforced concrete, steel-frame construction, illuminating engineering, heating, ventilation, and other matters as to which expert consultants have arisen or will arise the better he will be paid. Surely the proper line to take is to follow the lead of our colleagues in the United States, raise the scale of an architect's payment because of the extended modern application of science to building, and let him pay the consultant whose advice he needs or, as many American architects do, keep specialists in his own office.

The allegation of the existence of a building-trade Trust appears to be based upon the formation of the National Light Castings Association some eighteen months ago. Such an association may prevent ruinous undercutting in price on the part of our British manufacturers, and in this direction do good, by reducing the temptation to get even by scamped work, but combines in building-trade material have only a small margin to play with before our friends on the other side of the Channel and the North Sea will be in the market. It does not need for example a very great advance in the price of bricks for the Belgians to find it profitable to export and undercut even Flettons. There have been cases in the past of merchants in building material importing foreign goods and selling them as English and, of course, they would not like organisations which included in their programme the restriction of the British market to British manufactures.



[From "The Old Halls and Manor Houses of Yorkshire."

DETAILS FROM SWINSTY HALL.

A writer in the *Times* of last Saturday writes very sensibly on the subject of formal gardening, and without violent partisanship leads the general reader to a recognition of the logic of the formal garden as an adjunct to the house. At the same time the distinction between the definitive and the abusive employment of the term "formal" to gardening is pointed out, and also the unwisdom of the attempts to combine the artificiality of carpet-bedding and ribbon borders with a presumed naturalistic lay-out.

The nature of trees is to grow, and this natural characteristic is one that is apt to cause trouble in the laudable endeavour to maintain arboreal avenues in towns. In the Roundhay residential district of Leeds the local authority recognised years ago the aesthetic importance not only of preserving its pleasantly wooded natural beauty but of adding to it by planting avenues of young trees. A complaint is now made that trees are being destroyed in order to effect what is politely called "improvement." The fact is that, in the neighbourhood of Oakwood, the Corporation Parks Committee, in pursuance of a new policy, are making a clearance of many of the older trees with the intention of planting some of younger growth, and thus lightening the darkness of certain houses and securing more uniformity. Unfortunately Oakwood Avenue is likely to lose much of its former sylvan character by this denudation, and elsewhere in the vicinity the disappearance of familiar trees is altering the aspect by no means for the better. The aim, professedly, is to preserve as many of the old trees as possible, to keep all in good order, and to plant afresh wherever opportunity offers. It is, in short, a new development of Corporation enterprise, and one outcome may be seen in the laburnum borders of Coldcotes Avenue, near Harehills Park. The laburnum and the lime are the trees most favoured, inasmuch as they do not grow to any great height; but where plenty of space is available sycamores are preferred. The main objection to the rather fine trees which have been sacrificed was that they were growing too big or would be made ugly by trimming; and in one case removal was necessitated because of weakness at the root. So far as uniformity is an object, however, the removal process does not commend itself to the lover of Nature.

We have before expressed our belief that the housing question is likely to be better dealt with by County Councils than by either a Government Department on the one hand or District Councils on the other, the outlook of the former being not sufficiently local and that of the latter too much so; therefore, we are pleased to know that in accordance with a resolution of the Executive Council of the County Councils Association, the Public Health, Housing and Small Holdings Committee of that body have framed a memorandum for submission to the various County Councils, in which they set forth the methods by which the Councils may, under their existing powers, effect an improvement in the housing conditions within their areas. The Committee summarise their recommendations as follows:—

That, in view of the urgent need of improving the housing accommodation throughout the country, the County Councils should make all possible use of their existing powers by

(1) Directing the County Medical Officer of Health to make a thorough independent investigation of the housing conditions throughout the administrative county, and supplying him with sufficient qualified assistance for the purpose.

(2) Seeing that the County Medical Officer of Health provides the County Council and the Local Government Board with a complete report on every aspect of the case.

(3) Taking action for the remedy of insanitary conditions, firstly, by bringing pressure to bear on the District Councils, by making complaints to the Local Government Board or otherwise, and, secondly, if that fails, by undertaking the duty themselves.

(4) Taking similar action with regard to the provision of new houses for the working classes generally.

(5) Using to the full their powers of providing houses for special classes of the people, *e.g.* small-holders, teachers, police, and roadmen.

(6) Promoting the formation of and assisting co-operative building societies.

COMPETITION NEWS.

BIRMINGHAM.—Mr. Charles E. Bateman, F.R.I.B.A., has made his report in the limited competition for the church of St. Germain, proposed to be erected at the corner of Portland and City Roads, Edgbaston. The Council have adopted the award recommending the design of Mr. Edwin F. Reynolds for execution, and awarding premiums of ten guineas each to Mr. W. H. Bidlake, Messrs. Harvey & Wicks, Mr. Holland Hobbiss, Mr. Arthur S. Dixon, and Mr. J. L. Ball.

BURNLEY.—Mr. Samuel Taylor, architect, Manchester Road, has had his plans accepted in competition in connection with the extension of Mount Olivet Baptist Church and the erection of new schools.

FARNBOROUGH (Hants).—The Urban District Council are offering twenty guineas as a premium for designs for artisans' dwellings. Full particulars may be obtained from their engineer and surveyor, Mr. J. E. Hargreaves.

HYTHE.—The General Purposes Committee recommend that premiums of £50, £25, and £10 should be offered for the three best competitive designs for a proposed concert hall to accommodate 500 seats.

IRELAND.—At a conference under the auspices of the Housing and Town Planning Association of Ireland, in Dublin, it was stated that Lord Aberdeen had offered a prize of £500 for the best plan for the reconstruction of Dublin, keeping in view the bettering of housing accommodation for the working classes in and around Dublin.

LONDON.—The Metropolitan Water Board have selected the following six architects to prepare competitive plans for new central offices. Messrs. Brown & Barrow, Mr. Edwin Cooper, Mr. H. O. Ellis, Mr. E. T. Hall, Mr. H. T. Hare, and Messrs. Warwick & Hall. The General Purposes Committee have invited the President of the Royal Institute of British Architects to nominate a gentleman to act as assessor.

MIDDLETON.—The Finance Committee have decided to recommend the appointment of Mr. Hastwell Grayson, of Liverpool, as assessor in the competition for a Town Hall to be erected at a cost not exceeding £18,000, and that awards of £100, £60, and £40 be offered for the designs placed first, second, and third respectively.

NOTTINGHAM.—The City Council, last week, appointed a Committee to consider the provision of a town hall, with power to invite competitive designs. It is suggested that the proposed building should be erected on the site of the Exchange. The sum of £250,000 was mentioned in the course of the discussion as being a sum which would provide a worthy building.

ST. ANNES.—In connection with the scheme for laying out St. George's Gardens and the construction of a boating lake and bathing pool, for which prizes of £100 and £50 were offered for the best plans submitted, the Urban District Council have awarded the first premium to Mr. F. Harrison, of Accrington and Lytham, and the second to Mr. Walter R. Sharp, of St. Annes. The estimated cost of carrying out Mr. Harrison's plans is: Garden scheme, £5,834; foreshore scheme, £9,456.

SCOTLAND.—Greenock Corporation, last week, considered a joint report by Mr. James Chalmers, architect, Glasgow, and Mr. Robert Millar, master of works, on the housing scheme to be carried through on the site of Roxburgh Street Sugar Refinery. It was agreed to invite competitive plans for 18 tenements to contain 162 two-roomed houses, at an estimated cost of between £30,000 and £40,000. This will provide accommodation for a population of 1,080. The rentals are not to exceed £8 5*s*.

ILLUSTRATIONS.

UNION OF LONDON AND SMITHS BANK, LTD., LINCOLN.

BANKING corporations are so generally prone to erecting new premises for themselves and demolishing any old ones on the site that the conversion of a fine timber-and-plaster house into a small branch bank has an altogether unusual interest. Externally, this fine example of early work in Lincoln has merely been repaired. Internally, the architects restricted themselves to renovations and the continuance of the timber construction where necessary. The contract was carried out by Mr. H. Jackson, of Eastgate, Lincoln, under the direction of Messrs. Scorer & Gamble, architects and surveyors, of that city.

TOR SIDE, HELMSHORE, LANCASHIRE.

THIS house, recently completed from the designs of Mr. John C. Procter, A.R.I.B.A., is of particular interest from the use made by the architect of the opportunity presented by the site to form a veritable "sunk garden."

SAN CRISTOFORO, LUCCA.—SAN ANDREA, PISTOIA.

THE details we give from these buildings are in further illustration of the article by Professor Alfredo Melani, which appeared in *The Architect* of January 2.

BUILDING—A CREATIVE CRAFT.*

By Mr. M. H. Baillie Scott.

In choosing as the title of my address "Building—A Creative Craft," I have been at some pains to avoid the term architecture and the term art, and though the title of an address is perhaps not a very important matter, no doubt you will be inclined to wonder why I do not wish to talk to you about architecture or about art. The reason is that both these terms beg the whole question we have to deal with. What I describe to you as architecture may not, after all, be architecture at all, and what I describe to you as art may not be art. But if I speak to you of building I am on solid, undisputed ground. And, further, just as a plant can only grow out of the soil, so architecture can only grow out of building. I have always believed that the only kind of architecture worth having is that which springs unconsciously and inevitably from a universal and common habit of good building. In the modern world our common habit of building now finds its normal expression in houses and cottages which are a disfigurement to the country. So well is this recognised that when our house agents tell us of unspoiled country places, we know without further explanation that an unspoiled country place is one where there are no modern buildings. So that while we recognise as a well-known fact that modern buildings spoil the world, we also know that old buildings, so far from spoiling it, add to its interest and beauty.

Now this seems to me an astonishing and deplorable state of things, and if you think so too, you will no doubt realise why I want you to think of building rather than architecture—to think of the means rather than the end—the race rather than the goal—or, as Meredith puts it, why I want you to

"Leave to bloom the flower of things
And dig about the roots."

Since we are agreed that the buildings of mediæval times beautified the world instead of spoiling it, it would seem reasonable to inquire what were the methods employed by the builders of those days which led to such good results. As you know, the various building crafts were then associated in the form of guilds, which were companies formed, not for the purpose of acquiring profits and paying dividends, but for the purpose of studying the mysteries of their respective crafts. And the old buildings were the outcome of the combined and unaided efforts of these bands of craftsmen. The designer as a specialised individual was unknown, and just as the modern painter still designs as well as paints his own pictures, so these old craftsmen worked not with their hands alone, but with head and heart, too. The architect, as a highly specialised and gentlemanly person ruling lines in an office, had not yet been evolved. Design was still intimately interwoven with the technique of the building. Draughtsmanship, as an art by itself, to which nowadays the mere building so often only affords a disappointing anti-climax, and all the paper deep beauties which follow in the train of draughtsmanship—all this paper world which constitutes the atmosphere of the modern architect—was a thing unknown. The creators of buildings then dealt at first hand with the actualities of structure, and derived their inspiration from that intimate knowledge of materials which can only be obtained by constant association with them.

If, then, we admit that the ugliness of modern building is, at least to some extent, the result of modern methods of production, what, it may be asked, is the first step to improve these methods? In existing conditions an architect here and there may succeed in producing a building which has some of the qualities which belonged to the old work, but good results can only be obtained by fighting a losing battle with all the lifeless and mechanical ways of the modern workman. Instead of such hard-won, isolated victories, what we need, and what we hope for, is a common habit of building which shall involve no struggle at all with the traditional customs of the workman. The first step in reform would obviously consist in the education of the craftsman in the mystery of his craft. I use the old term "mystery" in this connection, because if it is once fully realised that the mystery is there, half the battle is gained. You have only to consider the peasant arts of the past to realise how craftsmanship can express the soul of a man, and what strange and mysterious beauties it can possess though practised by quite illiterate and simple folk. Perhaps the term education in this connection should be avoided, for it implies to the modern mind little else but book learning, and in modern building it is the text books on the subject which are responsible for the general conception of the scope and possibilities of building construction.

The education of the craftsman should reveal to him something of the possibilities of the art of building. He should understand that materials should be handled sympathetically, and just as his own education, ideally considered, should consist in bringing out all that is best in him, so he in his turn should try to educate the material he uses by bringing out its character, rather than by effacing its qualities in his aim to secure mere mechanical accuracy.

We now turn to the education of the architect. I think you may be right in dissembling your love for him, but I see no reason why you should kick him downstairs. I do not agree with those reformers who claim that the architect is an unnecessary person. So far from that it is to the architect I look for deliverance. All that has been done of late years to improve the building art has been done by architects, and in losing him you lose the only chance of improving the existing state of things. All that is wrong with the architect may easily be explained by the obvious defects in his education, and nothing more urgently demands reform. If you take the case of the engineer, you will find that, as a matter of course, his training includes a period of practical work. Very often this period extends to four years, and for the whole of that time he takes upon himself the form of a workman—doing the same work, keeping the same hours, and wearing the same dress, and if this is needed in engineering, and if it leads, as it *does* lead, to the production of a type notable for practical efficiency, how much more is it required in the case of the architect? Why should he alone be left almost entirely engrossed in his paper world? Why should his capacity as a draughtsman be alone seriously dealt with, and his capacity as an architect left to the happy accidents of his own personal initiative, so that in the end he may know all about the exact proportions in which temples were built in Greece 2,000 years ago and very little as to how houses and cottages may be built for us here to-day? The architectural school, with its drawing-boards and T-squares, with its students engaged on impossible and impracticable schemes—designs for Royal palaces and commemorative monuments—dabbles a little in an amateur way with practical work. A lecturer gives a demonstration, a building in progress is visited, and though this is good as far as it goes, it can never replace the first-hand knowledge of the work gained by actual continuous practice in a trade. And what happens when the student is asked to design a cottage? In a recent competition I believe there were 700 designs sent in and they were all rejected by the judges. Surely there must be something wrong with a system which leads to such results as that. For you see we can do very well without Royal palaces, and commemorative monuments are apt to become a weariness; but cottages well conceived are not only necessary, but capable of being a continual joy. Let the student, then, first learn to build rather than to draw. Let him work side by side at the bench with the workman as the engineer does. Let him for a year or two become a workman, and so get to understand the workman's point of view. In such a method of training we shall obtain an approximate reconstruction of that Guild system which led to such wonderful results in the buildings of the past, and the architect, pushed back into his proper place, becomes again the master craftsman working in sympathy with his fellows. And the effect on his subsequent work of this practical training will be profound. When he designs a cornice with a continuous repetition of dentils, or perhaps an egg-and-dart enrichment, which even as a draughtsman he finds too wearisome to continuously represent, will he not have some sympathy for the craftsman and hesitate to impose on him a task so monotonous? Like the Scribes and Pharisees, the modern architect is too often engaged in placing on other men's shoulders burdens which he himself will not touch with his little finger—forcing them to execute work which he cannot even endure to draw on paper, and though a proportion of dull work may be inevitable, decorative work, unless it gives pleasure to execute, is better omitted, and we ask too high a price for the intellectual exercise of the specialised architect when he makes the craftsman his lackey. And surely the inevitable result of the practical training of the architect in the crafts will be the automatic disappearance of the Renaissance tradition. The distempered dreams of the dilettante professor will vanish at the wholesome touch of the realities of structure. All the cobwebs in his brain engendered there by poring over books will be swept away. He will begin to take delight in colour again, and all things bright and beautiful in the world. He will look back with horror at all those dismal funereal monumental structures with which it is now the fashion to beautify London as the phrase goes.

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* A lecture delivered on Wednesday, January 7, at the Carpenters' Hall.

Surely this is not merely an extravagant dream. If the engineer can become for a time a workman, cannot the architect likewise condescend? And such a course of training would serve at least to discourage all those who are attracted to the architectural profession because there are no compulsory examinations and because they are pleased by the prospect of making pretty drawings in a comfortable office. No longer will the young architect be helpless before the workman who tells him as a practical man that what he wants "Can't be done." The architect will be able to take the tools from the man's hand and show him that it can be done. We are much exercised nowadays by the question of registration, but unless the qualifications for registration include practical training, and merely consist of paper examinations, we shall run a risk of registering the incompetent.

In the training of the workman, then, one wants to infuse a higher ideal than that of mere mechanical accuracy. We want to show the bricklayer, for instance, what possibilities of beauty there are in mere plain walling if the right kind of bricks are used in the right kind of way. We want to show the carpenter how much of the qualities of timber can be expressed by the right kind of workmanship, and that the final artistic appeal of the building does not merely depend on the architect's work and what decorative frillings may be added by him, but is built up as an inherent part of every stone, every brick, and every piece of timber in it. And so as every workman should have something of the artist in him, the artist who designs the structure should have something of the workman. The architect must climb down a little and the workman climb up before they can harmoniously co-operate to produce a building which shall have behind its appeal to us not the expression of one man's thought merely, but the irresistible momentum of many varied minds. If we consider the buildings of the past, is it not true that those which delight us the most were the products not of a single mind, but of a whole company of minds harmoniously blended, each in its degree contributing to the final glory of the whole? And we who love the building work of mediæval England have no special delight in tracery and cuspings as opposed to Classic columns and pediments. We merely want a tradition of building which shall express, as Gothic architecture did and as Renaissance architecture does not, the combined intelligence of a whole group of workers which shall leave room for all to take a share in the creation of whatever beauty may be achieved.

Renaissance architecture represents the work of a master and his slaves—of a lord and his lackeys—the materials used, with all their varied possibilities of expression in the hands of intelligent craftsmen, are ruthlessly subordinated to the arbitrary designs which the specialised architect copies out of books. The individuality of the craftsman is lost. He is collectively referred to in the term "labour," and if he groans under the burden of his servitude we hear of labour unrest. In urging, then, that the architect should take his place in co-operation with labour, not only are we giving to building that reality which results from the expression of the workman's art, but we are surely doing something to solve the social problems of our day—something to make the worker more satisfied with his task, something which will give back to labour again its lost heritage.

Let us assume that the architect, emancipated from the thraldom of the drawing board, has stepped outside that into the larger world of building. Let us think of him taking his place again as a master craftsman with his mind disentangled from what is called architecture and all those dreary methods of what is called building construction. In this new-found liberty of his I like to think of him as first occupying his mind with the lost art of cottage building: we are threatened in the immediate future with a considerable development in that direction, and we sometimes wonder, not without misgivings, what these cottages are going to be like. We have at present in our midst the type of cottage produced by a Government department, the official cottage, uncompromising, utilitarian, and hideous, such as the cottages recently built in Ireland. These represent the official idea of what the homes of the people should be. Then we have the jerry-builder's cottage. He panders to all that is vulgar in the popular taste—a bay window with a sheet of plate glass, stone framed. Violence of vivid brick and purple slate—another horrid picture. And then the garden suburb. The little impudent cockney villa which tries with all its might to look like a real old-world cottage, and conspicuously fails. Or, again, we have the cottage which, unabashed, glories in its cheapness, what appears to be a hen-house with a chimney stack, perhaps, or a structure in which the struggle to get the price cut down to the "ideal figure" has ended in the evolution of a living-room which appears to consist mainly of a bay window and ingle nook. And then we are threatened with the standard cottage, so that we may look forward to a time when, instead of all that immense variety of local character in the country cottage, we shall expect to find, whether in the mountains of Wales, the Sussex Downs, or the broad levels of the Midlands, still the same standard cottage officially approved. Surely it may be hoped that our architect-craftsman, with the help of his fellow-craftsmen, may succeed in finding the secret of that better way of building which has resulted in the past in the charm of the old English village. His success will depend largely on the extent to which he can put himself in sympathy with the occupants of these little homes. Let him imagine always that he is building a dwelling which he is going to occupy himself. He will always find that a most useful attitude to adopt. The architect who so cheerfully and ruthlessly sacrifices the minimum standard of comfort, to which the humblest are entitled in their dwellings, in his attempt to achieve the cheapest possible cottage would probably work on very different lines if he lived under the rule of some humane Mikado, who, fitting the punishment to the crime, condemned him to live in it himself and to bring up his family in its minute compartments. I have dwelt so far on cottage building because I believe it to be true, as a correspondent in the *Times* puts it, that until we can build cottages both naturally and beautifully we shall not be able to build noble churches and palaces. The cottage problem is the root of the whole problem. Take care of your cottages and your palaces will take care of themselves. Take care of your building and your architecture will take care of itself. One of the greatest men of our time—the President of the United States—has wisely said, "A nation is no greater than its rank and file." And this is supremely true of building. As long as our ordinary rank-and-file building is what it is to-day it is useless to indulge in ambitious and expensive schemes. Let us learn to build. Let us try if we cannot stop disfiguring the country with our work.

It is a common fallacy to suppose that only large buildings are worthy of serious consideration by the architect. No doubt the influence of Rome makes itself felt here. We visit the Coliseum and we are impressed by its size. What does such a building express besides a rather vulgar pride in mere magnitude? Given an army of slaves, and there is little difficulty in producing a building large enough to "split the ears of the groundlings." The kind of appreciation it commands is the same in kind as that which is evoked by a display of fireworks or by an airman who flies upside down. It is something unprecedented—something which breaks all previous records. The abnormal development of a giant chrysanthemum at a flower show evokes a like admiration. It is large, it is immense, and therefore better than a similar bloom of normal size.

It is this ponderous elephantine quality which is the unfailing mark of much of our modern architecture, and our shops, theatres, and banks all alike tend to appear portentous tombs. But while our architects impose these dreary tasks on the craftsman, forgetting all that is bright and beautiful, we shall find a painter like Turner or Whistler producing a masterpiece on a few square inches of paper. And what little gems of the building art may still be found in old cottages and village churches, and developing out of these, the larger buildings in the form of manor houses and cathedrals, do not appeal to us by their size alone. We love them because we perceive there the inspired and joyous labour of a community of workers. We cannot produce work of that kind by any authority exercised from above. No minister of fine arts will give us good building again. We have too much evidence to show that art in any field is generally officially condemned and neglected in its own time and country. No; the best we can do for the lily of art is to cultivate the soil for its growth, give it air, and then leave it alone without official interference. So far from wanting a minister of fine arts, one is rather inclined to echo Carlyle's wish that the devil may fly away with the fine arts; we hear too much of the fine arts altogether. We suspect they are not so fine as they would have us believe, and we would rather see more of ordinary everyday arts, for it is only out of these that art which is really fine can grow. In a recent correspondence in the *Morning Post* on what is described as the Classic inspiration, but what may perhaps be more justly termed the Classic imitation, in architecture, we find an edifying confusion of counsels. We have one eminent authority saying we must go to Greece for our inspirations. Well, we have been to Greece, and we have Euston Station as a typical example of the result of that excursion. Another is all for Rome. We have been there, too, and our English soil and our English souls alike groan beneath the burdens we have imported from that alien shore. You may see one of the latest of these Roman buildings in the shape of a great London shop where enormous Ionic columns of apparently solid stone rest on sheets of plate glass—a kind of ponderous elephantine architectural joke. And then, again, with less insistence, we are advised to seek our inspirations in Gothic work. We have tried that too, and we have the Law Courts. And all the time that we have been passing from one colossal mistake to another colossal mistake we have still our old villages and the disappearing remnants of our old towns as an object-lesson of that simple and unaffected beauty which was gained by the work of men who merely worked out their problems in direct and obvious ways, and who went neither to Greece nor Rome, but obtained their inspirations from their materials and the conditions of the particular problem in hand.

Is it not time that we gave up our trafficking with architectural styles, and, concerning ourselves with mere building, allowing whatever beauty may grow out of that to occur as the gods permit? For the building of the future we want neither Classic nor Gothic, neither Beaux-Arts nor Bizarre, nor any style, but rather whatever forms may naturally develop like a flower out of plain building. This plain, everyday building is the matter of prime importance to us now, and those engaged in it, to ensure success, must all alike—designers and, as well, craftsmen—be steeped in that intimate knowledge of the materials they use. Once our point of view is changed, and we look at things from the workshop rather than the drawing office, all kinds of possibilities which never can suggest themselves to the draughtsman leap to the eyes. We get an entirely new set of values. Things that look uninteresting on paper become full of significance in the real, and beauties on paper evaporate into insignificance when translated into reality.

On paper we are immensely concerned with an exact symmetry. To torture our plan so that a doorway becomes exactly central fills us with satisfaction. In the actual building we realise that our work becomes more vital if it does not fulfil such a mechanical ideal. It does not seem to matter there if our angles are exactly right angles, and everyone who has measured an old building will be astounded at the variations from exactitude, which are only betrayed by the transference of the plan to paper. On the other hand, all sorts of qualities which cannot be shown on paper jump into prime significance. The textures of surfaces, as well as all those subtle irregularities which naturally follow from handwork done in a natural way, combine to give character, interest, and charm, instead of lifeless, dull precision. If the demand for social regeneration in an artificial age finds its expression in the cry "back to the land," reform in the architectural world may well be heralded by the cry of "back to building." And out of that creative art will spring again. For the whole business of the artist in whatever field, but of the artist in building in particular, may be summed up in three words—the words of a modern Italian writer—"Create with joy." Do not be content to merely imitate with care, or conscientiously repeat the parrot phrases of others. Man is something more than a parrot, something nobler than an ape. And this godlike creative faculty of his is his most precious gift. It lies dormant in all of us, and the exercise of it gives a deeper and more satisfying joy to the soul than any other activity of man. Once it is practised again, all the so-called pleasures of life dwindle into insignificance beside it, and the craftsman, once again a free agent, working in brotherhood with others, need envy no man's lot. And with this maxim I should like to couple another precept, again concisely expressed by the same writer, "Defend beauty." See to it that the beauty of nature is reverently dealt with at your hands and those of others. Do not let our old villages and towns be defaced and degraded by cheap and ugly buildings, and guard from the destroyer's hand all that remains to us of the beauty of old buildings.

May I, in conclusion, express the hope that whatever you may remember or whatever you may forget, you will at least engrave on your minds these two watchwords, "Create with joy," "Defend beauty"?

THE SOCIETY OF ARCHITECTS.

THE Report of the Council for the year ended October 31, 1913, principally deals with matters concerning only its own members, but the following extracts are, in our opinion, of wider interest:—

Code of Ethics.—The following clauses are issued only as a guide, and not as a denial of the existence of others equally important. The several items indicate offences of varying degrees of gravity, and suggest that their infringement, or any other breach of professional etiquette, will be dealt with accordingly by the Council under the powers conferred upon them under the Articles of Association.

(1) He should act in his professional relations with his clients in a fiduciary manner, and his charges to such clients should be based upon the schedule of charges adopted by the Society. The fee paid by the clients should constitute his only remuneration for such work, except as provided under Clause 8.

(2) He should not while acting in a professional capacity have any interest financial or otherwise in any of the building trades or in any firm or business with which he may have occasion to deal on behalf of his clients, without disclosing the fact to such clients.

(3) He should not advertise for or otherwise improperly solicit professional work.

(4) He should not participate in any open architectural competition the conditions of which are not in accordance with the regulations approved by the Society, nor should he participate in any local or limited architectural competitions to which exception is taken by the local Architectural Societies or by a majority of the eligible competitors.

(5) He should not be the medium of any payment made on behalf of his clients, except by their special request. He should only issue certificates or recommendations for payment by his clients.

(6) He should not attempt to supplant a fellow-architect after definite steps have been taken towards his employment.

(7) He should not compete for employment on the basis of professional charges.

(8) He should not receive, directly or indirectly, any royalty, gratuity, or commission on any article or process used on the work which he is carrying out for his clients unless and until such royalty, gratuity, or commission has been authorised in writing by his clients.

(9) He should not anonymously criticise in public print the professional work or conduct of another architect, except when acting in an editorial capacity.

The Society is frequently applied to by members for forms of contract and other professional documents, and with requests that the Society shall publish their own forms. Your Council consider it inadvisable to have, for instance, duplicate and possible conflicting scales of charges, and that it would be very much better from the point of view of professional unity if the documents now issued by the R.I.B.A. and adopted by the Society could be issued also by the Society. Your Council approached the Institute some time ago with a suggestion that the Schedule of Charges and Competition Regulations which had been adopted by the Society in principle for many years, might be published in the Society's *Year Book*. A courteous intimation was received from the Institute to the effect that they would welcome the publicity thus given to these documents. A further suggestion to the Institute that this principle might be extended by the issue of joint standard documents, common to both bodies, was not favourably received, and your Council, while still holding the opinion previously expressed, have adopted the principle of issuing standard documents for the use of the Society's members, and have referred the matter to a sub-committee for consideration and report.

Architectural Education.—At their first meeting your Council received a report from the Beaux-Arts Committee to the effect that after due consideration they had decided to institute in England a similar form of architectural training to that which exists at the Ecole des Beaux-Arts in Paris, and outlining their proposals for the establishment of an Architectural Atelier in London. Your Council, as supporters of the scheme, were invited to guarantee a sum sufficient for the Committee's estimated preliminary expenses, which they at once did.

It was subsequently reported to your Council that the Société des Architectes Diplômés par le Gouvernement had given their adherence to the scheme, and that several eminent members of the Institut de France and patrons of the Ecole des Beaux-Arts, Paris, had joined the Committee, in addition to a number of distinguished English architects.

It was thought by the Beaux-Arts Committee that it would be in the best interests of the proposal that the Committee should be reconstructed as a separate body, owing allegiance only to the Ecole des Beaux-Arts and the French Society, and that it should not be identified with any one Architectural Society in Britain.

The part played by the Society in bringing the Committee into existence and enabling it to place its scheme upon a permanent basis was recognised and appreciated, and your Council agreed at once to the Committee's proposals.

The Committee then issued a statement and prospectus, and in February it was announced that they had opened the first Architectural Atelier in London at 16 Wells Mews, Wells Street, Oxford Street, W.

It would be out of place for your Council to comment in this report upon the work of the Committee, even if they had the right to do so. The results so far attained speak for themselves. The Atelier is there for all to see. The Beaux-Arts Committee's proposals have struck at the root of the system of architectural education in this country, and already a proposed remedy for some of the obvious defects which exist is being applied elsewhere as well as at the Atelier. Your Council have shown their confidence in the Committee's proposals by contributing a substantial sum to their funds, and their example has been followed by several individual members of the Society. If other members would make themselves personally acquainted with the Committee's work, they could not do otherwise than become enthusiastic supporters of the scheme. Your Council are convinced that if the Society had done nothing else during the past year than that of enabling the Beaux-Arts Committee to establish itself, it would have reason to be satisfied in having achieved something which is calculated to do the art of architecture in this country a lasting good.

Statutory Registration of Architects.—Your Council so long ago as July 17, 1912, invited the Council of the R.I.B.A. to state definitely whether it was their intention in giving consideration to any steps which they might propose to take in promoting a Bill in Parliament for the Statutory Registration of Architects, to invite the further co-operation of the Society. This question has not yet been answered by the Institute, and early in the Session your Council placed the Society's Draft Bill in the hands of a Sub-Committee for revision, and made their arrangements for proceeding with their propaganda. This included the preparation of a statement giving reasons why, in the opinion of the Society, it is in the public interest that architects should be registered. Your Council invited the Council of the R.I.B.A. to join them in issuing a statement on the principle of registration, and a reply was received to the effect that the Registration Committee of the Institute were considering a draft Bill, and that if in due course it was decided to invite the Society to enter into a joint discussion they would be so informed. Your Council thereupon notified the R.I.B.A. of the Society's intentions to proceed with the issue of the statement referred to, which was duly sent out and followed up by a newspaper propaganda from the same point of view. This resulted in widespread publicity being given to the matter. Your Council have not taken any steps to present the Society's Bill in Parliament while the matter of registration has been under consideration by the Council of the Institute, but in view of recent developments they have placed the Society's draft Bill in the hands of counsel for "settlement" in conference, with a view to its introduction into Parliament during the next Session.

Your Council desire to make it clear that they have not departed from the principles laid down by the Society thirty years ago. They propose to continue to advocate and promote the Statutory Registration of Architects, on lines which will protect all vested interests, and provide for the welfare of the community, the art, and the profession in the future. They are of the opinion that the draft Bill embodies the principles upon which a good public case can be made out for registration.

THE LATE MR. JOHN HONEYMAN, LL.D., R.S.A.

We regret to announce the death of Mr. John Honeyman, LL.D., R.S.A., at his residence, Minewood, Bridge of Allan, on the 8th inst. Mr. Honeyman, who was in his eighty-third year, was the doyen of the architectural profession in Scotland. He was born in Glasgow in 1831, his father being a merchant and magistrate of the city. He received his early education at home from tutors, and subsequently at Merchiston Castle School, Edinburgh, where he remained for five years. Destined originally for the ministry, he attended the arts classes at Glasgow University, where he went through the full curriculum. Having, however, determined not to continue his studies for the Church, he spent one year in an accountant's office before commencing what was to be his life-work. Not finding the business of an accountant specially to his liking, he adopted the suggestion of a friend to try his hand at architecture, and accordingly entered the office of the late Mr. Alexander Munro, architect, with whom he completed the full period of apprenticeship. The change was entirely to his liking, and he threw himself with enthusiasm into his new work, developing a special bias for the study of ecclesiastical architecture in England and on the Continent.

Mr. Honeyman started business on his own account in Glasgow in 1854, a year when, according to the Post Office Directory, there were no more than thirty-two architects in the city. During the next few years he found opportunity to visit a great many of the cathedral towns in England, generally staying about a fortnight in each, and devoting the whole of the time to measuring and sketching the buildings which interested him. In this way he acquired a peculiarly intimate knowledge of Gothic, and his later work bears evidence of the extent and thoroughness of his studies. Before the first decade of his practice had come to an end his position was assured, and he felt he had fully justified his adventurous start. In 1889 he assumed as a partner Mr. John Keppie, then a rising member of the profession, and the firm, which was more recently joined by Mr. Chas. R. Mackintosh, built up one of the most successful architectural practices in the West of Scotland. By a curious coincidence this partnership was dissolved on the first of January last. Among Mr. Honeyman's principal works may be named Lansdowne United Free Church at Kelvin Bridge, Glasgow, adorned by one of the most beautifully proportioned spires in the city; St. Silas's Episcopal Church and Trinity Congregational Church, also in Glasgow; St. Michael's, Merchiston; Aberfoyle Church; the Free West Churches at Greenock and Perth; and Largs Parish Church. He also prepared the designs for the restorations of Brechin Cathedral, Iona Cathedral, and St. Michael's Church, Linlithgow. The marble floor, the carved oak benches, the Communion table, and the reredos in Glasgow Cathedral were also executed to his designs. While his principal work was ecclesiastical—and these are but a few of the church buildings with which he was professionally associated—he also designed many public institutions and private residences. Among these are the Observatories at Glasgow and Paisley, also the Free Library and Museum, Paisley; and Helensburgh Town Hall. Among the mansion houses built to his design are those of Randallwood, Crieff; Achamore, Gigha, and Skipness Castle. In the profession his attainments were acknowledged by many honours. He was elected a Fellow of the Royal Institute of British Architects in 1874, and served on the Council for seven years, during which he did much to popularise the Institute among Scottish architects; President of the Glasgow Institute of Architects; President of the Glasgow Architectural Society, which preceded it. He retired in 1889 from the Glasgow Institute, and in 1900 was elected an honorary member.

He was one of the originators of the Glasgow Archæological Society in 1855, and for two years acted as President. He was also Vice-President of the Glasgow Arts Club. Mr. Honeyman was the author of numerous papers and pamphlets on a variety of subjects, including "The Age of Glasgow Cathedral and the Effigy in the Crypt," "The Drainage of Glasgow," "The Dwellings of the Poor," "Trade Unionism —the Slight on British Industry and Commerce," "Betterment," &c. In 1858 he showed a full-size drawing of a fireclay trap which fifteen years later came into universal use under the name of the Buchan trap.

In 1892, when the charter of the Royal Scottish Academy was re-arranged, Mr. Honeyman was elected an Associate, and in 1895 was elected an Academician. In 1904 the University of Glasgow conferred on him the honorary degree of LL.D.

In 1904 Mr. Honeyman was forced to give up the profession which he loved so much, owing to his almost total loss of eyesight, and in that year was given a complimentary banquet by the Glasgow Institute of Architects. But his interest continued in all things architectural to the end—as an instance of which we may mention his boast that this Journal was read to him week by week from cover to cover. He leaves a widow and two sons, the younger of whom follows his father's profession.

FACTORY CONSTRUCTION.

By PERCIVAL M. FRASER, A.R.I.B.A., M.R.S.I., M.C.I.

It is now generally recognised that a well-equipped series of shops is an absolutely essential factor in a successful industrial concern. It is as important as the machinery and plant and the site. English factory buildings, even with the most enterprising and successful firms, are often disgraceful.

The attempted adaptation of groups of buildings to a use foreign to that for which they were designed is one explanation of the grotesque jumble of nondescript buildings dignified by the name of industrial buildings which we so often see. In the majority of cases economy could have been effected had the old buildings been scrapped and an entirely new series of buildings erected.

The relations of the architect and the engineer who is dealing with the lay-out of the plan, or who is running the process of manufacture, should be very close and sympathetic. Periodical consultations between these parties result in a considerable saving of labour, and only a complete *entente* between both parties will permit of all considerations and requirements being harmoniously collated.

Some of the reinforced concrete specialists make a point of preparing complete designs for factories and other buildings, concerning which they can have absolutely no experience or knowledge. This is a further prolific source of ill-designed and inefficient factory premises.

The governing principle in the design of industrial works is to provide efficient buildings at the lowest cost. A certain operation takes place in each department, and these processes are components of the finished article. Each building unit, therefore, must be designed to allow its particular process to be carried out under the best conditions and without restrictions, and the buildings as a whole must be schemed to allow the various processes to pass through them in the most direct manner without loss of time or waste in any shape or form. The difficulties and restrictions of a building site are frequently put to valuable use; such as, for instance, differences in the levels of a building site may be frequently utilised to convey the material by gravitation through the various departments, and thus reduce handling and power consumption, and again will often enable loading stages to be formed at convenient heights.

Unless the foundations are likely to prove abnormally expensive it will generally be found that the one-storey building can be constructed the more cheaply.

A second important detail which practically always arises is the question of eliminating columns or reducing their number and planning their positions to the best effect. When the engineer does not object to columns, be sure he has evil designs on them, and ample strength should be provided accordingly.

Other questions which must infallibly arise are the nature of the lighting, which must, for many manufactures, be from the roof. In two-storey buildings the width of the building is determined hereby, but it is an advantage to make the upper floor with roof light. Too much daylight, unlike artificial light, cannot be provided, but the increase of window space will add to cost and complicate heating and ventilation. The north or sawtooth roof is always an advantage, but is not always worth the expense, costing, as it does, 10 per cent. more than an ordinary pitched roof in steel, or 20 per cent. more than a flat roof in reinforced concrete.

With regard to the clear height of workrooms, a margin should be allowed over the bare necessity, as it is comparatively cheap to add to the height of a floor, and a lofty room conduces greatly to its general utility.

The serious competitors of reinforced concrete which are at present before the building world are as follows:—

Brick, steel and cast iron, wood, sheet iron and metal lathing and plastering, tiling, terra-cotta or similar slabbing and casing, and a number of patent forms of construction too numerous to mention and most difficult to classify, most of which, however, come within the scope of reinforced concrete in one or more respects.

It is exceedingly difficult, if not impossible, to definitely pronounce on the comparative economies of the foregoing materials, and we can only take specific instances and endeavour to generalise from these. I am able to give a case where competitive prices were obtained for a building, which is of a fair size, straightforward, and a really useful one for this comparison. In this case alternative schemes were prepared in the fullest detail and competitive prices obtained. The results were as follows:—

1. For a steel-frame building with brick walls, corrugated iron roof (two-thirds north light), wood joists and boards on steel bearers to galleries, and patent glazing to roofs, the cost was 100 per cent.
2. For a reinforced concrete building with roofs as last 92 per cent.
3. As last, but with concrete roofs, part flat, part with north lantern lights, but with brick panel walls, 89 per cent.
4. As No. 1, but with corrugated iron walls, 89 per cent.
5. Wholly in reinforced concrete 88 per cent.

The building was actually carried out in reinforced concrete, including the gutters, down pipes, roofs, walls, foundations, and every detail where it was possible for this material to be used. In this case there were no special circumstances whatsoever in favour of reinforced concrete; indeed, the question of the supply of aggregate was a very difficult one, as it had to be brought from twenty-five to thirty miles by rail. The foregoing figures will apply to all cases of ordinary buildings costing more than, say, £2,000. A building of less cost will, generally speaking, be found cheaper in some other form of construction, and walls will nearly always be found cheaper in brick panels than in concrete slabs.

MAINTENANCE.

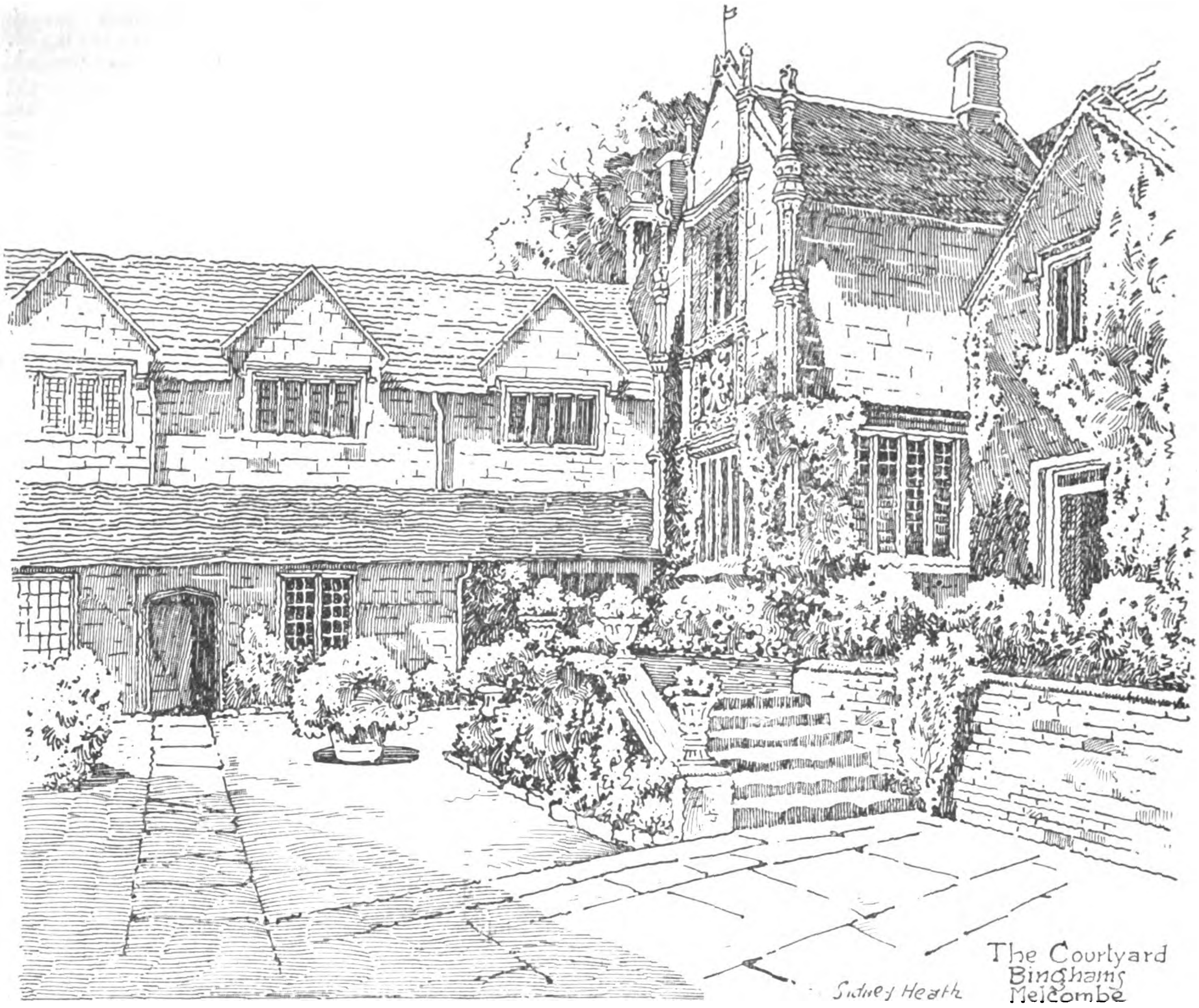
The freedom of concrete from deterioration permits of savings in maintenance charges. These are exceedingly great in large series of factory buildings, and can never be shown on paper. Maintenance means more than merely guarding against the ravages of time. The necessity for maintenance implies decay; the maintenance costs are a dead loss, and maintenance is in itself a thankless job owing to the fact that it is simply patched-up work, merely staving off the inevitable, which every year becomes at once more onerous and more useless.

Concrete constructions carried out during the Roman Empire are completely sound to-day, after a period of two thousand years entirely without maintenance. As regards thoroughness of construction and the quality of materials, the Roman constructions cannot compare with the modern. This simple truth needs to be emphasised, because the public are apt to draw odious comparisons between the Pyramids of Egypt and the modern suburban villa, without reflecting that the comparison is wholly unjust and grotesque.

Even with rigid economy, factory construction in concrete is, if conscientiously carried out, better constructed to-day, and therefore more permanent than any work constructed by the ancients.

In my opinion, we have found in reinforced concrete one of the few suitable materials for the prevailing climate of Northern Europe.

Nothing is, of course, fireproof, but we have to seek for the nearest approach to this ideal. Ordinary reinforced concrete construction is as efficient a fire resister as can be found. The metal is naturally guarded against by the concrete covering. There is nothing combustible about the construction; it is not liable to exercise a dangerous thrusting or overturning action, even when heated and suddenly cooled. It is, of course, liable when quenched with a strong shower of cold water to have the covering of slabs and beams either flake off or disintegrate. It is rarely or never found that any of the concrete, beyond the covering to the reinforcement, suffers any irreparable



damage. Any such covering can be broken away where loose and the building restored after the conflagration.

HYGIENIC PROPERTIES.

To comply with the spirit of the Home Office requirements, a constructional material for factory buildings should be such as will not absorb dust or dirt in any form, which can be cleaned or kept clean with little effort, and which offers a fairly even surface. The other types of factory construction are mainly of brick walls and wood and steel-joist floors.

Perhaps the unique merit of reinforced concrete lies in its extraordinary adaptability. There is no other building material which can be put to such diverse uses without unwarrantable eccentricity or expense. The practical economy of such a material is also evident. Provided there are no insurmountable difficulties in getting on to the site steel rods, timber, gravel, and cement, we have at hand constituents which are capable of being moulded into any shape and resisting any strain, and fulfil purposes which collectively would require the use of a large number of different materials. In the ingredients of reinforced concrete there is nothing which cannot be readily obtained in the most remote locality in the kingdom.

Following on the adaptability of reinforced concrete is the speed with which construction can go forward. If a contractor will lay down a well-considered and efficient plant, the rapidity with which a concrete job can go forward is extraordinary. If appearance is an object in a reinforced concrete building, a very agreeable effect can be obtained by perfectly legitimate and economical means. The inherent strength of a building constructed entirely of reinforced concrete compares favourably with one in any other material or combination of materials.

Factory buildings are liable to be grossly overloaded, the costs are always reduced to the utmost farthing, and the buildings are not usually treated with such care as domestic or public buildings, and are liable to be severely mutilated and subjected to the deleterious effects of steam, vapour, fumes, acids, oils, and undue vibration, &c., and, consequently, the factor of safety in design should never be reduced below four. It is also advisable to construct certain portions with even an increased factor, as, for instance, flat roofs, which will with certainty be used for storage, and walls, beams, slabs, and columns, which are generally subjected to the suspension of shafting, motors, and other live loads without consideration of the purpose for which they have been actually designed.

In view of the enormous extent in which reinforced concrete has been used for buildings of this class during the past few years it has been comparatively immune from failure.

THE MANOR-HOUSE, BINGHAM'S MELCOMBE.

By SIDNEY HEATH.

PARTLY owing to its being situated eleven miles from the nearest railway station—that is, eleven miles from Dorchester and eleven miles from Blandford—the old house of Bingham's Melcombe is one of the least known in Dorset.

Eleven miles is nothing to the motorist, but to the old folk of Dorset it is a vague and mysterious distance, and a few years ago several old villagers of Bingham's Melcombe could be found who had never seen a railway train.

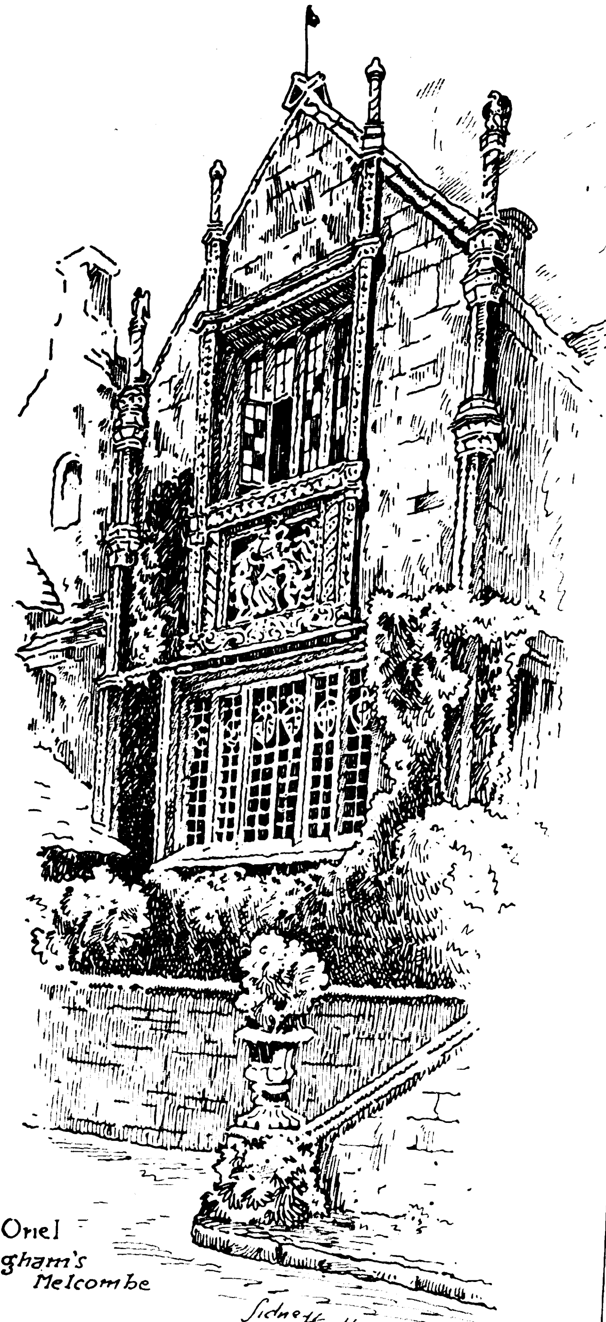
For six centuries without a break in the male succession this old manor-house was the home of the Binghams, until it was purchased some fifteen years ago by the late Mr. Bosworth Smith, a distinguished Dorset *littérateur*, whose "Life of Lord Lawrence" is a standard work.

The courtyard, on two levels, is entered through a very ancient gatehouse, with walls 7 feet thick in places, and built originally, no doubt, to protect the somewhat less massively built domestic portions of the dwelling. The building meanders round the courtyard with that haphazard yet pleasing irregularity so characteristic of Tudor building in the days when the working craftsman was his own architect, and the symmetrical or any plan was undreamed of and unborn.

The oriel projecting from the old manorial hall is of warm Ham Hill stone, with a deeply cut escutcheon of the

Bingham arms. In the glass of the windows are medallions of Philip and Mary, and the regal arms of France, Leon, Aragon, and Castile.

Inside, many fine Tudor chimney-pieces may be seen, and the nobly proportioned rooms have retained their oak flooring and panelling. Within the grounds is a fine circular stone dovecot, one of four only that now remain in Dorset.



On the west side of the house is a bowling green of inviolate antiquity, with a surface soft and springy.

The bowling green at Bingham's Melcombe has been mowed and rolled for half a thousand years.

THE LAW OF DILAPIDATIONS.*

By Graham Mould (Associate), Barrister-at-Law.

Introductory Observations.

The law of dilapidations is one of those fairly numerous subjects where the lawyer and the surveyor meet on common and, I hope, not altogether unremunerative ground. Neither practitioner can claim the matter as being solely within his own domain. So much was this recognised that when in 1887 Mr. (now Judge) Wheeler, Q.C., contributed a paper on the law of dilapidations it was followed at the next meeting by a paper from Mr. Pilditch upon the practice, and the two papers were discussed together. It is with no little trepidation that I essay to follow in the footsteps of two such eminent authorities, but I confidently rely upon your kind indulgence towards the shortcomings of my paper.

Whilst to-night I propose to confine myself, as far as possible, to the purely legal aspect of the subject, yet it will be my endeavour in dealing with the more important cases to give the facts in sufficient detail to enable the surveying point of view to be fully appreciated. And in some half-dozen of the leading cases—cases which are likely to dominate the law of dilapidations for many years to come—I have set out considerable portions of the judgments in the words of the Judges themselves. On the other hand, all questions affecting ecclesiastical or agricultural dilapidations or affecting any relationship other than that of landlord and tenant are excluded from the purview of this paper.

It is not easy to offer a satisfactory definition of what constitutes dilapidations, and I do not propose to attempt the task further than to say that whilst the time-honoured definition elaborated by Tindal, C.J., in *Gutteridge* v. *Munyard* (1834), 1 M. & R., 334, must now be read subject to the principles laid down in the recent case of *Lurcott* v. *Wakely* (to which I shall presently refer), the very practical definition formulated by the Royal Institute of British Architects so long ago as 1844 appears to retain all the essentials of accuracy.

Dilapidation questions arising between landlord and tenant may be broadly classified as arising under two heads:—

(A) Where there is no express contract to repair; (B) where there is an express contract to repair.

(A)—Where there is no Express Contract to Repair.

(1) *Tenant's Implied Obligation.*

In the absence of any express contract to repair, the liability which the law places upon the tenant is one of an extremely limited character. Something may depend upon (*a*) the length of the term, and (*b*) the nature of the premises.

Some old cases and most modern text-books state that the implied obligation on the part of a tenant from year to year is to keep the premises wind and water tight. Probably this may be regarded as the high-water mark of the tenant's obligation. At all events, it seems fairly settled that a yearly tenant not under covenant to repair is not liable for mere wear and tear or for general or substantial repairs.

The most recent decision on this branch of a tenant's liability is seventy years old, and it is not easy to forecast the precise view which the courts would take to-day.

Some writers have expressed the opinion that if a roofing slate become broken through the forces of nature, the yearly tenant is not bound to repair properly with another slate, and that he cannot be called upon to do more than will prevent the rain getting in to the damage of the house, *e.g.* that he might replace the broken slate with a piece of wood, and, provided that that expedient kept out the wet, he could not be called upon to do more. Of course, if the tenant himself had broken the slate different considerations would apply, and in that case he would be bound to replace the slate so broken.

Similar nebulousness as regards the liability of the tenant to repair appears to pervade the case of a tenant (always, be it remembered, where there is no express contract on the subject) for a term of years.

Here, again, there is very little modern case law, but the case of *Davies* v. *Davies* [1888], 38 Ch., 499, clearly establishes the proposition that such a tenant is liable for permissive waste, and that included in such liability is the obligation to make good the effect of wear and tear.

There do not appear to be any modern cases defining what is permissive waste, but the older authorities state that suffering a house to be uncovered whereby the timbers become rotten, or allowing the walls to decay for want of paint or plaster constitutes permissive waste.

There is no implied covenant to rebuild in the case of accidental fire.

(2) *Landlord's Implied Obligation.*

When Mr. Wheeler addressed this Institution in 1887 he was enabled in a very happy phrase to say that this branch of the subject resembled the well-known story as to snakes in Iceland in the sense that in Iceland there were no snakes, and in our law there was no obligation implied on the part of the landlord. But twenty-seven years of ameliorating legislation have passed over the heads of landlords since that time, and to-day the position of a landlord is one of greater responsibility and less freedom. It is true that the old common law rule—that a landlord is under no implied obligation as to the condition of the premises (with the exception of furnished houses) which he lets, however ruinous or dilapidated such premises may be—still holds good, but statutes have now engrafted upon it many and increasingly important exceptions.

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* A Paper read at the Surveyors Institution on January 12.

(*a*) Where any house or part of a house is let for habitation at a rental not exceeding per annum £20 in the Metropolis, £13 in Liverpool, £10 in Manchester or Birmingham, and £8 elsewhere, there shall be implied a condition that the house is at the commencement of the holding in all respects reasonably fit for human habitation. (Housing of the Working Classes Act, 1890, s. 75.) This statutory condition shall take effect notwithstanding any agreement to the contrary. (Housing of the Working Classes Act, 1903, s. 12.)

(*b*) Where, after December 3, 1909, any house or part of a house is let for habitation at a rental not exceeding in the administrative county of London £40, in a borough or urban district (with a population of 50,000 or upwards) £26, and elsewhere £16, there shall be implied (1) a condition that the house is at the commencement of the holding, in all respects reasonably fit for human habitation, and (2) an undertaking that the landlord shall during the holding keep the premises so fit as aforesaid. But such condition and undertaking are excluded when the letting is for a term of not less than three years upon the terms that the premises are put by the lessee into a condition reasonably fit for occupation and the lease is not determinable by either party before the expiration of that term. (Housing, Town Planning, &c., Act, 1909, ss. 14 and 15.)

It will be observed that the Act of 1909 imposes far larger obligations upon the landlord than was the case under the Act of 1890, inasmuch as not only are the limits as to rental materially extended, but there is superadded the obligation of keeping the premises in repair during the term. On the other hand, apparently there is nothing to prevent the landlord contracting out of the Act of 1909, although he cannot contract out of the Act of 1890. As to both Acts the provisions only apply where the letting is of a house or part of a house for human habitation.

Under the Act of 1909 the landlord has power to enter and view, and therefore presumably could not set up want of notice from the tenant as exempting him (the landlord) from liability in consequence of non-repair.

A landlord who commits a breach of the statutory undertaking is liable only to his tenant in respect thereof: no liability is incurred either towards a stranger (*Ryall* v. *Kidwell* [1913], 3 K. B., 123) or to a member of the tenant's family (*Middleton* v. *Hall* [1913], 108 L. T., 804).

Where a landlord lets flats and retains control of the common staircase by which alone access to them is obtained he impliedly agrees with his tenants to keep such staircase in repair, and a duty is imposed by law upon him towards persons using the staircase in the course of business with the tenants to keep it reasonably safe. (*Miller* v. *Hancock* [1893], 2, Q. B., 177.) But the principle of that case will not be extended to imply a duty to light the staircase. (*Huggett* v. *Miers* [1908], 2 K. B., 278). Nor is a landlord of premises which are let out in flats, who retains, for his own use, an upper floor in which is a cistern, liable to a tenant of a lower floor who takes his supply of water from the landlord's cistern if, without wilful default or neglect on the part of the landlord, a leakage occur which damages the tenant's goods. (*Blake* v. *Wolff* [1898], 2 Q. B., 426.)

(B).—Where there is an Express Contract to Repair.

(1) Tenant's Obligation.

(a) *General Construction.*

In construing any covenant regard must be had on the one hand to "each word used" (*per* Fletcher Moulton, L.J., in *Lurcott* v. *Wakely*) and on the other hand to the age, class, locality, and general condition of the premises at the time of the demise (*Payne* v. *Haine* [1847], 16 M. & W., 541). "If he takes an old house he must not let it tumble down, he must keep it up; but only as an old house." (*Scales* v. *Lawrence* [1860], 2 F. & F., 289.)

A general covenant to repair extends to all buildings on the land at the time of the demise, also to all buildings erected during the term, and further to all fixtures in the nature of buildings attached to the demised land, and not merely resting thereon, provided that the fixtures are not of a character which the tenant is entitled to remove. (*Thresher* v. *East London Waterworks Company*, [1824], 2 B. & C., 608.) It must also be borne in mind that if the expression "erections" or "improvements" be used, things, such as trade fixtures, may be brought within the scope of the repairing covenant. (*Bidder* v. *Trinidad* [1868], 17 W. R., 153.) On the other hand, if the repairing covenant be limited in terms to the buildings demised it will not be extended to newly erected buildings which are distinct from, and form no part of, the buildings which were demised. (*Smith* v. *Mills* [1899], 16 T. L. R., 59.)

(b) *Commencement of Liability.*

Under an express covenant to repair the liability commences from the execution of the lease, and a lessee is not liable for breaches of the covenant to repair which occur before the execution of the lease although subsequent to the day on which the term is stated to commence. (*Shaw* v. *Kay* [1847], 1 Ex., 412.)

(c) *Continuance of Liability.*

Under an express covenant to repair the lessee remains liable during the whole term of the lease, and does not and cannot get rid of such liability by assignment.

(d) *Holding over.*

A tenant who holds over after the expiration of the lease upon an implied tenancy from year to year is liable upon the repairing covenants of the expired lease. (*Ecclesiastical Commissioners* v. *Merral* [1869], L. R., 4 Ex., 162.) And this may involve liability to rebuild after fire. (*Digby* v. *Atkinson* [1815], 4 Camp., 275.)

(e) *Special Covenants.*

A covenant to "substantially repair, uphold and maintain" a house has been held to make a tenant liable to keep up the inside painting. (*Monk* v. *Noyes* [1824], 1 C. & P., 265.) But Mr. Redman, in his learned treatise, states that this case "is no longer an authority for the broad proposition that a covenant to repair includes inside painting." On the other hand, neither Mr. Foa nor Mr. Aggs (the present editor of "Woodfall") appears seriously to question the decision.

In *Crawford* v. *Newton* [1886], 36 W. R., 54, there was an agreement to keep the inside of the house in "tenantable repair." The tenant had occupied for seventeen years without having painted or papered. It was held, first by Cave, J., and afterwards by the Court of Appeal, that the tenant was only bound to paint and paper so as to prevent the house from going to decay.

A covenant to repair the "external parts" of a house has been held to include the boundary walls, notwithstanding that they were party-walls and therefore not exposed to the weather. (*Green* v. *Eales* [1841], 2 Q. B., 225.)

A covenant to keep walls, roof, and "main timbers" in repair has been held to include iron beams. (*Manchester Bonded Warehouse Company* v. *Carr* [1880], 5 C. P., 507.)

A covenant to do repairs to the satisfaction of the landlord's surveyor is fulfilled if the repairs done are such that the surveyor ought in reason to be satisfied. (*Doe* v. *Jones* [1848], 2 C. & K., 743.)

Where a tenant covenanted to "make, uphold, support, cleanse and repair, and keep in repair all . . . sewers, drains," &c., and the drainage system had to be reconstructed in pursuance of a notice under the Public Health Act, 1875, it was held that the tenant was not liable to make a "new drain." (*Lyon* v. *Greenhow* [1892], 8 T. L. R., 457.)

A landlord agreed to expend £50 in repairs, and it was stipulated that the tenant should not require any further repairs to be done except repairs to the roof, walls, drains, and sewers. Subsequently the drainage system was discovered to be most defective. It was held that the agreement did not extend to the rectification of a structural defect, but was confined to keeping the drains as they existed in good tenantable repair. (*Hugall* v. *M'Lean* [1884], 1 T. L. R., 53.)

(f) *Fair (or reasonable) Wear and Tear excepted.*

For many years the precise signification to be attached to the exception of fair wear and tear following upon a general covenant to repair has been a vexed question.

In passing I may suggest that there is no tangible distinction between the expression "fair wear and tear" on the one hand and "fair use and wear" on the other. Whatever the meaning of the one expression that also is the meaning of the other.

What does the expression mean? Mr. Foa, in his admirable work, suggests that the clause may throw "upon the landlord the burden of showing that the dilapidations complained of are either the result of damage (whether wilful, negligent, or accidental), or that they have been caused by something other than mere user, *e.g.*, by not repairing at an earlier stage."

The older authorities appear to have attached little, if any, importance to the words in question. I pass to modern decisions.

In *Scales* v. *Lawrence* [1860], 2 F. & F., 289, a tenant covenanted in a seven-years lease, as often as need should require, well and sufficiently to repair, uphold, sustain, paint, glaze, cleanse, scour, &c., and leave in such repair, reasonable wear and tear excepted.

Willes, J., held that papering, not being expressly mentioned in the covenant, was not comprised within its terms as it was mere matter of ornament. The utmost that could be included was the cost of replacing such portions of the paper as might be absolutely torn off. The tenant had painted the premises once during the term, and it was held that he was not bound to repaint on leaving.

Willes, J., said:—

"If he painted and papered within seven years and there is no damage in the way of breaking down or tearing off, then the reasonable construction of the covenant is that he should cleanse the old paint, &c. (or renew it only where destroyed), and give up the house in a clean and fair condition, and for fair wear and tear he would not be liable."

Lord Coleridge, C.J., delivering the judgment of the Court (Coleridge, L.C.J., Grove and Lindley, JJ.) in *Manchester Bonded Warehouse Company* v. *Carr* [1880], 5 C. P., 507 (a case where a whole warehouse fell owing to the tenant having overloaded certain floors with flour), said:—

"It only remains to consider whether reasonable wear and tear can include destruction by reasonable use. These words, no doubt, include destruction to some extent, *e.g.*, destruction of service by ordinary friction, but we do not think they include total destruction by a catastrophe which was never contemplated by either party."

In *Davies* v. *Davies* [1888], 38 Ch., 499, Kekewich, J., expressed the view that an exception of fair wear and tear would exempt a lessee from liability in respect of "any dilapidations found at any time or at the end of the term by reason of the wear and tear, the wearing out of the walls and floors of the public-house, for example, from the constant traffic and so forth."

In *Terrell* v. *Murray* [1901], 17 T. L. R., 570, a lessee for a term of seven years covenanted "to deliver up at the expiration . . . of the said term the messuage . . . in as good repair and condition as it now is in reasonable wear and tear . . . excepted." There was no covenant to repair during the term. The lessor claimed (*inter alia*) £12 for painting the outside woodwork, £2 for repointing certain brickwork, and £5 for repairing parts of the kitchen floor which had become affected by dry rot. Bruce, J., in deciding that the tenant was not liable for any of these items, said that the meaning of the covenant in his opinion was that the tenant was bound at the end of the tenancy to deliver up the premises in as good condition as they were in at the beginning subject to the following exceptions, that was to say, dilapidations caused by the friction of the air, dilapidations caused by exposure, and dilapidations caused by ordinary use. He was of opinion that outside painting was not a thing the tenant was bound to do under that covenant. Phillimore, J., felt some difficulty, but on the whole concurred.

(To be continued.)

VICTORIA AND ALBERT MUSEUM.

THE Department of Architecture and Sculpture has recently acquired an important example of English Romanesque art; a Tau, or head of a cross-staff, in morse (walrus) ivory, probably dating from the early twelfth century. It is carved on one side with the Agnus Dei between angels, and on the other with a seraph between dragons; the curved ends have been broken away. This most interesting ivory was dug up in Water Lane, in the City, about twenty years ago, and has since been in private possession. The only other ivory Tau that can definitely be claimed as English was presented to the British Museum in 1903. The Victoria and Albert Museum already possesses a fine series of similar ivory Tau heads of Continental origin.

Two interesting additions to the collection of German sculpture have been made from the funds of the Murray bequest; both of them were formerly exhibited on loan from the late Mr. J. H. Fitzhenry. One is a marble statuette of a prophet, late fourteenth century, probably belonging to a series of similar figures made for the high altar of Cologne Cathedral, some of which have been dispersed; the other is a fine figure of St. George in limewood, South German work of the late fifteenth century. These are temporarily exhibited on the staircase outside Room 62.

Two large seated figures in painted stone, apparently carved at Verona in the late fourteenth century, were purchased for the Museum at the recent Fitzhenry sale by a small body of subscribers, and are now permanently placed in the East Hall. These figures represent men engaged in writing or reading, and have perhaps an allegorical signification. They are of much interest as illustrating a little-known period of North Italian art.

LEEDS AND YORKSHIRE ARCHITECTURAL SOCIETY.

A MEETING of the above Society was held on Thursday evening, January 8, at the Leeds Institute. Mr. A. E. Kirk, A.R.I.B.A. (the President), occupied the chair, and was well supported by a good number of members and Associates.

Mr. Frank Rutter, B.A. (Curator of the Leeds City Art Gallery), gave a lecture entitled "The Future of Art."

In the course of his remarks Mr. Rutter advocated a closer relationship between the architect and the artist (both with regard to painting and sculpture), as this would enable good work to be placed in more suitable settings than the present-day overcrowded state of art exhibition permitted.

The lecturer further pointed out the large number of successful artists who were amateurs in the sense that they depended upon other work for a livelihood in the early stages of their career.

Such men were not so likely to turn out indifferent work as those dependent upon their art, and the future of art developed on such lines was more likely to produce work of a high standard, considering the small demand compared with the large supply.

The following members took part in the discussion which followed: Messrs. A. Willets, Frank Foster, D. Bowman, and J. E. Braithwaite, and a vote of thanks to the lecturer was proposed by Mr. S. D. Kitson, M.A., seconded by Mr. W. H. Thorp, F.R.I.B.A., and carried. Mr. Rutter briefly replied.

BIRMINGHAM ARCHITECTURAL ASSOCIATION.

THE President (Mr. G. Salway Nicol) was in the chair at a meeting of the above-named Association, held in Exchange Buildings on Friday evening.

It was announced by the President at the outset that Mr. Jethro A. Cossins had given a valuable collection of drawings to the library of the Association, including many of his own original measured drawings of old Warwickshire and Worcestershire churches. He proposed a vote of thanks to Mr. Cossins.

Mr. Holland W. Hobbiss, in seconding, remarked that the collection would be valuable from an archæological point of view, as they all knew these old churches were apt to be mishandled.

The vote of thanks was cordially adopted.

The President subsequently announced with regret the retirement of Mr. Victor Scruton from the honorary treasurership of the Association, a position he had held for many years. Mr. Christopher Silk had consented to succeed him.

A warm vote of thanks was accorded Mr. Scruton for his valuable services not only as treasurer, but also as honorary secretary in the early history of the Association.

Mr. William Milburn, junr., afterwards delivered a lecture on "Modern Hospitals," in which he dealt with hospital construction in this country, on the Continent, and in America.

In the course of subsequent discussion the President remarked that it was gratifying to find that many points of design of the English hospital had been followed abroad, and it remained for our modern designers to adopt those advantages and skilful points which had been experimented with abroad. There was no doubt in his mind that the science of hospital design had traversed a step possibly in advance in Germany and America, and he was much struck with the very practical way in which the architects had grappled with their problem. They had evidently regarded it from a very outside point of view, and had come to the conclusion that they must carry out the suggestions of the doctors. The architectural treatment of severely logical arrangements was very fine indeed. In this country we were very often tied up with prejudice and convention in our schemes, but it had not assisted us in producing fine results architecturally.

SHROPSHIRE ARCHITECTURAL ASSOCIATION.

THE annual general meeting of the above Association was held at the Crown Hotel, Shrewsbury, on Saturday last, before a good attendance of members. Owing to the absence of the President, the chair was occupied by Mr. G. Dickins-Lewis, Shrewsbury.

A vote of thanks was accorded to the retiring President, Mr. W. H. Spaull, F.R.I.B.A., Oswestry, for his services during the past year.

The following officers were elected for the coming year: President, Mr. W. Scott Deakin, F.R.I.B.A., Shrewsbury; Vice-Presidents, Mr. G. Dickins-Lewis, M.S.A., Shrewsbury, and Mr. W. Webb, Whitchurch; Hon. Secretary, Mr. Frank Shayler, F.R.I.B.A.; and Treasurer, Mr. J. Brown.

A long and interesting discussion took place on the draft Registration Bill prepared by the Society of Architects for presentation to Parliament. Mr. G. Dickins-Lewis, who is a member of the Council of the Society, reviewed the registration movement, and explained the provisions of the draft Bill; and after fully discussing it the following resolution, proposed by Mr. Frank H. Shayler, F.R.I.B.A., and seconded by Mr. V. G. Santo, A.R.I.B.A., was unanimously adopted:—

"That we, the members of the Shropshire Architectural Association, having considered the draft Bill for the Registration of Architects, do give it our most cordial support, and undertake to do our utmost to further its interests; and that a copy of this resolution be sent to the Press, the secretaries of the R.I.B.A. and the Society of Architects, and also to the five members of Parliament representing Shropshire, requesting their support of the Bill when presented to Parliament."

After the meeting a good number sat down to the annual dinner, the chair being taken by Mr. G. Dickins-Lewis and the vice-chair by Mr. A. B. Deakin, when a very pleasant and successful evening was spent.

SHEFFIELD SOCIETY OF ARCHITECTS.

AN interesting lecture was delivered on the 8th inst. by Mr. C. E. Friend to members of the Sheffield Society of Architects and Surveyors at the University on "Furnishing and Decorating from a Practical Standpoint." Mr. A. F. Watson, F.R.I.B.A. (President), occupied the chair.

The lecturer opened by emphasising the value of a close alliance between architecture and furnishing and decoration. It would be well, he said, for clients to appreciate that the interior furnishing of a house bore some relation to the exterior. After describing the various foreign and indigenous woods, and the purposes for which they were best suited, Mr. Friend observed that wood was undoubtedly curious. He had occasion to remove an old chest of drawers, the drawers of which moved smoothly enough, from one end of the town to the other. In its unaccustomed surroundings the chest soon wanted easing, as it had swollen. If this happened to furniture 120 years old, could they be surprised that new furniture was similarly affected? If the question of cost was not a consideration, quite as good furniture was made to-day as formerly.

Concerning upholstery, he was sorry to say that, owing to much of the work being hidden, some shockingly slipshod work was often done, and instead of horse-hair stuffing, such materials as straw, shop sweepings, and even seaweed were sometimes utilised.

The President raised the question as to why high prices were paid for old Persian carpets that were considerably worn. Was it because they carried some virtue that it was impossible to get in a new carpet?

Mr. Friend said why the carpets obtained absurd prices at sales was more than he could tell. The more "holey" and more irregular Persian carpets were the more valuable they were supposed to be. It seemed to him foolish, but it was one of those peculiar things that happened in the fashions of to-day.

Mr. W. S. Purchon, A.R.I.B.A., said while he admired the work of other periods, he thought it was a much healthier state of things to develop furniture on modern lines rather than resort to mere copying.

THE TOWN PLANNING ACT, 1909.

A MEMORANDUM has been issued by the Local Government Board which brings up to date some of the information furnished in the Memoranda of November 1911 and 1912, in which particulars were given of the operation of the Housing, Town Planning, &c., Act, 1909, and of results achieved under it, and the Housing of the Working Classes Acts as amended by that Act. The information summarised in those Memoranda showed that the passing of the Act of 1909 had been productive of a considerable amount of activity on the part of local authorities in regard to various phases of the housing question, as well as in regard to town planning. The present memorandum shows that the activity has not only continued, but has increased materially during the year 1913.

In addition to the duties imposed upon local authorities by the Public Health Acts in regard to the inspection of their districts with a view to the abatement of nuisances, it is by Section 17 of the Act of 1909 made the special duty of every local authority to cause to be made from time to time inspection of their district, with a view to ascertaining whether any dwelling-house therein is in a state so dangerous or injurious to health as to be unfit for human habitation. In connection with the inspection, the local authority are to comply with such regulations and keep such records as may be prescribed by the Local Government Board.

The Board are satisfied that considerable progress has been made in most districts in the work of inspection of houses in accordance with the requirements of the Act, and as regards a few districts they have been informed that an inspection of all the houses has been completed. The regulations made by the Board under the Act contemplated that houses or areas regarded as most in need of inspection should be dealt with first, and in many districts where this course has been adopted the result has been to secure the remedying of some of the worst conditions. In a large number of cases in which it does not appear from the annual reports of the medical officers of health that reasonable progress in regard to the inspection of houses has been made, the Board have impressed upon the local authorities the necessity of increased activity in this direction.

Section 15 *of the Act of* 1909—*Notices to landlords to make houses fit for habitation*—applies where a contract has been made since the passing of the Act for letting for habitation a house or part of a house at a rent not exceeding (*a*) £40 in London, (*b*) £26 in provincial boroughs or urban districts with a population of 50,000, and (*c*) £16 elsewhere, and in regard to any such house there is under the section an implied undertaking on the part of the landlord to keep the house during the holding in all respects reasonably fit for human habitation. If it appears to the local authority that the undertaking is not complied with, they may serve notice on the landlord requiring him to execute such specified works as they may think necessary. Subject to a right of appeal to the Board, the landlord must carry out the works required, and, in default of his doing so, the local authority are empowered to execute the works at his expense.

The powers conferred by this section have been utilised very extensively by a number of local authorities, and it is satisfactory to note that the number of those authorities who have exercised the powers has increased substantially. Thus 114,623 notices were issued from December 1909 to March 1913.

In addition to the repairs and improvements effected to dwelling-houses by means of formal action under this section, local authorities have secured the execution of a large amount of work for the improvement of houses by means of representations to or negotiations with owners without resorting to formal notices under the Act, and, moreover, the number of notices under the Public Health Acts for the removal of nuisances is very large. On a comprehensive view of the action of local authorities and of their sanitary officers, it must be admitted that very distinct progress has been made during the past year in the direction of securing that houses shall be fit for habitation.

Sections 17 *and* 18 of the Act provide for procedure, by way of closing and demolition orders, for dealing with dwelling-houses represented to the local authority to be "in a state so dangerous or injurious to health as to be unfit for human habitation." Action under them is not limited to houses coming within the rental and other limits of Section 15.

Prior to the Act of 1909, closing orders under the Housing of the Working Classes Act, 1890, could only be made by a Court of Summary Jurisdiction on the application of a local authority. The Act of 1909 altered the procedure and empowered a local authority to make such an order. If a house is rendered fit for habitation after a closing order has been made in respect of it, the local authority are required to determine the order; but, failing this, they are authorised, on the expiration of a prescribed period after the closing order has become operative, and after hearing the owners, to make an order for the demolition of the house on the grounds referred to in Section 18 (2).

Any owner aggrieved by the making of a closing order, or by a refusal of the local authority to determine a closing order, or by the making of a demolition order, may appeal to the Board.

The returns of the local authorities disclose a very marked activity in dealing with houses in a state so dangerous or injurious to health as to be unfit for human habitation, and the figures for the three years ended March 31, 1913, conclusively prove that the facilities afforded by the Act of 1909 for dealing with this class of property have been productive of good results.

Tables I. and II. show that procedure under Sections 15 and 17 has resulted in a very large number of houses, previously insanitary or in need of repair, being made fit for habitation.

Number of houses in respect of which—	Year ended March 31, 1913
Notices under Section 15 were satisfactorily complied with by the landlords	42,083
The local authorities executed works under Section 15 where landlords failed to comply with notices	107
Action was taken under Section 17 and the houses were made fit by the owners without closing orders being issued	18,107
Closing orders were determined on the houses being made fit by the owners	2,870

At the cost of the landlords or owners, no less than 129,620 houses were made fit for habitation during the three years referred to, and this in addition to the large number dealt with under the Public Health Acts.

Of the Appeals to the Board under Sections 15, 17, *and* 18 *of the Act*, from the passing of the Act up to November 30, 1913, which were disposed of, 211 out of 294 were not actually determined by the Board. In a few of these cases the appeals could not be proceeded with owing to some informality, but in the great majority of the cases they were formally abandoned by the appellants.

In their Memorandum dated December 31, 1909, the Board stated in regard to Section 15 of the Act as follows:—"It will be advisable for the Council where practicable to resort to the provisions of this Section for securing that houses within the rental limits above referred to are put by the landlord into habitable repair, in preference to enforcing the powers conferred upon them by Sections 17 and 18 in regard to the closing and demolition of houses which become unfit for human habitation. The closing of houses involves the removal of tenants, and the natural sequel is demolition, resulting in a decreased amount of accommodation being available in the district. These objections are obviated where the case is dealt with under Section 15."

This advice has been followed to a large extent, considerably more houses having been dealt with under Section 15 than under Section 17. In at least 29,700 cases, in which procedure under Section 17 was in the opinion of the responsible advisers of local authorities admissible, action was in preference taken under Section 15, and although the number of houses demolished was substantial, the proportion to the total number dealt with is not great.

The action taken by local authorities in the provision of new houses since the passing of the Act of 1909 may be summarised as follows. Loans to an amount exceeding £1,400,000 have been actually sanctioned by the Board, the schemes for which these loans were sanctioned making provision for the erection of 6,355 houses for the working classes. In addition there were, at the close of 1913, schemes under consideration by the Board, providing for the erection of some 1,360 more houses at a cost of some £350,000. It will thus be seen that the loans actually sanctioned or under consideration at the end of 1913 exceeded £1,750,000 in amount, and that the schemes for which these loans have been sanctioned or applied for provide for the erection of more than 7,700 new houses by local authorities.

During the last two years there has been a considerable increase in the activity of local authorities, and the improvement is particularly noticeable in the case of rural districts.

In the twenty years following the Housing Act of 1890 loans sanctioned to rural authorities amounted to less than £50,000. The total for the last two years is more than five times that amount, or £255,397, while the total for 1913 alone considerably exceeds the whole amount sanctioned in previous years since 1890.

The loans advanced by Public Works Loan Commissioners in the three years ended March 31, 1913, to societies, &c., having for their object the provision of houses for the working classes, amounted to £657,390, as compared with £660,504 for the previous twenty years.

Under Section 10 of the Act of 1909 a county council may complain to the Board that any local authority other than the council of a county borough have failed to exercise their powers under Part II. or Part III. of the Act of 1890, where they ought to have done so, and if the complaint is substantiated the Board can require the default to be remedied. The only cases in which the Board have received formal complaints from county councils under the section related to a district in the County of Durham and a district in the County of Monmouth.

The Board have received and considered a number of complaints under Section 10 of the Act of 1909 as to local authorities not exercising their powers under Part II. or Part III. of the Act of 1890. The Board have found that the circumstances of several of the cases were such as to justify the making of orders of default against the local authorities concerned, but except in one case they have not found it necessary to proceed to that extremity. The authorities have usually shown themselves willing to comply with the Board's requirements in these cases. In the case referred to, however, the circumstances were such that the Board considered it necessary to make an order of default. Many complaints of an informal character also reach the Board, and they communicate with the local authorities thereon, and in some cases where no complaints have been received the Board have thought it desirable, by reason of the information in their possession, to undertake, by their housing and medical inspectors, independent investigations of the housing conditions with a view to ascertaining facts and securing that improvements shall be made.

The Board have also communicated with a large number of local authorities from time to time with a view to securing proper attention on their part to their statutory duties in relation to insanitary property, overcrowding, and the provision of further housing accommodation. Much good has resulted from the Board's action in regard to these matters, and the increased activity indicated in the previous portions of this memorandum, though due largely to the willingness and desire of local authorities to effect improvements in regard to housing conditions, may to a material extent be directly traced to the administrative pressure of the Board.

Town Planning.

In the Board's annual report for 1912-13 [Part II.—Housing and Town Planning. Cd. 6981] the subject of town planning was dealt with in considerable detail. The present memorandum brings up to date in a brief form the information in the possession of the Board as to the progress made by local authorities in regard to the preparation of town planning schemes under the Act of 1909 up to December 31, 1913.

The two schemes finally approved by the Board are:—

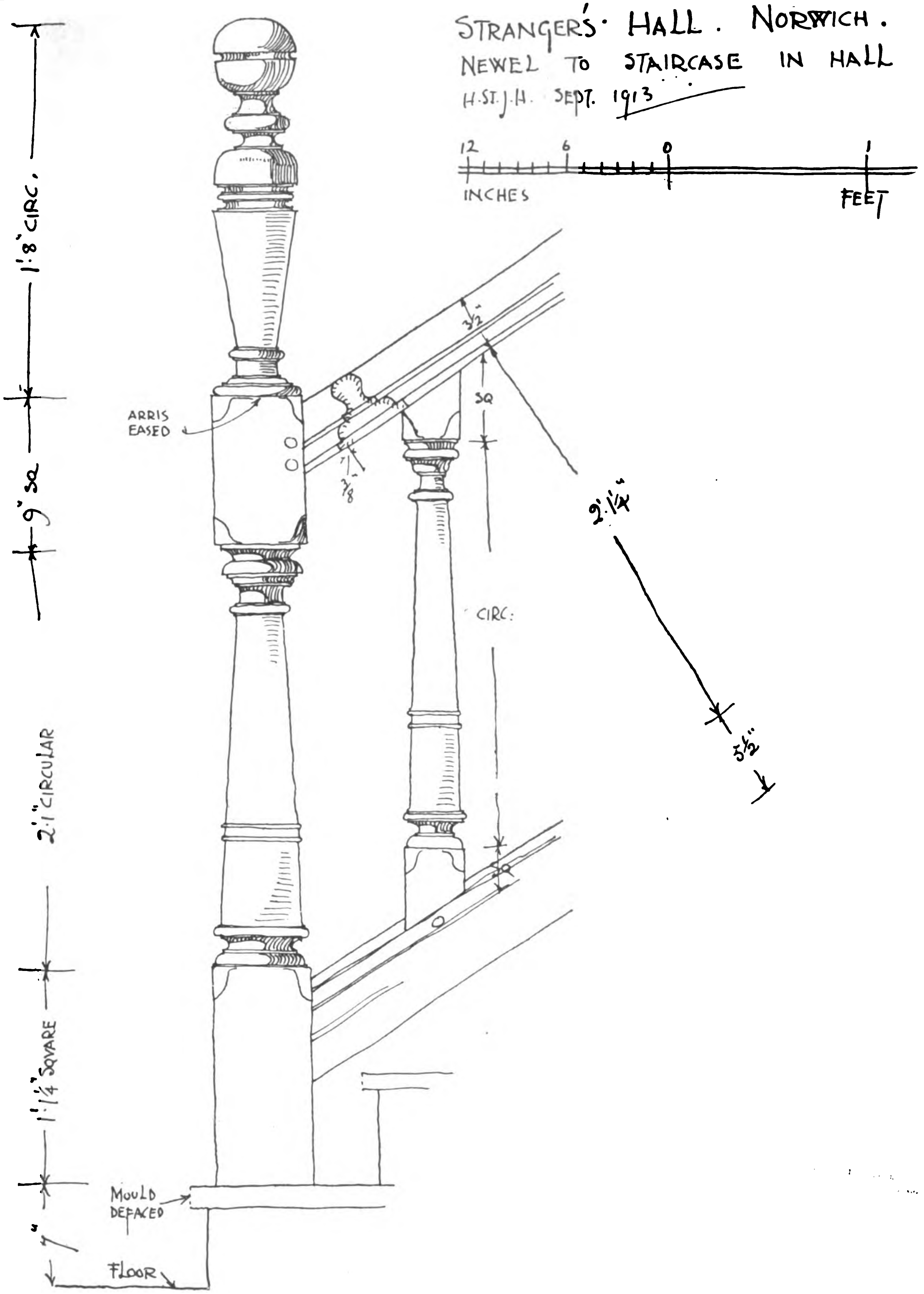
Birmingham Corporation.—The Quinton, Harborne, and Edgbaston Town Planning Scheme relating to an area of about 2,320 acres in the city.

Birmingham Corporation.—The East Birmingham Town Planning Scheme relating to an area of about 1,442 acres in Aston, in the eastern part of the city.

The three other schemes prepared by local authorities and submitted to the Board for approval are:—

Rochdale Corporation.—The Rochdale Town Planning Scheme (Marland) relating to an area of about 43 acres in the borough.

Ruislip-Northwood Urban District Council.—The Ruislip-Northwood Town Planning Scheme relating to an area of about 5,906 acres in the Urban District and in the


STRANGER'S. HALL. NORWICH.
NEWEL TO STAIRCASE IN HALL
H.ST.J.H. SEPT. 1913
12
6
0
1
INCHES
FEET
1'8" CIRC.
9" SQ
2'1" CIRCULAR
1'1¼" SQUARE
7"
ARRIS EASED
MOULD DEFACED
FLOOR
3½"
SQ
CIRC:
7/8"
2'1¼"
5½"

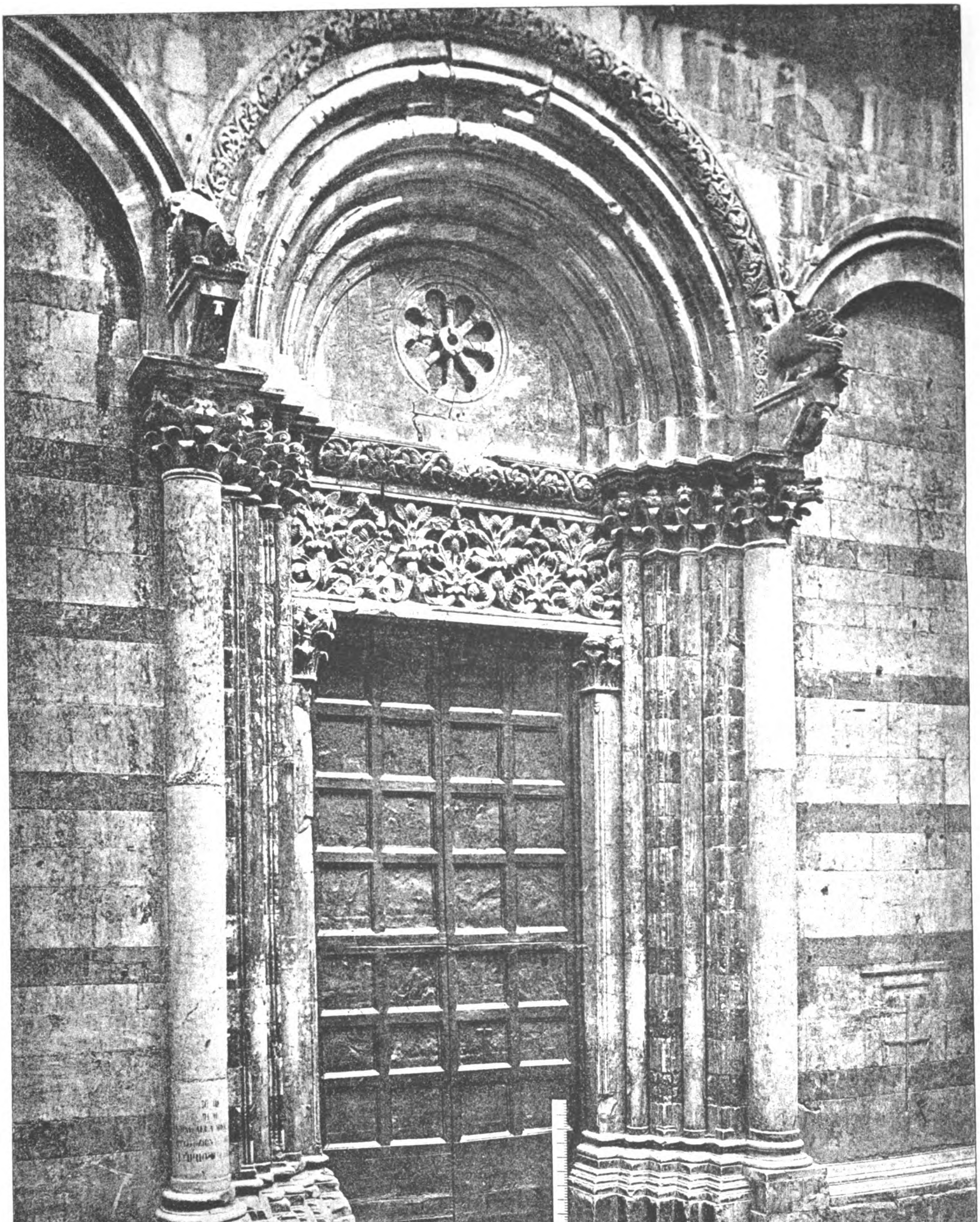
FROM A SKETCH BY MR. H. ST. JOHN HARRISON, "THE ARCHITECT" TRAVELLING STUDENT, 1913.

parish of Rickmansworth (Rural) in the rural district of Watford.

North Bromsgrove Urban District Council.—The Rubery Town Planning Scheme relating to an area of about 554 acres in the urban district.

The forty-seven other cases in which the Board has authorised local authorities to prepare or adopt schemes are:—

Town Councils (20) (27 *schemes*).—Birmingham (a third area of 3,173 acres), Blackburn (887 acres), Bournemouth (two areas of 202 and 223 acres), Bridlington (2,730 acres), Chesterfield (64 acres), Halifax (three areas of 877,749 and 655 acres), Leeds (6 acres), Liverpool (two areas of 1,177 and 88 acres), Luton (4,266 acres), Middleton (300 acres; authority to adopt a scheme proposed by owners), Newcastle-upon-Tyne (53 acres), Richmond (514 acres), Scarborough (40 acres), Sheffield (four areas of 1,619, 624, 488, and 97 acres), Southport (2,848 acres), Stoke-upon-Trent (83 acres), Sutton Coldfield (6,378 acres), Stockport (1,044 acres), Wallasey (1,170 acres), Warrington (1,475 acres).



PHOTOGRAPH BY ALINARI, FLORENCE.

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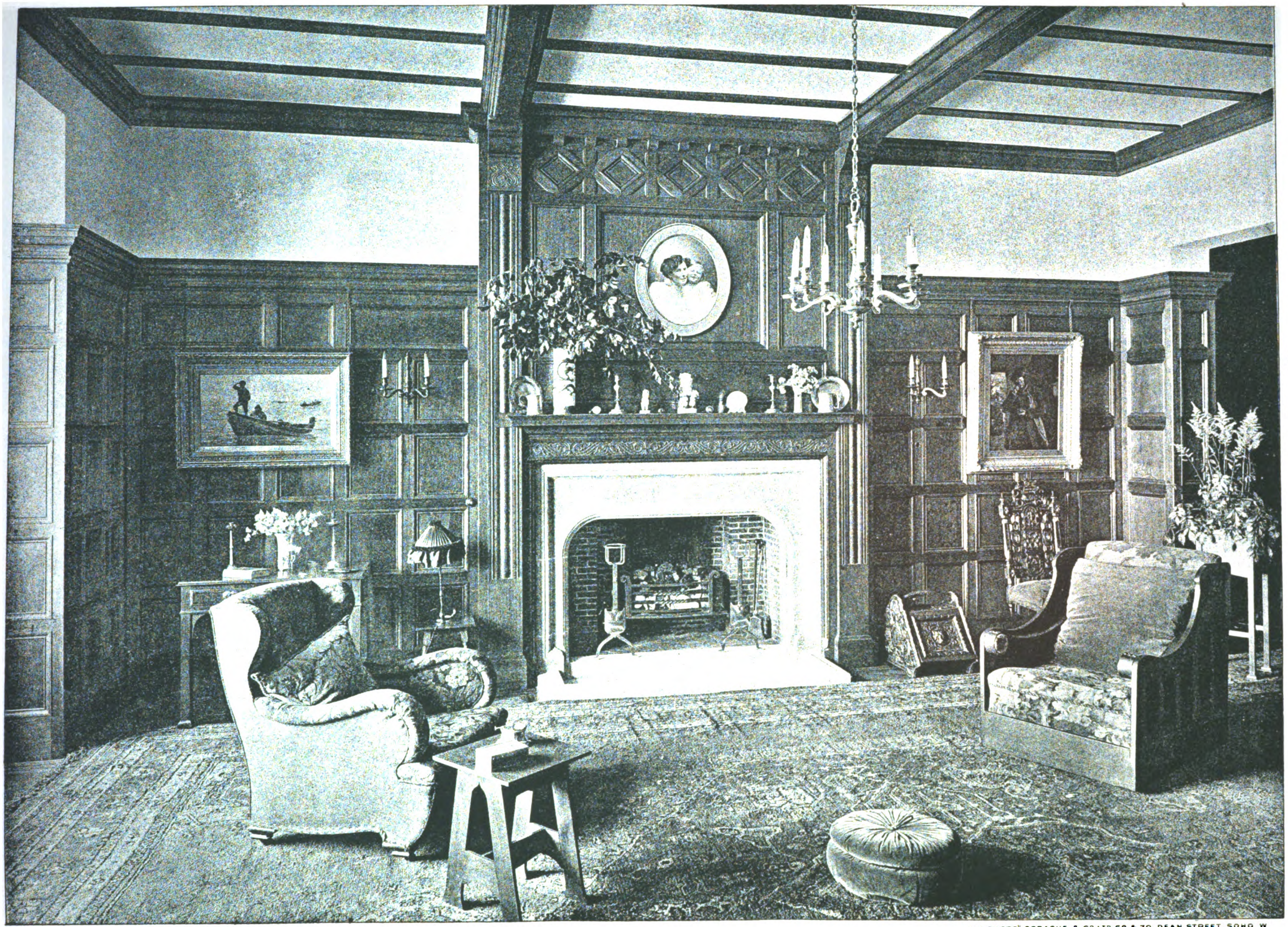
DOORWAY IN PRINCIPAL FAÇADE, SAN CRISTOFORO, LUCCA.



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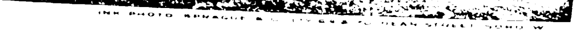
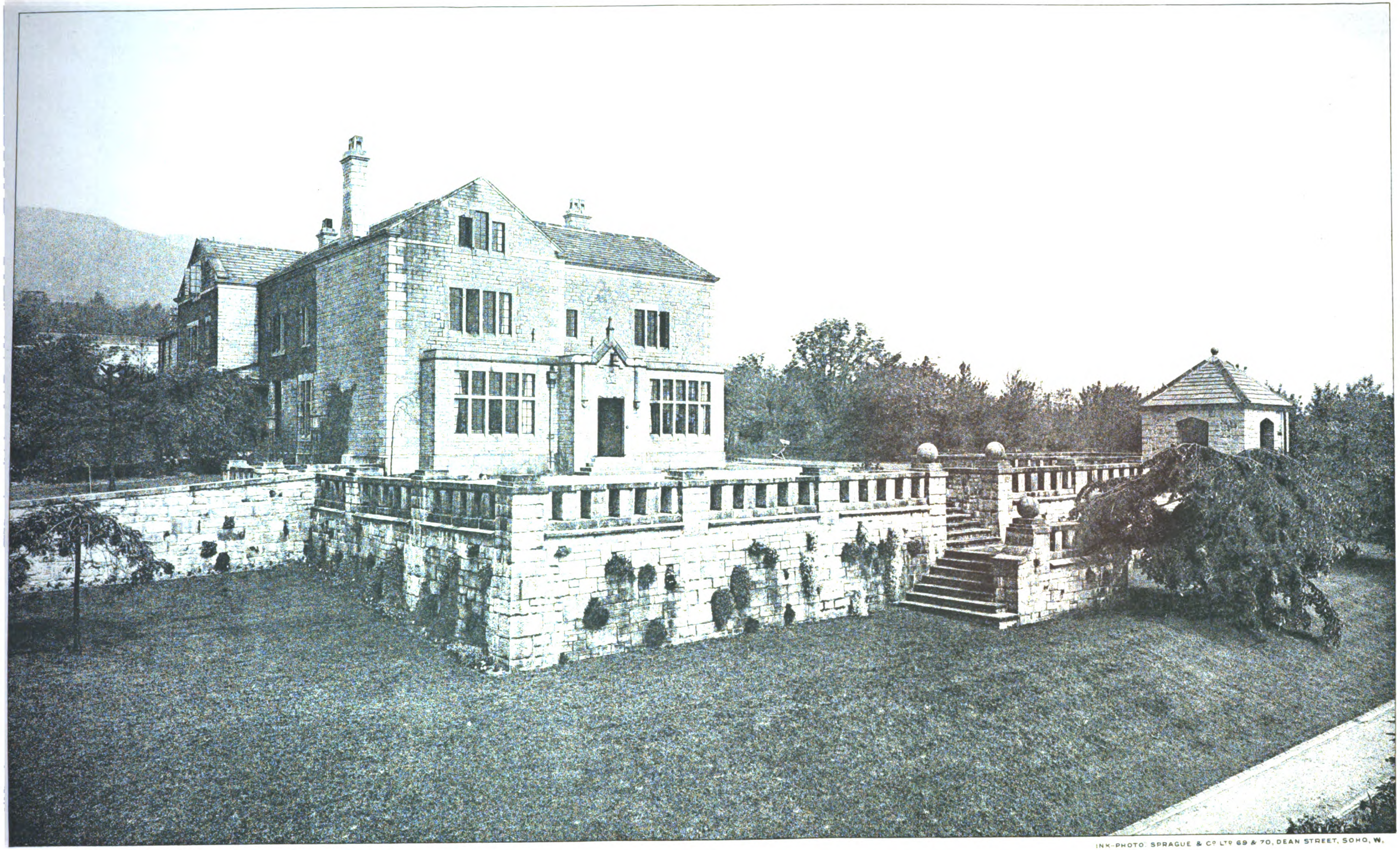
"TOR SIDE," HELMSHORE, LANCASHIRE: THE HALL FIREPLACE.

Mr. JOHN C. PROCTER, A.R.I.B.A., Architect.



SIDE." HELMSHORE, LANCASHIRE; THE HALL FIREPLACE.

INK PHOTO SPRAGUE & CO



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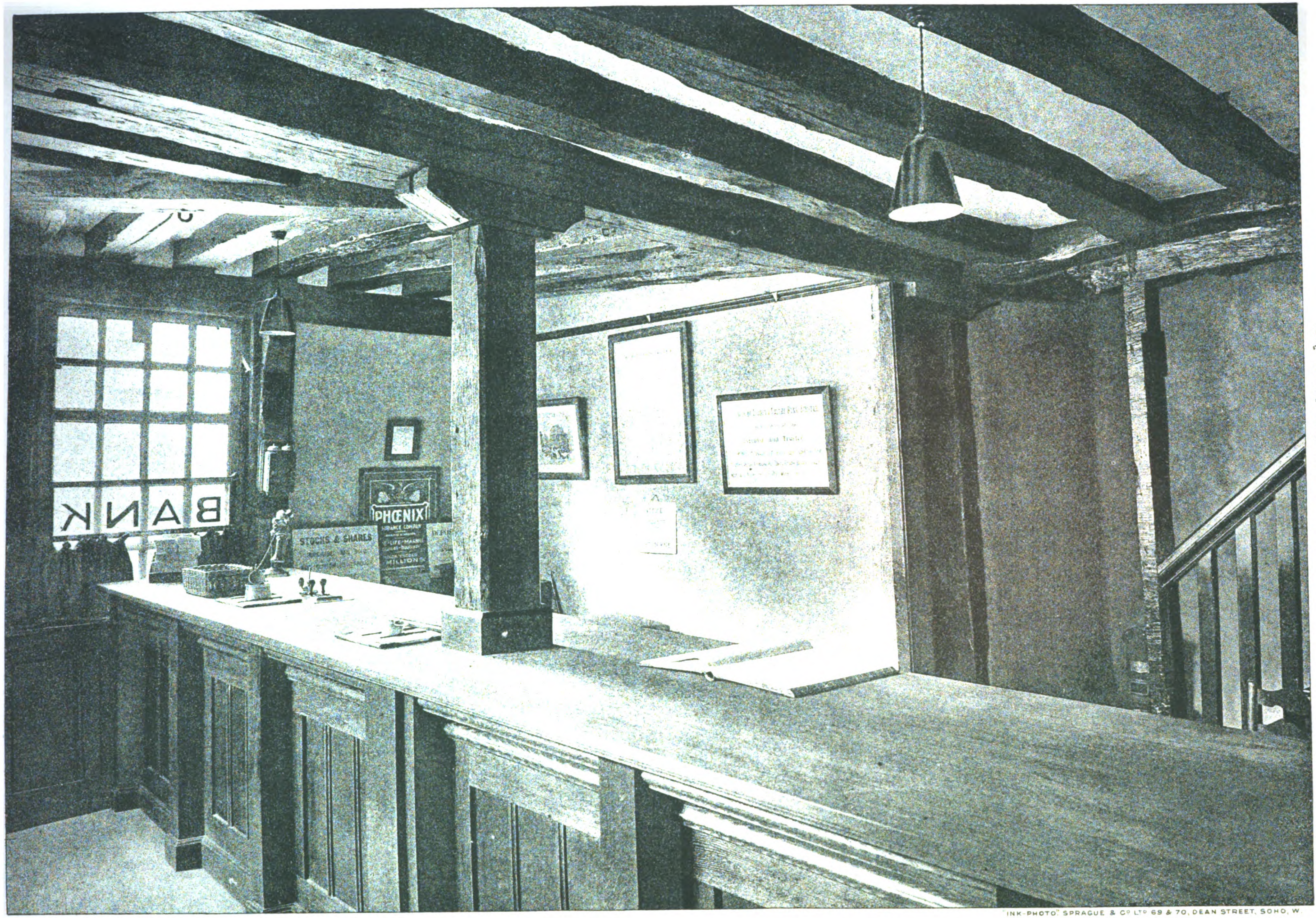
“TOR SIDE,” HELMSHORE, LANCASHIRE: S.W. VIEW.

Mr. JOHN C. PROCTER, A.R.I.B.A., Architect.

The Architect, Jan: 16th 1914.


BANK
PHŒNIX
STOCKS & SHARES
MILLION

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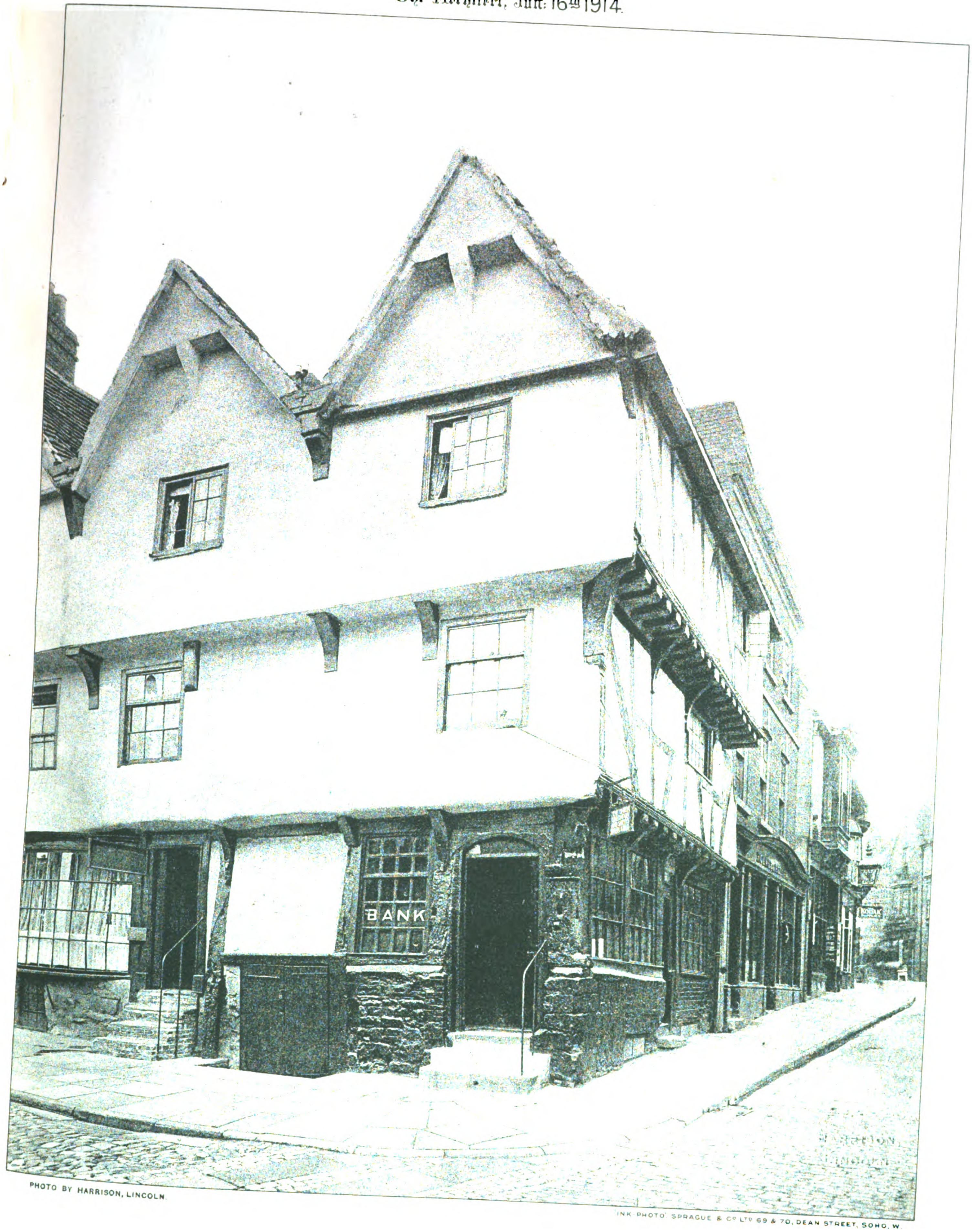
THE UNION OF LONDON & SMITH'S BRANCH BANK, LINCOLN.

Messrs. SCORER & GAMBLE, Architects.



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THE UNION OF LONDON & SMITH'S BRANCH BANK, LINCOLN.

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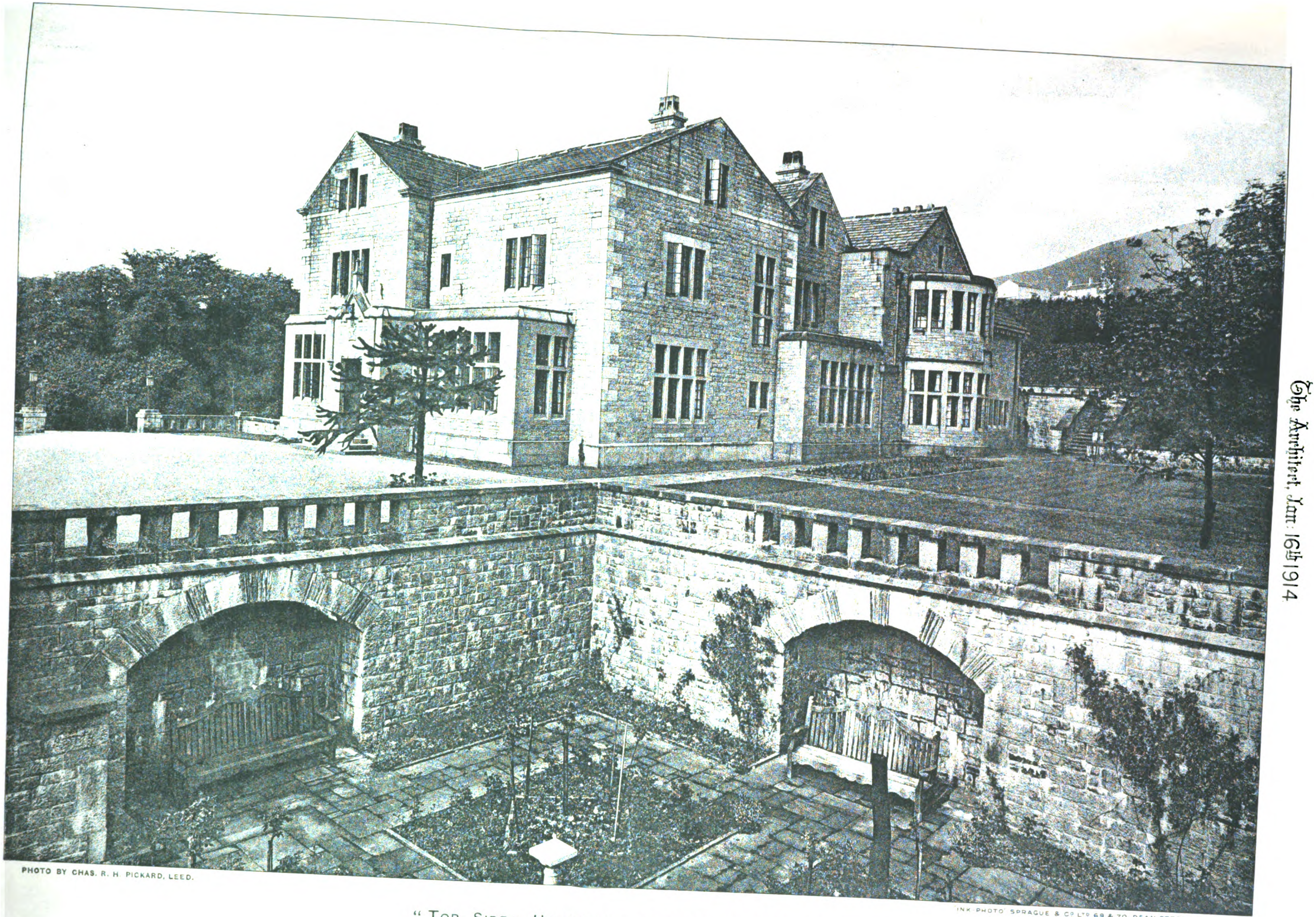

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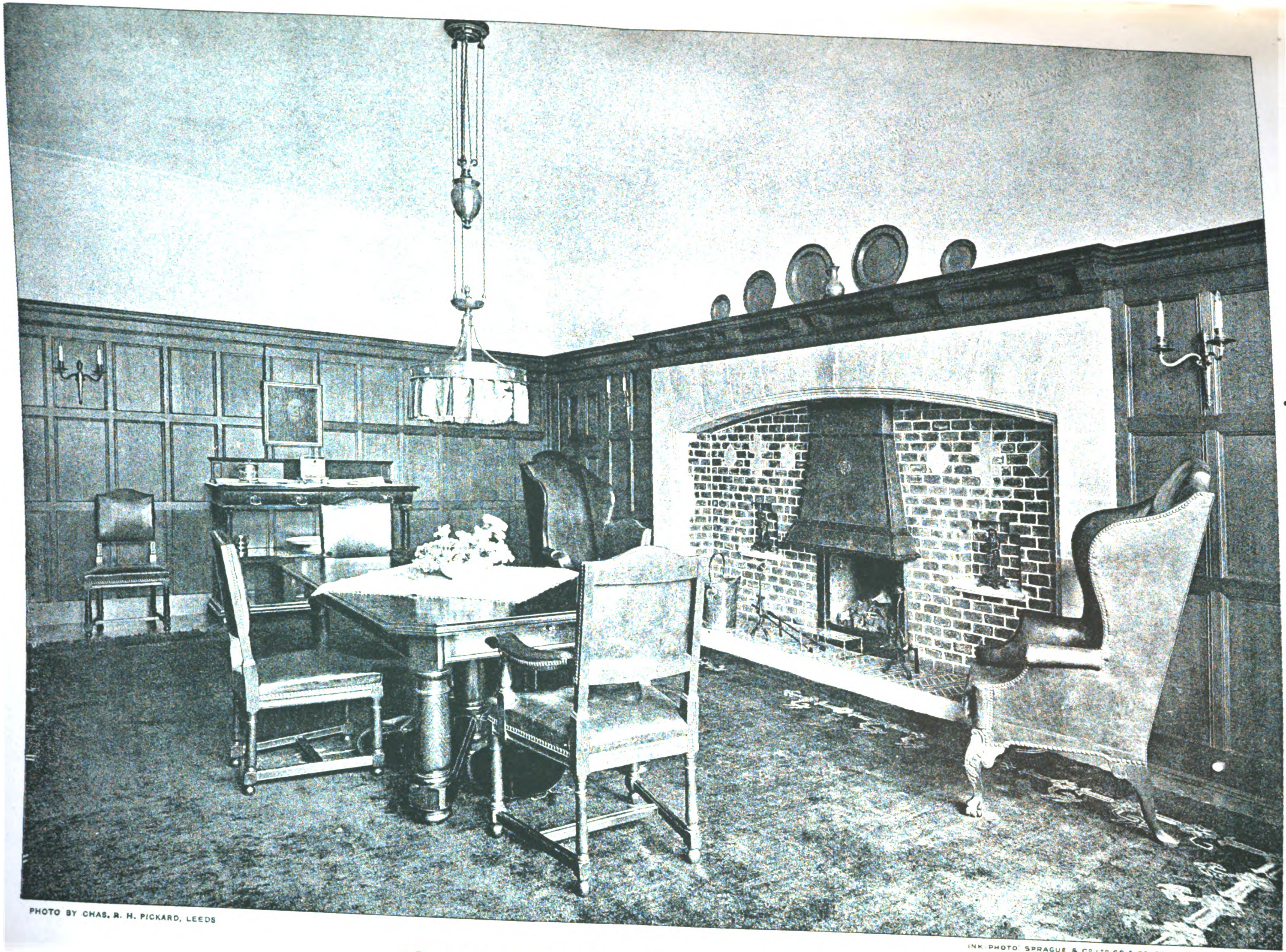
"TOR SIDE," HELMSHORE, LANCASHIRE: S.E. VIEW.

Mr. JOHN C. PROCTER, A.R.I.B.A., Architect.



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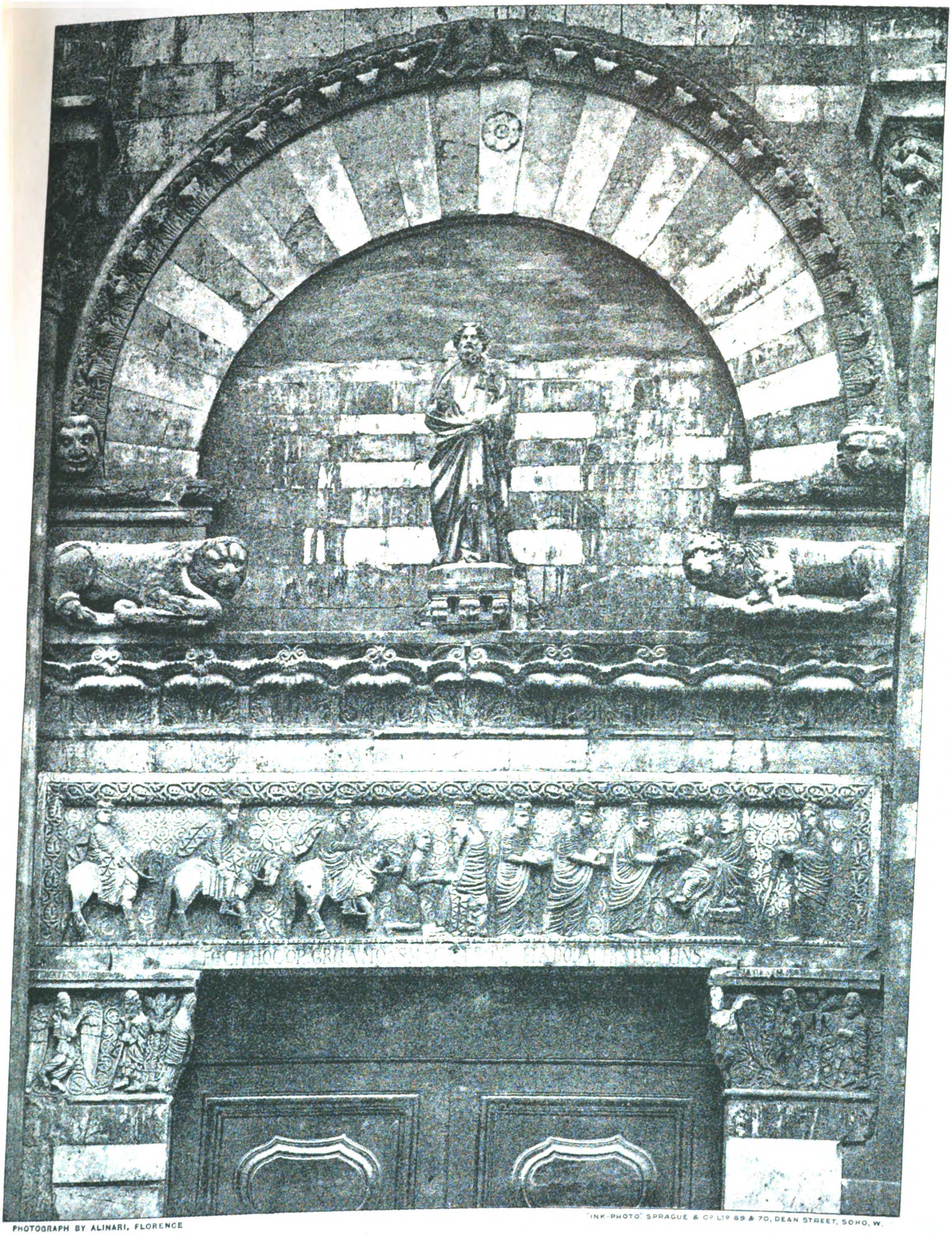
"TOR SIDE," HELMSHORE, LANCASHIRE: DINING ROOM.

Mr. JOHN C. PROCTER, A.R.I.B.A., Architect.

The Architect, Jan: 16th 1914.



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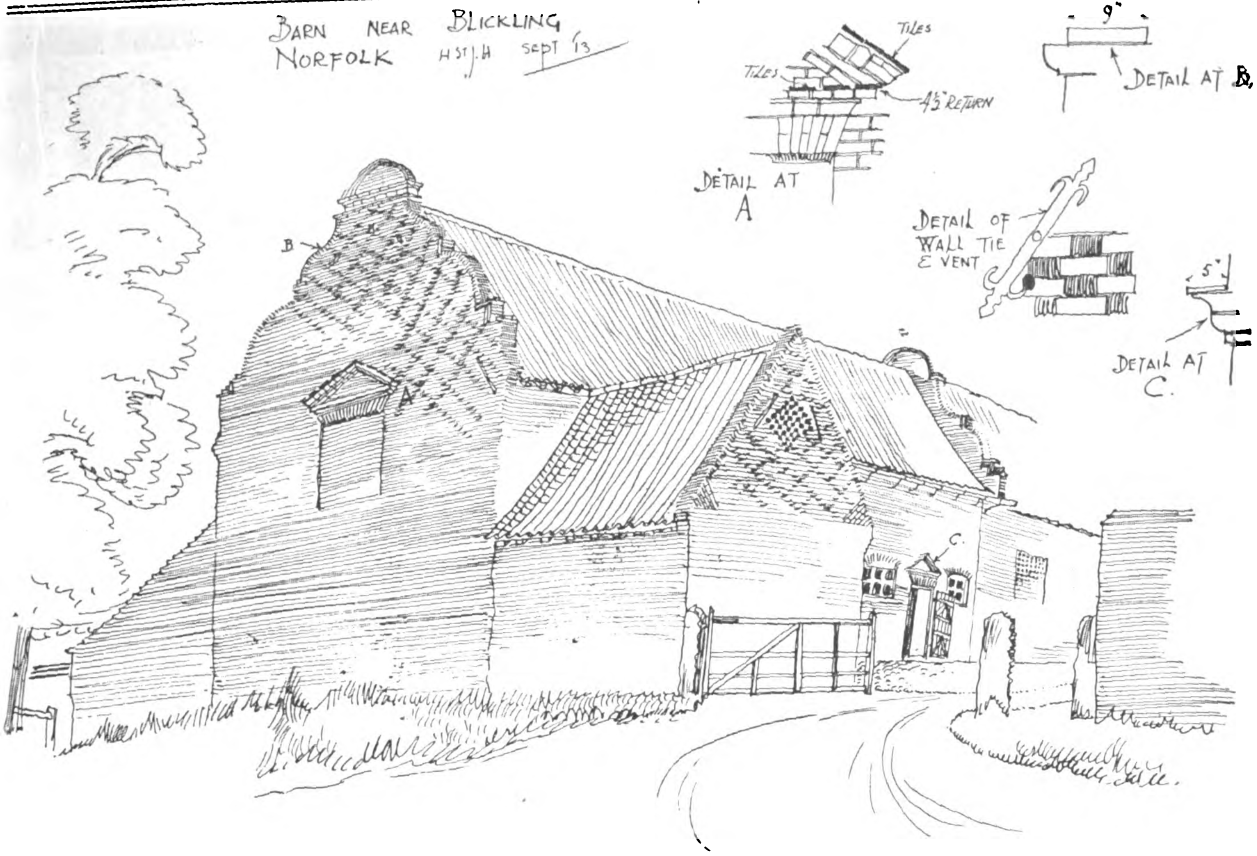
Doorway in Principal Façade, San Andrea, Pistoia.



FROM A SKETCH BY MR. H. ST. JOHN HARRISON, "THE ARCHITECT" TRAVELLING STUDENT, 1913.

Urban District Councils (15) (15 *schemes*).—Allerton* (1,204 acres), Carshalton (2,320 acres), Cheadle and Gatley (471 acres), Ellesmere Port and Whitby (3,539 acres), Finchley (1,044 acres), Ham (976 acres), Hanwell (198 acres), Hazel Grove and Bramhall (1,728 acres), Little Woolton* (420 acres), Much Woolton* (993 acres), Newton-in-Makerfield (2,518 acres), Oldbury (1,763 acres), Prestwich (1,800 acres), Twickenham (1,860 acres), Walthamstow (1,530 acres).

Rural District Councils (2) (5 *schemes*).—Hunslet (410 acres), Wirral (four areas of 5,742, 4,243, 3,431, and 2,880 acres).

The applications for authority to prepare schemes now under the consideration of the Board are from the undermentioned fourteen local authorities in respect of the areas stated:—

Town Councils (4).—Manchester (3,252 acres), Newcastle-upon-Tyne (1,540 acres), Wallasey (6 acres), Wrexham (823 acres).

Urban District Councils (4).—Beckenham (1,816 acres), Harrow-on-the-Hill (1,720 acres), Hendon (5,195 acres), Oldbury (131 acres).

Rural District Councils (6).—Doncaster (5,170 acres), Halesowen (800 acres), Honiton (325 acres), Rotherham (1,112 acres), Wirral (3,710 acres), Wrexham (4,161 acres).

The other cases in which the Board have information that the preliminary notices have been given with a view to applications being made to the Board for authority to prepare schemes are:—

Town Councils (8).—Chesterfield, Manchester, Mansfield, Middlesbrough, Newport (Mon.), Shrewsbury, Tynemouth, Wallsend.

Urban District Councils (9).—Acton, Barnet, Cheadle and Gatley, Heston and Isleworth, Neston and Parkgate, Sidmouth, Surbiton, Willesden, and Wood Green.

It is probable that notices have been given in other cases of which definite information has not reached the Board.

As regards the 119 other cases in which it is known to the Board that local authorities have had the matter under consideration the information in the Board's possession would seem to indicate that the consideration of the matter by the local authorities in some of the cases has reached a stage practically equivalent to a decision to proceed with a scheme.

The details given above show that the movement in favour of town planning has made considerable progress amongst local authorities since the memorandum of November 1912 was issued.

The regulations governing the procedure in regard to town planning schemes and prescribed by the Board under Section 56 of the Act of 1909 have now been in force some three and a half years, and, in view of the experience gained during that period and representations made to the Board in favour of amendment in certain respects, the Board contemplate a revision of the regulations at an early date.

BUILDING PROGRESS IN THE PROVINCES AND SUBURBS.

A LIST OF WORKS PROJECTED OR COMMENCED.

(N.B.—Local Authorities, architects, and others are invited to submit full particulars for insertion in this weekly list. Where districts are not entered against names of architects and builders the address is as a rule local.)

ENGLAND.

BUCKINGHAMSHIRE.

Marlow.—New Boys' Church School and alterations and enlargements to other schools (£5,000).

CHESHIRE.

Knutsford.—Workmen's cottages.

CORNWALL.

Lostwithiel.—Eight workmen's dwellings, Rosehill (£1,325).

CUMBERLAND.

Aspatria.—Twenty working-class houses, Outgang (£5,500).

Bewcastle Park.—Council School: master's residence.

Carlisle.—Electric Lighting Station: extension.

DERBYSHIRE.

Derby.—Elementary School (for 700 places), Clarence Road.

Hilcote.—Stores, New Lane, for the Ripley Provident Industrial and Co-op. Soc., Ltd. Mr. W. Draycott, architect.

Ilkeston.—Infectious Diseases Hospital; tuberculosis pavilion.

*** In these cases the town-planning schemes will be prepared by the Corporation of Liverpool, the urban districts of Allerton, Little Woolton, and Much Woolton having been incorporated with the city of Liverpool as from November 9 last.**

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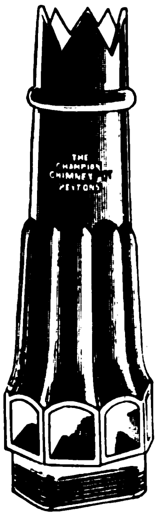

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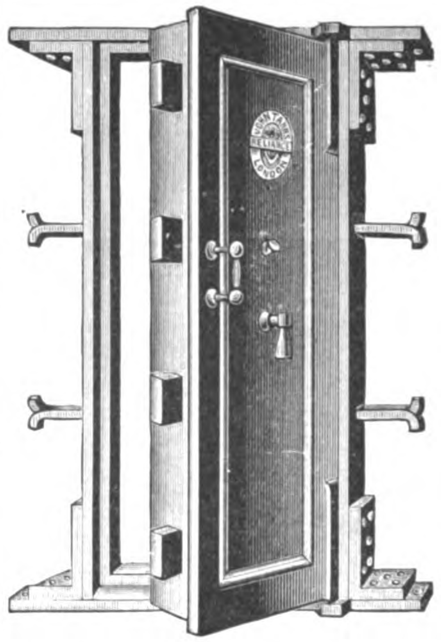

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ENGLAND—*continued.*

DEVON.

Buckfastleigh.—Artisans' dwellings. Council surveyor.

Devonport.—Council School, College Road (for 247 places). £2,850.

DORSET.

Parkstone.—St. Osmund's Church: completion (£7,000). Prof. E. S. Prior, F.R.I.B.A., architect, 1 Hare Court, Temple, London.

Poole.—St. Mary's Church, Longfleet: reconstruction. Mr. H. Kendall, architect, Towngate Street (also at Parkstone).

DURHAM.

Auckland Park.—Church Hall. Mr. D. Crawford, architect, 54 Market Place, Bishop Auckland.

Brandon Colliery.—House, Station Avenue: additions and alterations for Mr. R. Wood.

Gateshead.—St. Aidan's Parsonage house. Mr. W. H. Wood, F.R.I.B.A., architect, 20 Collingwood Street, Newcastle-on-Tyne.

Public Elementary R.C. School (for about 600 places), Hawk's Road.

Houghton-le-Spring.—Fifty-two working-class houses, near Newtown (£11,750).

Shotley Bridge.—Children's homes for the Gateshead Board of Guardians (£4,800).

Sunderland.—Convent, Tunstall Road. Messrs. W. & T. R. Milburn, FF.R.I.B.A., architects, 19 Fawcett Street.

ESSEX.

Barking.—The "George" Hotel, Broadway: alterations.

Hainault Forest.—School buildings: enlargement.

Ilford.—Wesleyan Church, The Drive.

Hospital: phthisis pavilion for twelve beds (£1,400). Mr. H. Shaw, Council surveyor.

Tilbury.—Vicarage, corner of Dock and Ottawa Roads, for Rev. A. C. Kibble.

GLOUCESTERSHIRE.

Cheltenham.—P.M. Church.

Dean Forest.—About 100 working-class houses.

Wotton-under-Edge.—Eight working-class dwellings, Bradley and Gloucester Streets.

KENT.

Broadstairs.—Council School (for 320 places) and Special Subjects Centre, The Vale (£4,850).

Ebbsfleet.—Golf Club House for St. Augustine's Links. Mr. S. H. Page, F.S.I., architect, 6 Queen Street, Ramsgate, and Messrs. Grummant Bros., contractors, Grange Road, Ramsgate; also

Ramsgate.—House for Mr. W. A. Fenwick.

LANCASHIRE.

Bolton.—Cotton Store, Back Norwood Grove, for Messrs. Wolfenden & Son.

Houses, Ainsworth Lane and Alexander Road, for Messrs. Leigh Bros., Ltd.

Thirteen houses, Beverley Road, for Mr. G. Duxbury.

Electric Theatre, Blackburn Road, Astley Bridge. Mr. T. E. Smith, architect, Central Chambers, Fold Street.

Villas, Greenmount Lane, for Mr. W. Morris.

Pair of Villas, Junction Road, for Messrs. Taylor & Isherwood.

Mossley.—Public Swimming Bath.

Oldham.—Public baths and washhouses (£3,300).

NORTHAMPTONSHIRE.

Northampton.—Proposed public baths, Abington Street.

Rushden.—Boot Factory, Harborough Road (£4,000). Mr. A. Anderson, architect, Market Square, Northampton. Mr. T. Swindall, contractor, Moore Road.

NORTHUMBERLAND.

Hexham.—Proposed Picture Hall, Battle Hill, for Mr. D. Scott.

Newcastle-on-Tyne.—Mortuary and post-mortem room; conversion of toll-house, Swing Bridge. Messrs. S. Fenwick & Co., contractors, Northumberland Road (£925).

SOMERSET.

Bath.—Technical Institute, Twerton-on-Avon: alterations, &c. (£1,100).

Blagdon.—Elementary School.

Hemington and Whitchurch.—Teachers' houses for Education Committee.

Wells.—Tuberculosis Sanatorium, King's Castle. Mr. Cotterill (of Bristol), architect.

Whitchurch.—See above.

Wiveliscombe.—Working-class dwellings.

STAFFORDSHIRE.

Bramshall.—Elementary School.

Lichfield.—Board-room and Offices, Trent Valley Road, for the Board of Guardians (£2,000).

Newcastle-under-Lyme.—Public Library, Marsh Street.

Penkridge.—Wesleyan Methodist Church.

Stramshall.—Elementary School.

SURREY.

Chobham.—Workmen's cottages, for Chertsey R.D.C. Council surveyor. Messrs. Crossley & Son, contractors, Bromley (£3,373).

Croydon.—Picture House, London Road (for 1,300 places), for the Cinema Control (of Charing Cross Road).

Richmond-on-Thames.—Picture Theatre (for 1,500 to 2,000 places), for Mr. Joseph Mears.

SUSSEX.

Bognor.—Sixteen workmen's cottages. Mr. O. A. Bridges, Council surveyor.

Eastbourne.—Hospital. Borough surveyor.

Little Common.—Sub-Fire Station, Sea Road. Mr. G. Ball, Council surveyor, Town Hall, Bexhill.

WARWICKSHIRE.

Birmingham.—Council School, Boulton Road, Handsworth. Messrs. Wood & Kendrick, architects, 57 Colmore Row.

Coventry.—R.C. School, Stanley Street.

WILTSHIRE.

Warminster.—Workmen's houses.

WORCESTERSHIRE.

Bretforton.—Housing scheme.

Castlemorton.—Four Council cottages (£880).

Littleton.—Twenty-four Council cottages. Surveyor to Evesham R.D.C.

Malvern.—Council School, Pickersleigh Road.

YORKSHIRE.

Bridlington.—Workmen's houses, Portland Place and Ashfield Street (£6,000).

Hull.—Cattle Market: extension.

Kirkby, Old.—"Old Crown Inn": additions and alterations.

Rossington.—Elementary School for 1,000 places (£12,000). Mr. J. Stuart, architect, County Hall, Wakefield.

Scarborough.—Londesborough Theatre: rebuilding (for 1,270 places). £10,000 to £12,000. Mr. Watson (of Leeds), architect.

Skipton.—Congregational Church (£4,000).

WALES.

Cardiff.—The John Cory Sailors' and Soldiers' Rest: enlargement. Mr. W. H. Scott, architect, 18 Queen Street.

Conway.—Joint Hospital: additions and alterations. Messrs. T. B. Farrington & Son, architects, Trinity Square, Llandudno.

Llanddulas.—Workmen's dwellings, for Denbigh R.D.C. (£2,300).

Llandovery.—Motor garage, for Messrs. D. Jones & Son. Mr. G. Moxham, F.R.I.B.A., architect, 18 Castle Street, Swansea.

Llandudno.—Holland cottages, Bodafon Road: additions and alterations for Mrs. E. Jones.

House, West Parade, for Mr. D. Davies.

Seven houses, St. David's Place, for Mr. J. Owen.

G.F.S. Lodge, Church Walks: additions and alterations.

Motor showrooms and workshop, Mostyn Avenue, for Mr. W. Wilkes-Green.

Mold.—Business premises, No. 26 High Street. Mr. F. A. Roberts, architect, Earl Chambers, Earl Road.

Penmaenmawr.—Municipal Buildings.

SCOTLAND.

Aberdeen.—Garage, Union Row, for Messrs. Claud Hamilton (Aberdeen), Ltd. Messrs. Jenkins & Marr, architects, 18 Bridge Street.

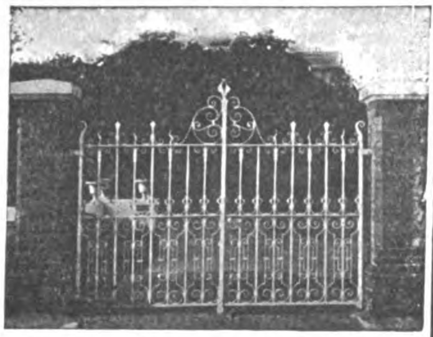
Garage to No. 252 Holburn Street, for Dr. W. Shirreffs. Mr. John Milne, architect; also

Nos. 24-26 King Street: additions and alterations.

Nos. 20-22 King Street: alterations. Messrs. Wilsons & Walker, AA.R.I.B.A., architects, 181A Union Street.

House, Victoria Road. Mr. J. A. O. Allan, architect, 25 Union Terrace.

Store, Palmerston Road, for Messrs. W. Davidson & Co., Ltd.



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PATENT SPECIFICATIONS PUBLISHED JANUARY 8, 1914

Selected and abridged by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

No. 28,823. Dec. 14, 1912.—F. M. Whetstone, 209 East 58th Street, Chicago, U.S.A. Machines for the production of expanded metal sheets.

29,128. Dec. 18, 1912.—Entwistle & Kenyon, Ltd., W. H. Kenyon & J. L. Shorrock, all of Ewbank Works, Accrington. Vacuum cleaners for carpets and floors.

29,253. Dec. 19, 1912.—J. A. Terry, 18 Leopold Road, East Finchley, N. Sliding window-sash frames.

29,443. Dec. 21, 1912.—George Anderson & Co. (1905), Ltd., and A. G. Grice, all of Carnoustie, Forfar. Band saws for cutting stone and the like.

194. Jan. 3, 1913.—Leopold Myers, of Charlotte Street Steel Pen Works, Charlotte Street, Birmingham. Manufacture of certain kinds of drawing compasses.

716. Jan. 9, 1913.—Ernest Saunders, 144 Broadway, Bexley Heath, Kent. Cocks and taps.

1,008. Jan. 14, 1913.—J. R. Parker, 35 Great Hampton Row, Birmingham. Knobs for cupboard doors and other like uses.

1,524. Jan. 20, 1913.—H. S. Valentine, 3 Port Street, Stirling. Gas fires.

2,239. Jan. 28, 1913.—Dated under International Convention Aug. 19, 1912. C. L. Carlson, Mastersamuelsgatan 34, Stockholm. Process for the manufacture of an hydraulic cement.

2,390. Jan. 29, 1913.—Eugen Aron, 43 Great Eastern Street, and W. D. Talbert, of the same address. Devices for preventing windows, doors, and the like from rattling.

2,945. Feb. 5, 1913.—G. W. Stokes, 27 Swann Lane, Cheadle Hulme, Chester. Reinforced concrete constructions.

4,763. Feb. 25, 1913.—Frederick Board, 60 Greville Road, Southville, Bristol. Combined valve and liquid current regulator for use more particularly in connection with hot-water heating apparatus.

5,366. March 3, 1913.—Dated under International Convention March 4, 1912. S. B. Marchant, Balaklava, South Australia. Erection and construction of walls of buildings.

6,426. March 15, 1913.—W. C. Priddy, The Old House, Oughtibridge, near Sheffield. Construction of brick moulds.

6,441. Aug. 5, 1913.—David Kirkwood, Quarrelton, Johnstone, Renfrewshire. Slate-drilling machines.

7,136. March 25, 1913.—H. P. H. Gilson and H. W Cooper & Co., Ltd., 28A Upper George Street, Edgware Road, W. Circular glass ventilators.

9,584. April 23, 1913.—Dated under International Convention April 24, 1912. D. G. De Milt, 704 Franklin Street, Tampa, Hillsborough, Florida, U.S.A. Faucets or valves and cocks.

10,739. May 7, 1913.—C. G. Monro, Queen Street, Auckland, New Zealand, architect. Anti-rattling device for windows.

11,507. May 17, 1913.—Friedrich Schmeling, 13 Bahnhofstr, Gresen, Germany, architect. Floors made of hollow stones or bricks.

12,250. May 26, 1913.—J. L. Beck, 22 Noel Street, Springfield, Mampden, Mass., and A. N. Piersen, Mair Street, Cromwell, Middlesex, U.S.A. Flushing valves.

10,505. May 5, 1913.—W. A. Williams and the North British Rubber Company, Ltd., all of Castle Mills, Fountainbridge, Edinburgh. Process for use in the manufacture of rubber tiles or sheets.

14,599. June 24, 1913.—Robert Leeson, 27 Wood Street, Hyde Road, Gorton, Manchester, and W. J. C. Cheetham, 311 Mill Street, Bradford. Balancing devices for sliding sashes.

18,604. Aug. 15, 1913.—Dated under International Convention Aug. 16, 1912. Camille Lacoste, 6 rue Eugene Millon, Paris. Metallic frame-work constructions for roofs, tents, sheds, lighthouses, and the like.

19,637. Aug. 30, 1913.—William Ashmore, 78 Owen Road, Wolverhampton. Gas, water, and like cocks.

20,579. Sept. 11, 1913.—Hans von Beck, 249 Recht Wienzeile, Vienna XII. Apparatus for sprinkling the roofs of houses in case of fire.

Any of the above specifications may be obtained from J. D. Roots & Co.

Correspondence

[The Editor will not be responsible for the opinions expressed by Correspondents.]

The Latest Registration Bill.

Sir,—One of the objects of the promoters of the Society's Bill is in a fair way of being attained through the medium of the professional journals, viz. the securing of criticisms on points of detail. You ask whether the Society has purged itself of all its non-professional members, and whether they are to be specially favoured beyond those of other Societies. About twenty-seven years ago the handful of "non-professional folk" was transferred to a special closed class of Associates, which class has since been abolished, and the two or three survivors transferred to honorary membership. The clause as at present drafted applies equally to non-professional members of the R.I.B.A.

On the question of protecting vested interests, you bring forward the old argument that there are some eminent architects who will not consent to be placed on the same register with everyone who to-day calls himself an architect, or who may even be "actually practising architecture" in a legal sense, at the time of the passing of the Act. If these gentlemen oppose the Bill on those grounds, why do they not remove their names from the various directories of architects, where they are at present exactly in the same position as you suggest they would be under a Registration Act? These eminent architects must, like many others less eminent, be in favour of the principle of registration, or they would not permit themselves to be registered by the Royal Academy or by the R.I.B.A.

Some of the proposed clauses in the Society's Bill appear to have afforded you some amusement. That is well; but it is not very helpful to the promoters of the Bill, with which measure you are admittedly in sympathy in principle.—

Yours faithfully,

C. McArthur Butler,
Secretary, The Society of Architects.

January 13, 1914.

Sir,—I have read your article on "The Latest Registration Bill" with some degree of regret, because I feel that the Royal Institute are not taking the question of registration seriously enough, and the younger body, the Society of Architects, are full of enthusiasm, and your article is rather inclined to throw cold water upon the scheme. I have nothing to say against your arguments except from the statement repeated of "the handful of eminent architects" who will kill the Bill in the Lobby. Surely their very eminence should have the effect of broadening their minds, and not, as you seem to suggest, narrowing them. It is the country practitioners who are suffering by the want of registration, not perhaps to the same extent as the Londoner, and it is the country member who, perhaps not so seriously, considering the minor details, is convinced that registration is not only desirable, but *imperative.* To-day I have seen a card of an architect, and it reads as follows: "Mr. Blank Blank, Land Agent, Architect, and Surveyor," then the address. At the foot this interesting line is added: "Plans made, sanitary

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surveys. Terms on application." Please note, Mr. Editor, *terms on application*. Now is this professional or is it not? If it *is*, then architecture is not a profession, but a trade, so we may as well cease our humbug, put in adverts. stating we are open to tender for our work, offer to receive commissions, and generally conduct our professional work on the basis of a local tradesman, and take up any and all work we can find the required capital to carry out. One could then carry out a job for the Slocum-on-the-Mud District Council on tender, acting as agent, architect, quantity surveyor, builder, run in fees as a specialist in sanitation, heating, and lighting, and ending up by offering, for an annual fee, to keep in repair. The country member is, believe me, looking anxiously for an alteration. How long shall we wait?

May *The Architect and Contract Reporter* lend its influence to this object is the sincere wish of an old reader.

Country Practitioner.

January 12, 1914.

Registration and the Society of Architects.

Sir,—Apparently some copies of my open letter of January 1 were posted after January 5, on which date there happened to be a meeting of the R.I.B.A. The coincidence was accidental so far as I am concerned, and the overdue posting, if any, occurred without my knowledge, and was contrary to my instructions.

Mr. Perks pays me a great compliment by endeavouring to put a spoke in my wheel. He suggests, in his usual courteous manner, that the Society is "touting" for members. Does he recollect the methods employed by the Institute, quite legitimately in my opinion, in their endeavours to rake in Licentiates some time ago, admittedly with a view of promoting that form of registration which they now find themselves unable to undertake? What name has he for that procedure? Two blacks do not make a white, but if one is to be a sinner, one loses nothing by erring in good company.

I understand that the meeting at the Institute on January 5 was unanimous in preferring a new Charter to registration, but I think it perfectly fair to point out that even a crowded meeting at the R.I.B.A., when voting is limited to those present, does not necessarily represent the feeling of the majority of its members, particularly those in the provinces. I am receiving letters every day from members of the Institute which confirm this view.—Yours faithfully,

C. McArthur Butler,
Secretary, the Society of Architects.

January 10, 1914.

Architecture and Politics.

Sir,—I have known your interesting paper for many years, and have always regarded it as a professional paper devoted to architecture and allied subjects.

I was much surprised on reading the current number to find a political article under the head of "Architecture in 1913" that might have been taken from the *Daily Mail* or *Express*.

Does it occur to you that professional men of all shades of politics read your paper? Is it wise to allow political claptrap to drift into your columns? What has the "Little Navy" or "Suicide Club" got to do with architecture?—Yours faithfully,

Edm. Jno. Burr, F.S.I.

5 Queen Square, Bloomsbury, London, W.C.:
January 13, 1914.

[The financial schemes and blunders of the present Chancellor of the Exchequer have, in the general opinion of architects and builders, been detrimental to the building industry. We have seen cause to write strongly at other times with reference to the policy of both parties affecting the building trades.—Ed.]

Progress of School Hygiene.

Sir,—With reference to your extracts (in your issue of January 9) from a discussion on a report on the fourth International Congress on School Hygiene at Buffalo, America.

In running through the extracts you give one would like to point out that no mention apparently is made as to what kind of covering composes the interior walls. This is obviously a most important matter, and it would be well if the Americans would give just a little more attention to it, as the writer understands the American plasters (perhaps not all) are retarded with the blood products of Chicago; therefore, if such is the case, even though the walls may be distempered, it is a question whether the heat of the room may not propagate germs, &c., which may penetrate the distemper, at any rate where cracks appear or where paint may flake off. The English children have a decided advantage in this respect, as no such filthy retarder to attract flies to walls and ceilings of rooms, as well as to propagate germs, is used by the manufacturers of the popular Sirapite plaster cement (which is made here), as this material is made from natural stone, properly and thoroughly calcined; not even glue is used in its manufacture.

A new type of school was illustrated by a contemporary of yours in their issue of April 16, 1913, which has been completed at Loose, near Maidstone, from designs prepared by Mr. W. H. Robinson, M.S.A., architect to the Kent Education Committee. This school embodies some of the latest developments in the planning of elementary schools in the county of Kent, and to those of your readers who are interested I shall be very pleased to send them a copy of the matter and illustrations extracted from the journal giving the particulars.

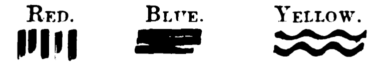
With apologies for taking up so much of your valuable space.—Yours truly,

Thomas J. Collins,
Foundation Manager N. School.

Mountfield, Robertsbridge, Sussex:
January 12, 1914.

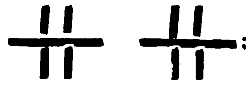
Colour Shorthand.

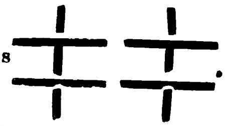
Sir,—The following shorthand of colour may be of use both to artists and architects when making notes. I have used it for years and have found it satisfactory, as it is so simple. The pencil most convenient is an H.B. The darker the stroke the more intense the tint, and, of course, lighter tints by lighter strokes. The primaries are as follows:—



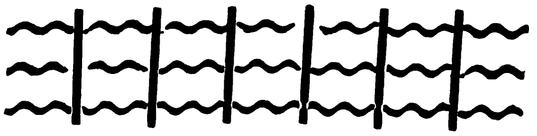
The first two like the lines used in heraldry.

Secondaries.

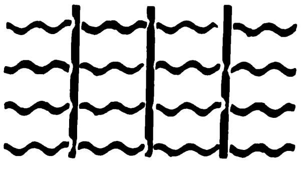
As red and blue combine to make violet then a vertical line red and a horizontal one blue produce a cross + which can be used so: + + + + + + +; if the line is reddish violet then the cross would have two vertical lines: ;

if bluer in tint then more horizontal ones .

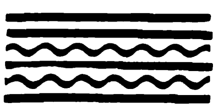
Orange, combination of red and yellow, would be



More vertical strokes if red predominates, and more undulating ones if yellow is dominant:—



Green, a combination of yellow and blue, would be:—



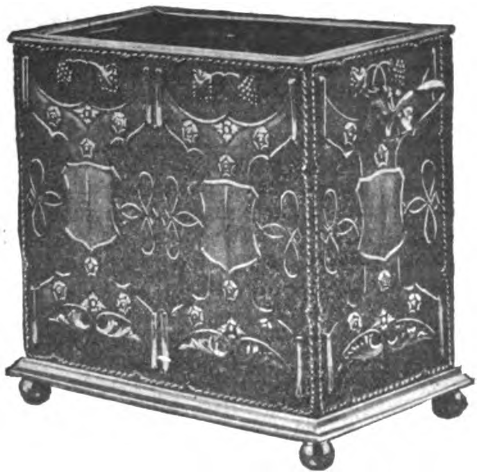
The same principle would hold good in multiplying the lines according to hue.

The paper would, of course, be left white for white, and deepest black of pencil for black.

Greys could be represented by half-tones of the pencil.—Yours truly,

Sydney Herbert.

Carlton Lodge, Cheltenham.



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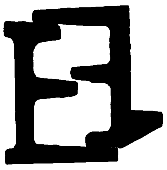

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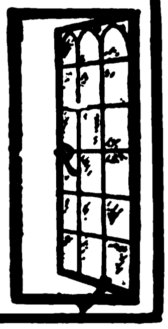

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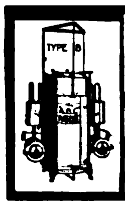

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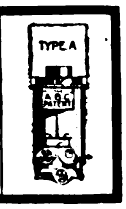

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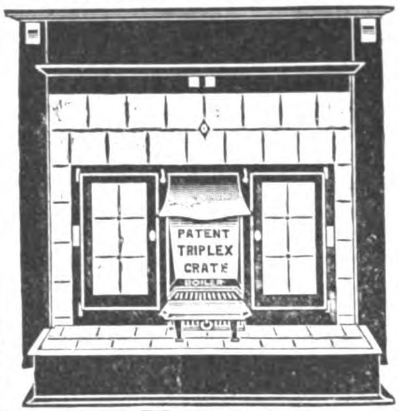

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FORTHCOMING EVENTS.

Monday, January 26.

Royal Institute of British Architects: Paper entitled "London's Traffic Problems," by Colonel Sir Herbert Jekyll, K.C.M.G.; Announcement of Prizes and Studentships, at 8 P.M.

Royal Academy: Lectures on Architecture (1) "Mediæval Architecture: Its Nature and Basis of Art," by Professor Edward S. Prior, F.S.A., at 4 P.M.

Surveyors' Institution: Paper entitled "Measuring and Quantity Surveying," by Mr. George Corderoy, F.S.I., at 8 P.M.

Liverpool Architectural Society: Paper entitled "Interior Designs in Wren's Churches," by Mr. Arthur Keen, F.R.I.B.A., at 6 P.M.

Tuesday, January 27.

Royal Institute of British Architects: Exhibition of R.I.B.A. Prize Competition Designs (January 27—February 9).

Wednesday, January 28.

Royal Society of Arts: Paper entitled "Japanese Colour Prints," by Mr. Edward F. Strange, R.E., at 8 P.M.

Carpenters' Hall: Paper entitled "Romanesque Ornament," by Mr. F. Hamilton Jackson, R.B.A., at 7.45.

Manchester Society of Architects: Paper by Mr. Arthur Dixon, at 6.30 P.M.

Thursday, January 29.

Leeds and Yorkshire Architectural Society: Paper entitled "The English Home and the English Weather," by Mr. Roger Oldham, at 6.30 P.M.

TIMBER TRADE IN 1913.

IT is always interesting to study the records of the trade in timber, as it would be of those in any other staple building material if statistics of a reliable character were obtainable. The fact that practically the whole of the timber used in building is imported places this material on a very different footing as regards statistical information to that occupied by, let us say, brick or stone. On the other hand, the building trade is not the only industry that uses timber, so that the importation figures are not an exact criterion of activity in the building trade any more than the returns from the trade unions give a correct estimate of the extent of unemployment.

The most remarkable fact about the soft-wood importations has been the very great increase in the amount of shipments from Russia, which is responsible for 63 per cent., while Sweden also has contributed 17 per cent. of an increase which has brought up the grand total of loads imported into the United Kingdom in the year 1913 to 11,589,811, as against 10,058,384 in the preceding year and 9,740,436 in 1911. Not only has the quantity of timber imported into the United Kingdom increased in accordance with these figures, but the average import cost per standard, largely due to the influence of high freights, also continues to rise year by year, the figure for 1913 being £10 9s. 3d. per standard, as against £9 18s. 3d. in 1912 and £9 9s. in 1911. The increased importation during the past year has not applied to the shipbuilding ports in the Clyde, the Tyne, and the Tees, so that the larger amount of timber imported has presumably been for the use of the building trade and manufacturing industries other than shipbuilding.

The London returns show an increase of about 19 per cent. above 1912, thus accounting for nearly one-quarter of the total surplus and leading to congestion of the dock quays, with attendant delay in marketing in the goods which has cost much harm to the timber trade during the fine months. It appears that in the latter part of the year the supply of timber rather exceeded the demand, so that stocks have been accumulating at the end of the year. The first nine months of the year showed good prices and a good demand, the high prices that had been established being accepted as the established order of things by the trade at large, including the consumers. Timber merchants were therefore at this time making good profits, and it would appear that the anxiety of the shippers to share in the general trade boom led to an increase of supply which defeated its own object. Although there is at present a surplus of stock the timber trade regards the prospect of an increase in consumption in the near future as particularly hopeful in view of the predicted revival of house and cottage building.

The present position of stocks in the soft-wood trade may be estimated from the ratio of import to consumption given by Messrs. Foy, Morgan & Co. in their annual wood report. Deals (fir) show 106 per cent.; battens (fir) 98; pine 103; spruce 121; pitch pine planks 242; deals and battens in aggregate 103; rough boards 117; planed boards 93; floated timber 134. From these figures it would appear that although the stocks of most varieties of timber have increased, pitch pine planks especially have been responsible for a great deal of the congestion.

In the hard-wood market, taking first of all mahogany, the feature of the year has been the great increase in the amount of this timber imported from Africa, which during the past year has sent us 21,829 tons, as against 12,700 in the preceding year. These large figures have helped to build up an increase in the total importation of mahogany into London to about 47 per cent. beyond that for the preceding twelve months, and amounting to a total far beyond the figures recorded for many years. Other elements in the increase have been a comparatively large shipment of round logs from Nicaragua and also an increased quantity from Honduras. The greater part of the increase has arisen from September to the end of the year. The year opened with moderate stocks at the docks, and the fresh supplies which arrived during the first half of the year were totally inadequate to the demand, so that stocks at the docks during that period fell to somewhat meagre proportions.

The heavy importations during the last four months have caused the dock stocks at the end of the year to stand very much higher than they did twelve months previously. The importations from Honduras show an increase of nearly 25 per cent., as compared with the previous year, but although the supplies during the last three months of the year have been well maintained the stock of Honduras mahogany in the docks is at a very modest figure. The prices of mahogany in 1913 are considered to be a record, more by reason of the lower quality and size of the timber for which prices have been paid than for actual prices themselves. From Mexico the importations during 1913 have been almost insignificant and amount to about one-third of the quantity for the previous year. Most of the logs have been round in shape and there has not been a single cargo or parcel of good square logs such as this market was accustomed to receive in days gone by. From Cuba the quantity imported during the present year is almost identical with that of the previous year, but the quality is decidedly inferior, as the average size of the logs is a great deal smaller. From San Domingo and Guatemala the importations are insignificant. Costa Rica has sent about 350 tons, the logs being of good quality and fair size which have met with a ready sale at excellent prices. Nicaragua, as we have already mentioned, sent a large shipment of round logs which have helped to increase the total quantity of mahogany imported, but this particular importation has not sold readily in consequence of the divergent views held as to a fair price by shippers and buyers. From the West Coast of Africa there has been imported 70 per cent. increase of mahogany to London during the past year, as compared with the total quantity imported during 1912, and although a considerable quantity of the logs has been in a very weathered and faulty condition the prices obtained have on the whole been satisfactory to the shippers. In this, as in other sources of supply, it is certain that the percentage of poor quality and defective logs has decidedly increased. Gaboon appears to have been the source of a very large proportion of the increase in quantity, but this timber has obtained the reputation of being of poor character. Sapele has also contributed largely in quantity but like that from Gaboon of poor quality, and Sekondi also is open to a similar report.

The anticipations of the timber trade seem to have been falsified also with regard to teak, since while it was expected that the supplies for 1913 might conceivably touch the lowest figure yet recorded, the actual fact has been that during the year the total quantity of teak landed in the docks here has been nearly 43 per cent. more than in the previous year, this increase having been almost entirely made up by larger importations from Rangoon. Moreover, the demand for teak has considerably decreased, being about 29 per cent. less than during 1912. Teak, therefore, stands in a very different position from that which it occupied a year ago. During the last year wainscots on the whole were high in price at the beginning of the year, but receded during the summer months in consequence of some shippers holding out for higher prices than consumers were prepared to pay.

"THE ARCHITECT" STUDENTS' SKETCHING AND MEASURING CLUB.

The subject of pulpits seems to have been particularly unattractive to our contributors, as we have received only one drawing. This, however, is good, both in subject and delineation. "Plato" shows us the Renaissance pulpit in the church of All Hallows Barking, and we have no hesitation in awarding to him the prize of two guineas.

NOTES AND COMMENTS.

Very interesting is the lecture by the Right Hon. A. J. Balfour, M.P., dealing with æsthetic emotions and belief, being the third of his first series of Gifford Lectures on Natural Theology. The essence of Mr. Balfour's discussion of æsthetic emotions is that their origin is theistic rather than naturalistic. From the naturalistic standpoint, Mr. Balfour urged, the whole psychical complex of æsthetic emotions and beliefs is a chance by-product, a happy accident of evolution; and the geniuses themselves who produce works of art are equally accidental products, for poets and artists did not greatly contribute to the destruction of tribal enemies and the survival of the fittest. This view, he held, really destroyed the values of æsthetic beliefs.

Mr. Balfour urged that in æsthetic emotions there was inevitably the ever-present sense of the artist in the background, between whom and the person contemplating the work of art was a spiritual communication. If a work of art could be turned out by machinery, we would surely feel that it had lost almost all its emotional value. And there were other sources of æsthetic emotions than works of art. Quite rightly had the great system-builders dealt with art in discussions of æsthetics. But we would be doing wrong to refuse the name of æsthetic emotions to feelings of natural beauty. He himself felt that the greatest works of art sank into relative emotional insignificance when compared with Nature at her greatest and best. This, however, was a matter of individual experience, on which nothing in the argument turned. All would probably agree that to exclude feelings of the beauty of Nature from the category of æsthetic contemplation would be to maim the whole idea.

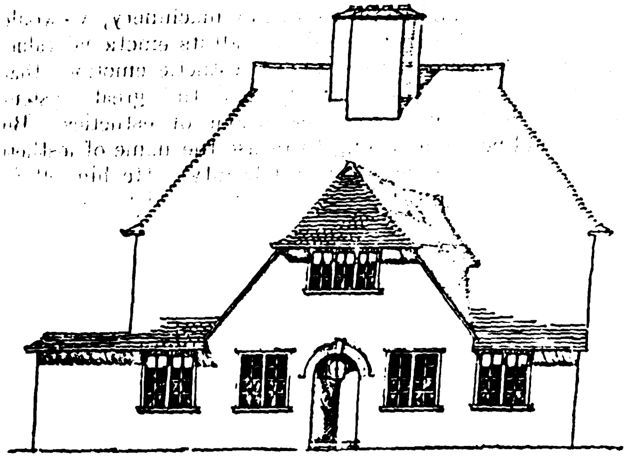
After developing this line of thought, Mr. Balfour in drawing to a conclusion advanced the argument that no sense of beauty, however overpowering and absorbing, really excluded the vague but insistent thought that that emotion meant something, that it was a revelation and not a mere arrangement of accelerating electrons and vibrating ether, exciting the visual nerves and agitating the cortex of the brain. To argue away this feeling of inherent significance was fatally to weaken those æsthetic values which could only exist at their present level and with their present permanence and psychical concomitants along with the belief that behind these appearances was a reality giving them significance and conveying through them a message from spirit to spirit. Therefore we must hold to the conclusion "That if we desire to preserve values, if we desire to argue to design from values, we are justified in saying that unless we mean to sacrifice what all civilised men regard as one of the greatest parts of their inheritance, unless we mean to sacrifice æsthetic emotions in their highest developments and in their greatest examples, we must indeed believe in that great Spirit of whom they are manifestations."

At the annual meeting of the Royal Drawing Society, Sir Francis Carruthers Gould deplored the tendency in contemporary art to suppress drawing and to substitute what was called "emotional expression." Thus if one wanted to depict a wheelbarrow one was expected to draw something not in the least like it, but a sort of jig-saw puzzle which might represent a wheelbarrow as it might appear to a lunatic who had never seen one before and thought it was something else. The aim of the Society being to cultivate "the seeing eye" and the expression of the thing seen, Sir Francis could not there admit of the possibility of the expression in form and colour of emotion without reference to things seen. Whether such possibility exists is the crucial question in deciding on the reality or the sense of post-impressionism.

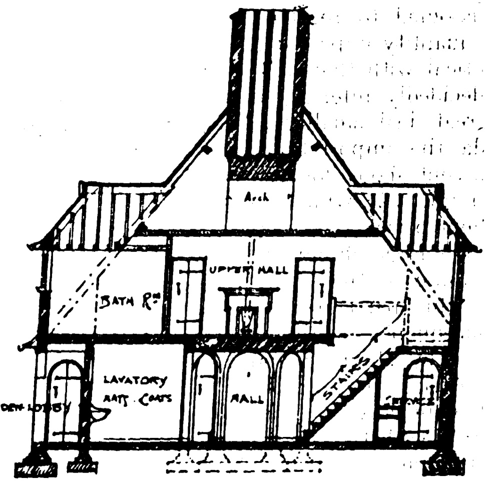
It appears probable that very shortly the executive committee who, with Sir Aston Webb as chairman, are engaged on the consideration of the feasibility and desirability of a Ministry of Fine Arts in this country, will be able to bring about such an expansion of the General Committee as shall enlarge the movement from a professional to a national one. On many points affecting the constitution and functions of the new department there is unanimous agreement. In regard to the constitution it is felt that it is a Ministry, and not merely a Minister, of Fine Arts that is wanted. That is to say, the Minister, while being at the head and responsible to Parliament, must be supported and advised by a strong council composed of prominent sculptors, painters, architects, and other practical men.

It is also essential that the new department should take over a good deal of the work now performed by various great State offices. To what extent and in what manner is a difficult problem; but it is pointed out that a Ministry of Fine Arts must be responsible for the national direction of art, with which several Depart-

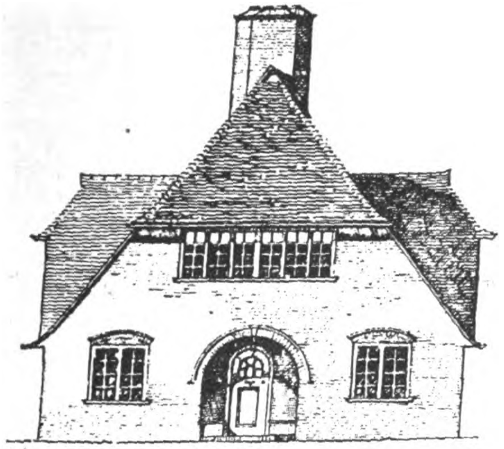
(Continued on page 90.)



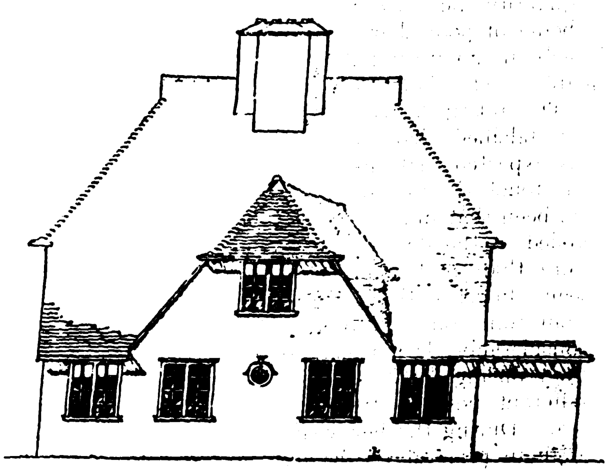
GARDEN ELEVATION.


Arch
UPPER HALL
BATH RM
LAVATORY HATS COATS
HALL
STAIRS
GARDEN LOBBY
SERVICE

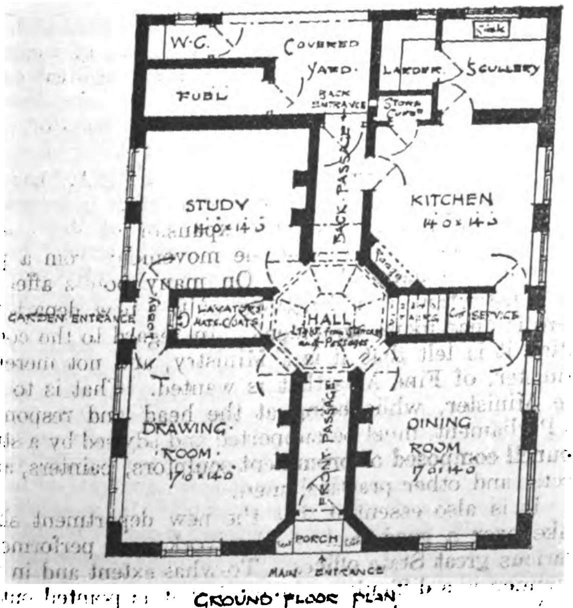
SECTION ON A-A.



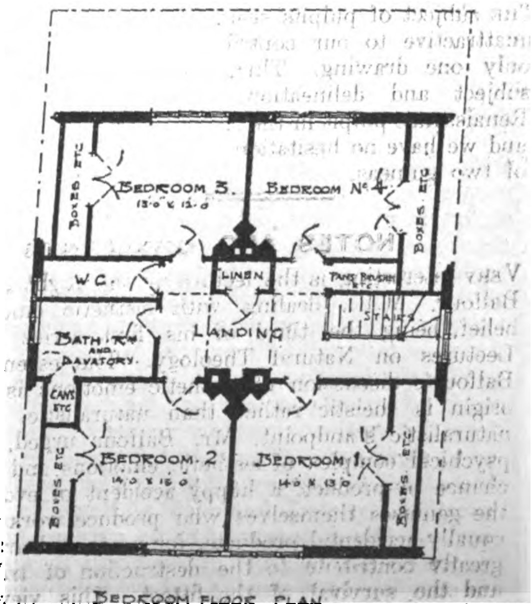
·ENTRANCE· FRONT·



SIDE · ELEVATION · S.E.


W.C.
COVERED YARD.
FUEL
BACK ENTRANCE
LARDER
SCULLERY
SINK
STOVE CUPD
STUDY 16'0"x14'3"
BACK PASSAGE
KITCHEN 14'0"x14'3"
LOBBY
LAVATORY HATS-COATS
HALL Light from Staircase and Passages
SERVICE
GARDEN ENTRANCE
DRAWING ROOM 17'6"x14'0"
FRONT PASSAGE
DINING ROOM 17'6"x14'0"
PORCH
MAIN ENTRANCE

GROUND FLOOR PLAN


BOXES ETC
BEDROOM 3. 13'0" x 13'0"
BEDROOM No 4.
BOXES ETC
W.C.
LINEN
TANK ROOM
STAIRS
LANDING
BATH RM AND LAVATORY.
CANS ETC
BOXES ETC
BEDROOM 2 14'0" x 13'0"
BEDROOM 1 14'0" x 13'0"
BOXES ETC

BEDROOM FLOOR PLAN

DESIGN FOR A SMALL COUNTRY HOUSE. BRICK AND TILE CONSTRUCTION.—Messrs. WEBB & SUTTON, Architects.

(Continued from page 88.)

ments are concerned, notably the Board of Education, the Office of Works, and the Board of Trade.

As to functions, it is felt that a Fine Arts Ministry must promote legislation in art matters and watch general legislation which has any bearing on art; control the national art collections; keep an eye on public and official decorations; preserve national monuments, and prevent vandalism wherever possible; give direct and practical encouragement to industrial art; see that art students, after training at national expense, get the opportunity to turn their talent to account; take every opportunity to raise and maintain the standard of design in manufactures; preserve the beauty of the landscape, and supervise town-planning, and the laying out of parks, streets, and bridges.

In the address delivered by Sir Lewis Dibdin, K.C., Dean of the Arches, to the Authors' Club, was included an interesting account of the church of St. Mary-le-Bow, Cheapside, in the City of London, as to which Sir Lewis said:—

"There are thirteen parishes in the City of London which from very ancient times down to about sixty-five years ago did not form part of the Diocese of London, but had for their Bishop not the Bishop of London but the Archbishop of Canterbury. They were called the Archbishop's Peculiars in the City of London. The chief of these thirteen parishes is represented by Bow Church —St. Mary de Arcubus, St. Mary of the Arches. It was originally built in William the Conqueror's reign on arches, the ground being marshy—hence, no doubt, the name. You can see the arches or 'bows' to-day in the beautiful crypt under the church. The vaulting consists of a large number of intersecting arches springing from fine Norman columns and partly supported by basement walls containing much Roman work. According to another account the name is an allusion to the converging arches which were on the top of the steeple tower of the former church and are reproduced on the steeple of the present one, as any one can see who will walk along the right-hand side of Cheapside from the Mansion House westwards. But this cannot be the true explanation of the name, because Bow Church was well known by that title long before the steeple-tower, not finished till 1572, was built. The church was burnt in the Great Fire of London (September, 1666), and was rebuilt on the old foundation of arches by Sir Christopher Wren. The steeple is said to have been planned 'with that elegancy of rare architecture, height, and curiosity that it excels any in Christendom.'"

In an article in the *Manchester Guardian* the relationship between art and engineering is very sensibly expounded, and it is pointed out that proportion and fitness may be sufficient to render a purely engineering work artistic without the unnecessary dressing of so-called "architectural features." The writer says: "To the modern school of engineers that which is foreign to the purpose of a structure or machine is literally false and dishonest and can have no rightful place. True art consists not in hiding the purpose of a structure, but in perfecting the design so that each part bears its due share of the burden and amalgamates with its fellows into a united whole, the purpose of which discloses itself in the form and materials of the work. In no case is it intended to hide the functions and structure of the work. A network of beams and ties may be covered over to shield from the weather, provide a business or living apartment, or to serve some other useful purpose, but not to hide the so-called ugliness of the girder work. Thus, one sheathes the steel frame of a New York skyscraper because this is necessary to its purpose, but one leaves exposed the framework of the Forth Bridge because this is complete as it stands; and even the most biased critic must admit its fine artistic presence."

DESIGN FOR A SMALL COUNTRY HOUSE.

The main feature of this small house lies in its planning, the key to which is an octagonal hall, each side of which gives access to a door or archway. It is claimed that by this means, and by means of the arrangement of fireplaces, a great economy of domestic labour and heating is obtained. The house is estimated to cost about £800.

R.I.B.A. PROBLEMS IN DESIGN.

The designs submitted under Subject XII. will be on view in the rooms of the R.I.B.A. from January 22 to 24 inclusive, between the hours of 10 a.m. and 8 p.m. (Saturday, 6 p.m.).

COMPETITION NEWS.

Bromsgrove.—A special committee of the Urban District Council recommend the purchase of three properties in St. John's Street as a site for a market hall, council chamber and other buildings, at a cost of £2,850, and that architects be invited to send in competitive designs for the proposed scheme.

London.—H.M. Office of Works have received 187 sketch designs for the proposed offices for the Board of Trade, &c., to be erected in Whitehall. The authors of not more than ten designs will be selected to join in a final competition at an honorarium of £300 each.

Manchester.—The board of directors of the Manchester Royal Exchange last week adopted the report of Mr. J. S. Gibson, F.R.I.B.A., the assessor, in connection with the competitive designs for additional buildings and alterations on the existing Exchange buildings. Mr. Gibson, after examining the designs sent in by thirty-seven architectural firms, recommended the following: 1, Messrs. Bradshaw, Gass & Hope, 19 Silverwell Street, Bolton; 2, Mr. T. Edwin Cooper, 4 Verulam Buildings, Gray's Inn, London, W.C.; 3, Messrs. Thomas Halliday & Claude Paterson, 14 John Dalton Street, Manchester. The winners of the second and third places will each receive a premium of 100 guineas. The estimated cost of the scheme is £600,000, one-third being for buildings and two-thirds for land, buildings to be taken down, and compensation for disturbance of tenants.

ILLUSTRATIONS.

MESSRS. SAINSBURY'S BUILDINGS, STAMFORD STREET, BLACKFRIARS.

This, the central establishment of a large retail provision business, is an excellent example of present-day commercial architecture, the architect of which is Mr. F. Sykes, F.R.I.B.A.

TOR SIDE, HELMSHORE, LANCASHIRE.

We continue this week the series of illustrations of this house, designed by Mr. John C. Procter, A.R.I.B.A., which we commenced in our issue of January 16.

NAVE ARCADE, FINEDON CHURCH, NORTHANTS.
NAVE ARCADE, LANERCOST PRIORY, CUMBERLAND.

These two examples are excellent specimens of mediæval ecclesiastical architecture of high quality, and the drawings were awarded prizes in the monthly competitions of "The Architect" Students' Sketching and Measuring Club.

Sir Robert Lorimer, A.R.S.A., F.R.I.B.A., has been commissioned to design a monument which it is proposed to erect in South Ayrshire to the memory of John Snell, founder of the Snell Bursaries, which enable Scottish students to continue their studies at Oxford University. John Snell, who lived about 300 years ago, was the son of a blacksmith.

The Westminster City Council recorded its regret last week at the retirement from the Council of Mr. William Woodward, F.R.I.B.A. The Town Clerk reported that Mr. Woodward had written stating that for some little time past he had been bound to recognise that his various outside duties and obligations were increasing too rapidly, and that not enough time was left—work how he might—to fulfil his professional and other engagements. In accordance with By-law 132, the Councillor enclosed a cheque for £1 1s., the statutory fine on resignation. Several members testified warmly to the value of Mr. Woodward's work on the Council. "I had always regarded him as a budding Mayor," said Alderman Tallents, "but that was not to be."

SOME BRICK CHURCHES IN GÖTALAND.

By J. TAVENOR PERRY.

THE countries which lie round the Baltic Sea formed, during a large part of the Middle Ages, but one architectural province, for not only were their physical features very similar, but they were closely connected by social and political ties. The wide stretches of sandy undulating plains which spread across Lower Saxony, Mecklenburg, and Pomerania, thickly sprinkled with the great granite boulders brought down by the icy floods from the north, are repeated in Denmark and Southern Sweden; and through all these countries the influence of the Hanseatic League extended, and the brick architecture so characteristic of Lübeck and the Hansa towns is found reproduced with varying richness according to the wealth or importance of the locality. In all these countries the earliest buildings were erected of stone or granite, but most commonly of the latter, as in the boulder deposits this was not only easily accessible, but the supply of it was almost inexhaustible; and the circular churches erected in these materials form a most distinctive feature in Scandinavian architecture, and are found scattered over the three kingdoms, the islands of the Baltic Sea, and as far west as Rhode Island in the United States. But although good building stone was more easily procurable in Sweden than in Pomerania, this, as well as the granite, soon gave place to the more cheaply manufactured brick, which became the usual material for all buildings erected under the influence of the Hanseatic League, and it was thus introduced into Sweden at an early date. That this influence was considerable in Scania, the southernmost part of modern Sweden, is accounted for by the fact that it contained three towns of great importance which ranked as "allied towns" with Lübeck, and they were Malmöe, Falsterbo, and Skanör. Of these the last two have been nearly overwhelmed by the shifting sands of the seashore, but they retain in their half-ruined churches evidences of former splendour; but Malmöe still occupies a leading position, and has important brick buildings similar in every respect to the contemporary ones of Lübeck; while the house of the Hanse merchants, much modernised, still stands in the Södergaten of the town.

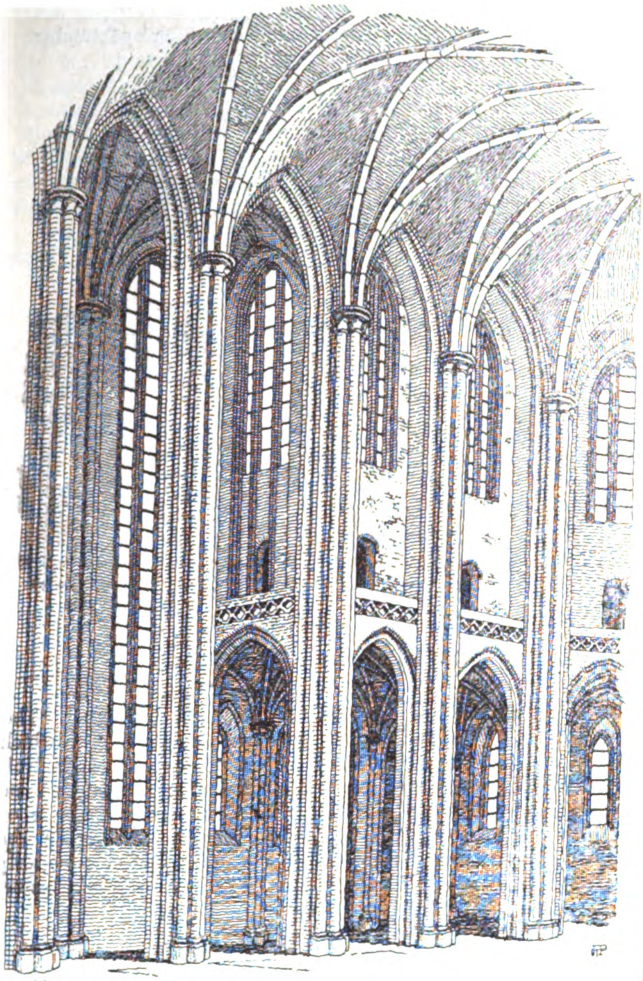


FIG. 1.—PETRIKYRKAN, MALMÖE, NORTH TRANSEPT AND CHOIR, AS LEFT BY BRUNIUS.

Malmöe is the chief town in Scania both politically and historically, though it cannot claim the same high antiquity as do the neighbouring towns of Lund and Skanör, as to which there is an old Swedish saying which runs:

> "När Kristuslät sig föda
> Stöd Lund och Skanör gröda,"

for the earliest mention of it is in 1259, when it consisted of a small fishing village occupying the site of one of its present southern suburbs. By the end of that century, however, partly on account of the altered position of the Hansa to the Baltic towns, it had so much increased in importance that the foundations of the great Peter's Church were laid in 1319. The building of this seems to have been proceeded with rapidly, and it was completed, much as we now see it, in less than fifty years from its commencement; and although the western spire fell down in 1442 and the tower was severely fractured through some failure in its foundations, all this has been restored, and it now presents an appearance similar in all respects to other churches erected under Hanseatic influences.

St. Peter's Church consists of a nave, nine bays long, ending in a polygonal apse of irregular form, surrounded by five radiating chapels set out on the German method. The nave has aisles for six bays from the west end and transepts, not projecting beyond the aisle walls, but occupying the space of two bays, and giving to this part of the building the appearance of a *hallen-kirche*. The piers and principal arches of the nave arcades rise to the full height of the main vaulting, giving to the interior the effect of great height, as can be seen by our illustration (fig. 1). On the north and south sides, and projecting beyond the aisles, are square chapels of two bays each, of which we illustrate the northern one (fig. 2), showing a great deal of ornamental glazed brickwork, and seemingly not later in date than the rest of the structure; but one is apt to be misled in such a particular by the very perfect character of the style of the edifice, possibly due to the very fierce restoration to which it had to submit first, about 1845, at the hands of Professor Brunius, and second, about 1890, under H. Zetterwall, the restorer of Upsala Cathedral—the Cottingham and the Scott

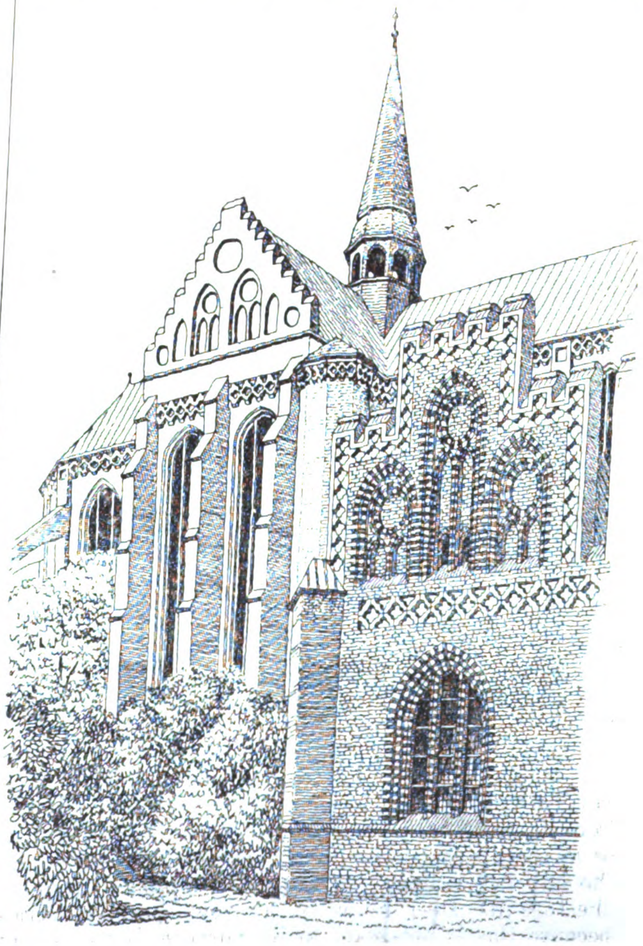


FIG. 2.—PETRIKYRKAN, MALMÖE, NORTH TRANSEPT AND CHAPELS AFTER RESTORATION BY BRUNIUS.

of Swedish church restorers. The former cleared out from the old church all its late fittings and monuments—the broken font lies still in the tower—and the latter rebuilt the spire, but removed the picturesque old flèche. The length of the building from east to west is about 250 feet, and across the transepts from north to south about 80 feet, so that its dimensions are considerable for a parish church, while the bare condition of the interior makes its appearance seem vast Except for the stone capitals and bases and the vaulting ribs the whole of the building, including the vaulting, is in brick; but much of the interior has been plastered over and whitewashed. Save for the band of quatrefoils over the nave and choir arcades, the whole of the ornamentation is confined to the exterior, where a deep frieze with a lacework effect is carried round the main cornice and over the chapels of the choir, or where the glazed bricks have been used on the nave chapels. In the western tower the quoins are formed of great blocks of boulder granite, and when the spire fell the wide fissures in the tower walls were tied across by stretchers of unhewn granite. At the restoration not only were these removed and the fissures pinned up, but the original window openings in the tower were rearranged to suit the restoring architect's ideas of symmetry.

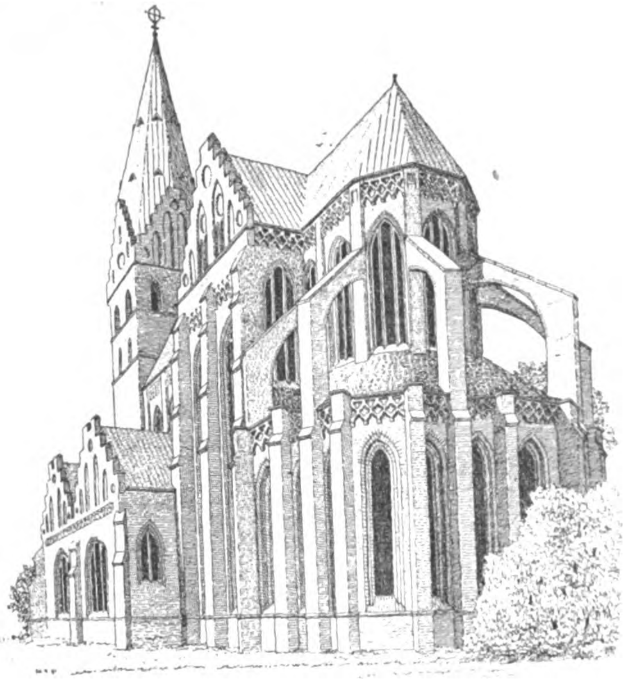


FIG. 3.—PETRIKYRKAN, MALMÖE, WITH SPIRE BY ZETTERWALL.

The irregularity of the eastern termination of the church, to which we have already referred, was further complicated by a distinct leaning of that part of the plan towards the south, due more probably to a mistake in the setting out than to any symbolic intention, in which particular St. Peter's, Malmöe, resembled St. Peter's, Rome. The peculiarity of the setting-out of the eastern chapels, in which it differed from the radiating chapels of a French cathedral, was in the evolution of the method from the triapsal scheme of such churches as that of the Apostles at Cologne or St. Catherine's at Lübeck, which resulted in giving the westernmost flying buttresses of the main vaults a westerly inclination, as is seen in the Domes of Lübeck or Westminster

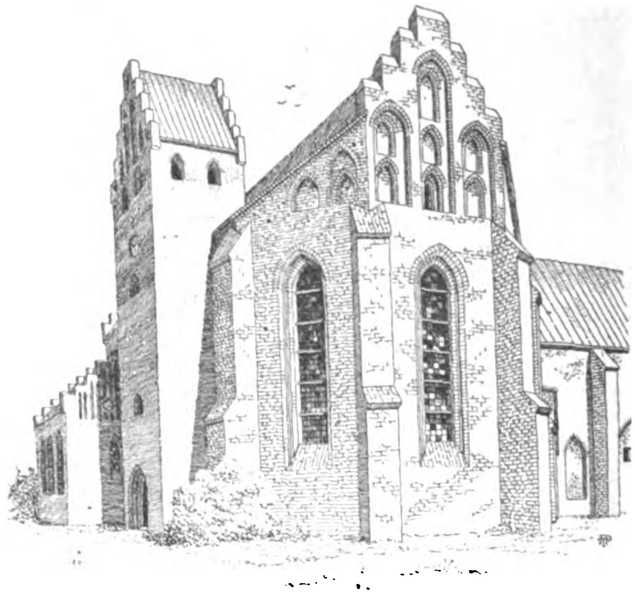


FIG. 5.—PETRIKYRKAN YSTAD.

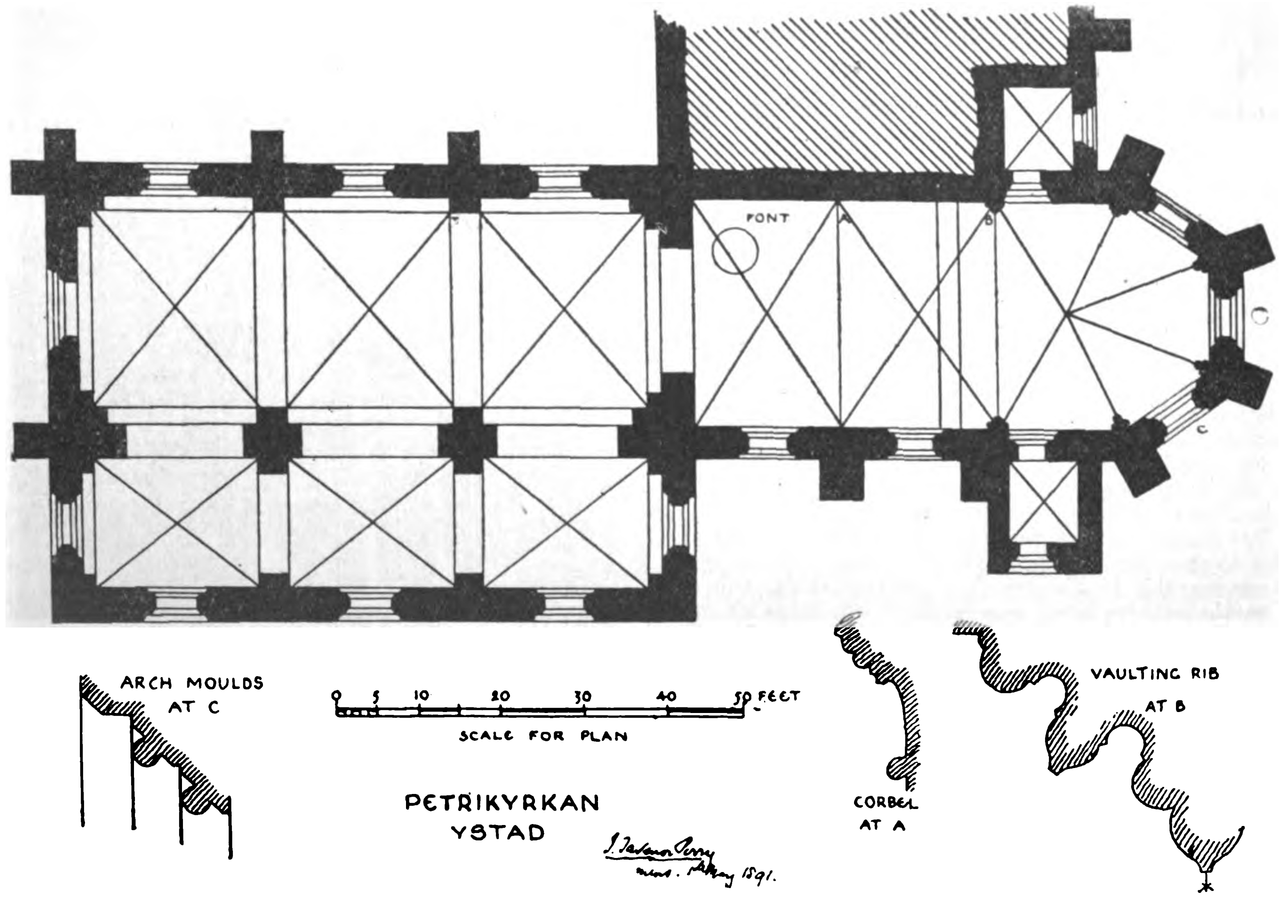
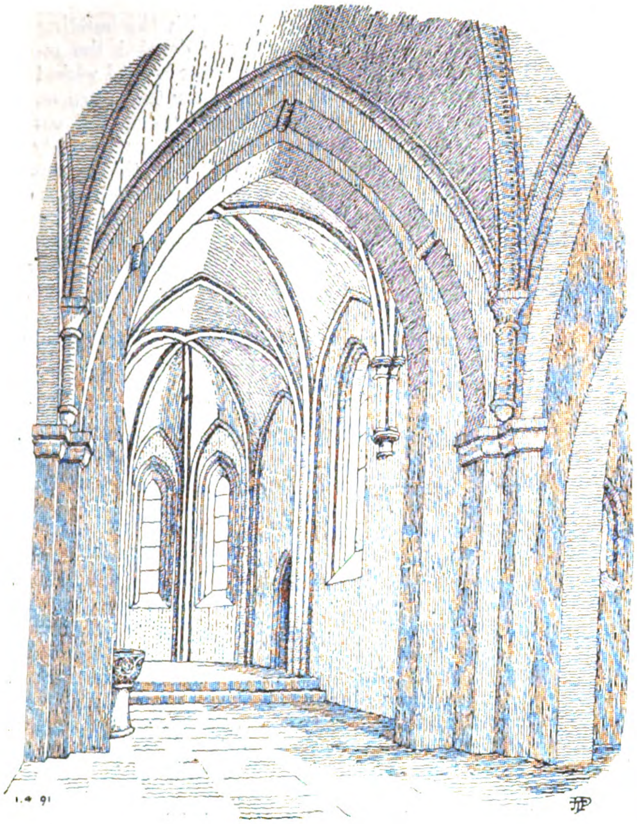


FIG. 4.

Abbey. Undisguised by pinnacles or the ornamentation of a stone-built church, the effect is not happy, and this is evident in our view of the east end (fig. 3).

Of the other brick buildings remaining in Malmöe the most important are the Town Hall and the Castle; the former, built in 1546, has been recently so restored by Zetterwall as practically to amount to rebuilding. The Castle, known as the Malmöehus, is a moated rectangular building with low round brick towers at the angles, portions of which, somewhat picturesque, were erected in 1537, and are historically interesting as having been the prison of Mary Stuart's Bothwell after his escape from Scotland. Among the old houses remaining mention may be made of the Knutsal, the House of the Guild of Canute, a powerful trade organisation, and the Kockumska house, a building of the fifteenth century, with picturesque gables. In fact, in spite of improvements, rebuildings, and fierce restorations, this ancient Hanseatic town still retains much of interest to the sketching architect.


PETRIKYRKAN
YSTAD
GÖTALAND
Fig. 6.

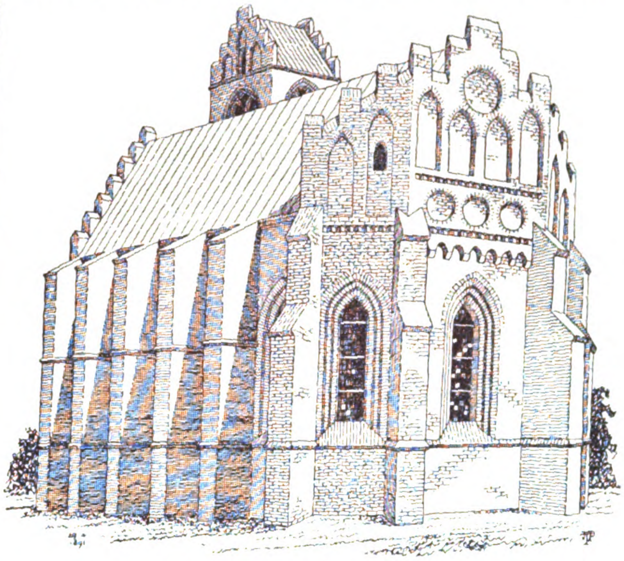


Fig. 7.—KLOSTERKYRKAN, LUND.

Not far from Malmöe, but on the Baltic shore and within sight of the chalk cliffs of Bornholm, is the busy little port of Ystad, which, although never described as a Hanseatic town, contains many buildings of the same character as those of Pomerania. It retains two old churches which date back to the thirteenth century: the parish church of Our Lady, in brick, which has been entirely modernised, and the Peter Church, which merits a detailed description. Although the town is only mentioned in 1240 for the first time, as early as 1267 a knight named Holmgeir and his wife Katherina founded here a monastery for the Grey Friars, and portions of the existing church date from the period of this foundation. Early in the next century the present conventual buildings, which stand on the north side of the church, were erected, and the church itself enlarged and brought to its present condition; and although at the Reformation the convent was secularised, the buildings were spared and the church was made parochial. From the plan which we give of the church (fig. 4) and the view of the interior (fig. 5) it will be seen that the nave only, which is of stone, belongs to the period of the knightly founder, while the chancel and south aisle, both built of brick, belong to a slightly subsequent date. The nave is three bays long, each about 20 feet square, and covered with quadripartite vaulting in stone, the piers being square and the arches unmoulded and plain except for the curious roll on the soffite, which is a not uncommon feature in Sweden. All this part of the church was richly decorated in colour, and although this is much damaged, enough remains to show that it belongs to the thirteenth century; but it is unfortunately not figured in Mandelgren's work, which illustrates so many of the coloured churches of the country. No doubt the nave finished with the usual apse, but this was removed and a long chancel vaulted in two bays, with a polygonal ending, was erected in brick in place of it; and at the same time a south aisle, also in brick, was added to the nave. Although all the exterior and most of the interior are in brick, the vaulting ribs and shafts of the chancel are of stone, and present a remarkable similarity to Early English work, as can be seen by the details we give on the plan (fig. 4). A belfry tower was also built on the south side of the chancel having a saddleback roof and gables to the north and south; and the picturesque gabled end of the apse is of a type common to all the Baltic countries (fig. 6). The ancient font of the date of the foundation has been preserved, and now stands on the north side of the chancel; but generally the fonts have been turned out of Swedish churches, as the rite of baptism is now administered in private houses.

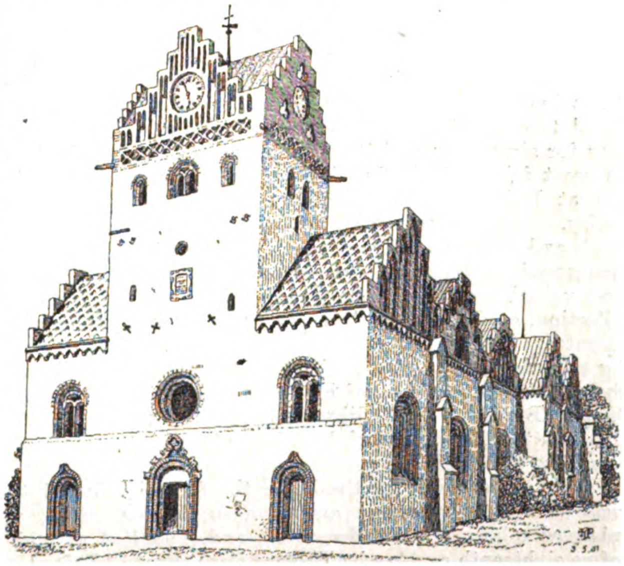


Fig. 8.—ST. SIGFRIDSKYRKAN, VEXIO

In the cathedral city of Lund, the *Londinium Gotorum*, is another little conventual chapel like that of Ystad, except that it is all of one date and entirely built of red brick. It may be of early fourteenth-century work, and consists of a single aisle vaulted in four bays with a polygonal apse beyond, all lighted on the south and east sides by single-light windows; but as the conventual buildings, now destroyed, stood on the north side, on that there are no windows, but there is a tall gabled tower vaulted on the lowest stage. The red brickwork of the exterior was for long plastered over; and the legend that a nun was immured within its walling, whose blood may be seen at times oozing through the joints of the brickwork, gains greater credence each time a piece of plastering falls. The chapel is now devoted to parochial purposes and is known as the Peter's Church. It stands near the railway station, and we give an illustration of its present appearance (fig. 7).

At some little distance to the north-east of Lund, but still within the land of the Goths, stands the little city of Wexio, an important centre of the Swedish match-making industry and, except for its frequent and extensive fires, famous for little else. It possesses a cathedral church dedicated to St. Sigfrid, prettily situated by the winding Helga lake, with the very modest dimensions of 160 feet by 103 feet. It unfortunately underwent a fierce restoration at the hands of Professor Brunius in the former half of the last century, so that it is difficult to decide how many of its peculiarities are due to him; but it may be assumed that there must have been some authority for the bulk of the work. It consists of a three-aisled building of the *hallen-kirche* type, five bays long, with another square bay at the east end of the central aisle. All the main walling and piers are in granite or stone, but the vaulting is entirely in brick, the western portion being enriched with lierne ribs; and the north and south faces of the aisles are formed into a series of brick gables of varied designs due in part, perhaps, to the restorer's fancy. The very bald west front, which we show in our sketch (fig. 8), has a good deal of granite in the lower part of the walling, but the tower, oblong on plan, which rises near the centre of the façade, is finished with brick gables.

Wexio has been too frequently devastated by fire for any traces of antiquity to be found in the town, but on an island in the lake are the picturesque remains of a castle, and the celebrated Kronoberg, figured by D'Agincourt, is not far off.

HOLKHAM HALL, NORFOLK.*

By MR. A. BARNARD COWTAN, F.I.B.D.

THE first entry of money expended on this mansion reads in 1734: "To labour—diging earth out of ye foundation £3 11*s*. 0*d*."; but as far back as 1725 Mr. Thomas Coke had settled on the site, and had commenced to reclaim portions of the salt marsh, to plant and cultivate the heathland, to enclose some 800 acres for park and plantations, and to build farmhouses, &c.

The general idea, plans, elevations and sections were first made by Mr. Thomas Coke (created Lord Lovel of Minster Lovel, in Oxfordshire, in 1728, and Earl of Leicester in 1744) and by the Earl of Burlington, assisted by William Kent, who was encouraged in his studies at Rome by these two noblemen, and was under their joint patronage.

Thomas Coke was born in 1697, and succeeded to the estates in 1707. When only fifteen years of age he went abroad to complete his education and to travel, remaining away for six years; and it was when with Lord Burlington, his great friend, in Italy, that many of the wonders to be seen at Holkham were acquired. His was an unusual ability. So devoted was he to the study of the ancient Greek and Roman authors that he, then a very young man, commenced to form the collection of MSS. known as the most valuable and comprehensive in the world as a private collection, comprising as they do almost every department of literature, both sacred and profane. His consummate taste for art, aided by wealth, enabled him to give commissions to the most celebrated men of his time, amongst them Antonio Maria Biscioni, chief librarian of the Laurentina, who collected the truly wonderful works and MSS. of Livy which are to be seen at Holkham.

Over the doorway of the house the following inscription was placed: "This seat, on an open, barren estate, was planned, planted, built, decorated, and inhabited ye middle of ye eighteenth century by Thomas Coke, Earl of Leicester."

There is no doubt, as far as one gathers from the records, that the idea of erecting this house of classical design came to Mr. Thomas Coke while in Italy in 1718, as he, in company with Lord Burlington, visited the modern palaces and villas of the Italian nobility, as well as the classical temples, &c., and studied the architecture of Palladio and the designs of Inigo Jones.

The care of proportioning the parts and the detail of each member of the building in particular was committed by the Earl of Leicester to the superintendence of his own architect, Mr. Matthew Brettingham, of Norwich, who in the knowledge of sound building, as laid down in the School of Vitruvius, was allowed to equal, if not excel, all the professors of his time. In fact, the characteristic merit of Holkham is most discernible in the accurate performance of its workmanship.

The designs of the principal chimneypieces in the grand apartments (done in various Italian marbles by the late Messrs. Pickford & Carter) were for the most part copies from Inigo Jones' works; and these are sufficient to show in what manner the Earl of Leicester conducted his building operations. During a period of thirty years he made the choice and appropriation of every member and ornament before any part was given out to the workmen for execution.

Also, besides attending to the interior embellishments in the shape of paintings and statues, his lordship continued with uncommon diligence to improve and elucidate the first sketches of plans and elevations concerted with the Earl of Burlington and Mr. Kent. In this he was guided by Palladio and Inigo Jones. It is interesting, however, to note that the interior of the Earl and Countess of Leicester's family wing was finished from designs supplied by Mr. Kent without undergoing any material change.

This great man passed away in 1759 with the building unfinished, and the Countess of Leicester devoted the remainder of her life to complete what she knew he had wished to do, Lord Leicester having left provision for that purpose, though some of the gilding and decoration was carried out in a somewhat less costly manner, and this particularly applies to the chapel wing, which, so far as the records show, was the work of Brettingham, whose symbols are particularly to be noticed in the over-doors.

The furnishing of the house was also completed by Lady Leicester, but out of her own income. The actual inventory of this furniture, made by her ladyship in her own writing, the year before her death, still remains. The wording on the cover is: "Inventory of the Furniture in Holkham House and Offices—Counting House—Stables, Lodges, &c., taken by Lady Leicester in October 1774."

Part of the great hall, north State bedchamber, the vestibule under the portico, the chapel, strangers' wing, steward's evidence office, stables, north-west side of lawn, and platform before the north front of the house, were brought to a final conclusion in the year 1764.

The Holkham brick resembles the modern yellow brick of the Italians, both in colour and hardness. This similarity was discovered by comparing them with one accidentally sent from Rome in the packing case of an antique statue.

Bath stone was first fixed upon for the external surface of the structure, but a brick earth was found in the village of Burnham, which, with proper seasoning and tempering, produced an excellent well-shaped brick, approaching near to the colour of Bath stone, and of a much firmer texture. Of this earth bricks were formed for the outside walls, and, by means of various moulds, for the rustics of the basement storey.

Moulds were used to avoid cutting bricks, which caused a discoloration of their surfaces. From these moulds bricks were shaped for the rustic joint, others for the window arches, some for the headers, and some for the stretchers, and not less than thirty different sizes were required to complete the figure of one rustic.

The present owner states that this brick has stood the weather better than any stone could have done in such an exposure. It is interesting to know that the same brick was used for the building of Burlington Arcade by the third Earl of Burlington, and that the brick kilns are still in existence on his estate at Burnham, the output being 200,000 to 300,000 a year.

In preparing the mortar for the walls it was mixed in due proportion of lime and sand, and afterwards, to render it of sufficient fineness for close brickwork, ground between a pair of large millstones fitted to an engine for that purpose. All the inner joints of the walls were carefully filled with this mortar, made up into grout, and poured in a liquid state upon every one or two courses of brickwork.

The good effects of this method had been observed in the rubble flint stonewalling of Mediæval buildings where the mortar, though composed only of soft chalk lime, mixed with drifted sand, is found to have acquired a degree of hardness equal to many petrifications.

Care was taken that no part of the principal walls should be supported upon timber or woodwork, lest in decaying it might damage the fabric. What was requisite to connect the parts of the building together is so situated as to be of no further use, after the brickwork had acquired a perfect settlement. So little indeed does the strength of this edifice depend on the assistance of its timbers that the girders of the principal floors were not hoisted into their respective positions until after the roof had been raised to the building and the walls of the house completed.

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* **A Paper read on January 8 before the Incorporated Institute of British Decorators**

To discharge the weight of brickwork and to render the fabric in every part equally solid and permanent, over-doors, windows, niches and chimney openings, arches and counter-arches were constructed, and every precaution employed that judgment and a perfect knowledge of mechanism could suggest.

An interesting point is that the putties of the casements and window sashes were originally of burnished gold, which added to the unique appearance of the house, and were kept in such repair that a considerable portion was existing when the work of restoration was entrusted to my firm some five years back.

Commodiousness was one of the Earl of Leicester's leading maxims, and this sensible principle is diffused through every part of the plan, which, though extensive and numerous in its dimensions, is nevertheless constructed with beautiful simplicity, and that symmetry of disposition from whence convenience results, whether separately considered or in connection with its wings. The grand apartment presents almost one regular declination of rooms diminishing from the centre, which is the most large and dignified part, communicating with facility and receding gradually to the extreme and lesser apartments situated in the wings, with which on the south side, the corridors included, it forms a sweeping line of twelve distinct spaces or rooms, terminated each way by a window, and produces an extent of nearly 344 feet.

The junction of the wings to the main body, or central building, by means of straight rectilinear corridors, which on the south side of the plan are also staircases, is another admirable contrivance, as they serve either to unite the principal floors of the chapel and the two capitol wings with the State apartments or detach it from them at pleasure, communicating either with the garden or with the servants' offices, below in the basement, which is one of the chief advantages attending the plan of Holkham.

The mode of placing the four pavilions diverging from the four extreme angles of the centre building and connected with it by four rectilinear corridors seems to have been borrowed from Palladio's plan of a villa, designed for the Cavalier Leonardo Mocenigo upon the Brenta, with this difference, that Palladio's corridors are only rectilinear towards the courts, which courts are open at one end to admit prospects of the country, similar to those of Holkham, whereas, on the outward sides, his corridors referred to are not only circular and unenclosed, but also advance the whole depth of their projecture beyond the front line of the centre building.

The preference which the Earl of Leicester always showed to the works of Palladio, who not only excelled in the practical knowledge of architecture, but also surpassed all his rivals in the taste and elegance of his compositions for country houses, bears out the statement that the Earl once entertained the idea of adopting Palladio's plan of a villa begun, though not finished, at Meledo, a place in the Vicentine. But this picturesque idea, beautiful as it is in the original design, was laid aside by his Lordship as probably not answering the situation nor being large enough to admit of offices adequate to the Earl's family and fortunes.

The elevation of the garden front, intended originally to have been of stonework, was in the first sketches entirely rusticated; and an attic or bedchamber storey was proposed for the central building, with elliptical windows in the frieze or entablature to light it, ornamented with shield or target work, in the manner of Italian mezzonini. These are omitted.

The grand entablature, which with its portico to the south is of the Corinthian order, was copied from the Pantheon at Rome as given in Palladio's "Book of Antiquities."

The family wing contains complete family apartments, also for servants in immediate attendance upon the family.

On the north-west corner is the strangers' wing, which is divided upon the ground floor into single bedchambers, and above, on the principal floor, it is again divided into bedchambers, single and double dressing-rooms as required.

Grand Apartments: Hall, 46 feet by 70 feet by 43 feet high.

The idea of the Great Hall was suggested by the Earl himself from the judicious and learned example of Palladio of a Basilica or Tribunal of Justice, exhibited in his designs for Monsignor Barbaro's translation of Vitruvius.

The tribunal part of the semi-circular niche at the upper end contains the flight of steps leading to the saloon; that to the right and left conducts to the State apartments.

Imagination can scarcely form an idea more majestic than of this Great Hall, which is one of the noblest derived to us from the ancients, nor perhaps will any space of the same magnitude admit of a grander display of architecture. Its stately range of fluted columns, enriched with purple and white alabaster, the splendour of its various ornaments in the ceiling, in the cove, in the soffits of the architrave, and of the colonnade, all decorated with admirable propriety from the purest models of antiquity, jointly produce an effect that perfectly corresponds with ideas of Vitruvian magnificence. It has been lighted around the cornice, and has a wonderful effect at night. By the desire of the Earl of Leicester the whole of the ornamental plaster work has been treated with the scumbled effect known throughout Italy. The names of the workmen who moulded this plaster work in position were found at the top of the cornice.

The order of columns, which forms a colonnade or gallery of communication leading to the State rooms on each side of the hall, and which is supported on a basement of the same purple and white alabaster, was taken from the Ionic Temple of Fortuna Virilis at Rome, and well executed by Mr. Pickford, who also carried out the greatest part of the inlay, or incrusted work, in the basement.

The quadrangular diminishing mosaics in the cove, from the above-mentioned Pantheon, the whole entablature in the numerous apartments of the mansion, were conducted from their commencement by the ingenious Mr. Clark, of Westminster, who, brought up in the school of Lord Burlington, with great accuracy followed the antique manner in the several works carried on under his direction at Holkham.

This hall is decorated on either side with casts of antique statues; at the far end next to the saloon are two bas-reliefs on either side. Over the doorway leading to the saloon is a bust in marble of Mr. Thomas Coke, the builder of the house.

Saloon: 28 feet by 40 feet by 32 feet high.

The whole entablature, which is one of the Composite order, is taken from Palladio's proportions, the foliage in the frieze and octagon mosaics in the cove of the ceiling from Desgodetz. The hangings of this room are of crimson velvet.

The two magnificent Sicilian marble-column chimney pieces with bas-reliefs in the tablets of the frieze are by Thomas Carter.

Over the centre door is a large antique bust of Juno (or rather wrongly called Juno), bought at Rome by Matthew Brettingham.

On the east wall is hung the life-size portrait of the Duke D'Arenberg on horseback, by Vandyke, and this noble picture is said to have formerly belonged to the Duke of Bavaria.

On the west wall is hung a large picture representing "The Holy Family," by Rubens.

There were two fine antique tables in this room found in the Villa Adriana, near Tivoli, purchased from Cardinal Furietti by Matthew Brettingham. They are now in vestibule and tribune.

Drawing Room: 30 feet by 22 feet by 22 feet high.

This ceiling is from Inigo Jones, and the standing griffins in the frieze of the entablature out of Desgodetz.

Statuary marble chimneypiece, Inigo Jones, by Pickford.

Two marble busts are on the chimneypiece; one is of the Emperor Caracalla and the other Lucius Verus.

The picture over the chimney is the "Madonna in Glory," standing upon a globe surrounded by angels, by Pietro da Pietri; right and left two large bird pieces emblematic representations of King William's wars, by Hondekoeter, a fine landscape by Claude Lorraine, bought by the Earl in Rome; "A Storm," its companion, by Nicholas Poussin.

There is a magnificent pier glass, the frame by Whittle, under which stands an exquisite table of alabaster bought at Rome by Matthew Brettingham.

Vestibule.—An octagon of 21 feet diameter and 32 feet high. This vestibule is fitted with four library bookcases, in large niches; the entablature is of Palladio's Corinthian order. Above the doors and bookcases are placed six antique marble busts.

Statue Gallery.—The Statue Gallery, a capital part of the plan, and the most complete in this kingdom for manner and style of furnishing, bears a near analogy to that in the Earl of Burlington's elegant little villa at Chiswick, confessedly taken, though with *many* deviations, from the Marchese Capri's villa built by Andrea Palladio near the town of Vicenza.

The gallery of Chiswick, which is that of Holkham in miniature, is not indeed to be found in Palladio's plan just named, but its resemblance may be traced in the plans of a town house constructed by that architect for the Counts Thieni in that same city.

Including its two large end niches, the Statue Gallery is 60 feet long, 21 feet wide, and 23 feet in height.

The ceiling is plain, with only a single cornice under it, which is Palladio's Corinthian, but more enriched.

Veined and statuary marble chimneypieces and Sienna tablet from Inigo Jones, by Pickford. The heads of the niches at each end of the gallery are decorated with the lozenge mosaic taken from the Temple of the Sun and Moon out of Desgodetz, and richly gilt.

Two youthful satyrs, standing erect with one leg across the other, of Parian marble; their attitudes are the same as that in the Villa Borghese, to which, in character and workmanship, they are very little inferior. One was purchased of Cardinal Alexander Albani, the other of Cavaceppi, the sculptor (who restored them both), by Matthew Brettingham.

A statue of Poseidon, in Parian marble, and well preserved. Statues of that deity are very rare; this was purchased of Carlo Monaldi (who restored two arms and the trident), by Matthew *Brettingham.*

The statue of the god Faunus, in Parian, is a very entire and capital antique figure; the two hands and part of the Lituus which he holds are the only additions made to it, and they are the work of Cavaceppi. There were two kinds of Parian marble used by the ancients: one a fine grain, the other a larger grain. This is of the latter kind, called by the Romans Marmo Salino, from its sparkling particles resembling salt. This figure was dug up in the Campagna of Rome, and first purchased by Cardinal Albani, from whom it was bought soon afterwards, in the condition in which it was found, encrusted over with the tartar of the earth, by Matthew Brettingham.

In a larger niche contiguous, that makes a centre between the chimneypiece and that end of the gallery, stands the celebrated figure of Diana (Artemis), purchased and sent out of Rome by the Earl of Leicester, for which offence his lordship (known at that time by the name of Cavalier Coke) was put under arrest, but was soon released at the instance of the Grand Duke of Tuscany. It reached England eventually, after two years at Florence, being brought by an English frigate. This statue is one of the most excellent draped figures of the ancients, and perhaps the most beautiful representation of that goddess anywhere to be met with. For the convenience of removal, it is composed of two pieces of Parian marble, the upper piece fitted to the lower under the folds of her garment, which effectually conceals the joint. It is believed that this statue of Diana was formerly in the possession of the great Roman orator and statesman, Cicero. The Cavalier Camillo Rusconi, a sculptor of great merit, whose name is well known in Italy, added the head and some of the fingers, which are the only parts that are modern.

Under the window piers of the gallery are two very beautiful tables of alabaster Peccorella, bought of Cavaceppi.

Tribune Statues.—A large antique statue of Lucius Verus was purchased at Rome by Mr. Kent.

The "*Juno*" is nearly colossal; the head, torso and legs are antique, and in a very high style of sculpture; her drapery, which is held up by the arm and disposed in large flowing folds, not commonly to be met with in the antique, adds much to the majesty of the goddess.

Roubiliac preferred this statue to any in the gallery. It was a fragment belonging to Cardinal Albani, restored by Cavaceppi, and purchased by Matthew Brettingham.

"Agrippa," the wife of Germanicus, an Imperial figure in the character of Ceres. She has a diadem on her head, which is antique; so is the whole figure except the arms and hands and some few plaits of the drapery restored by Cavaceppi.

"Lucius Antonius," a very fine antique figure bought at Rome by the Earl; the arms and head are finely added by Cavalier Bernini. The whole length of the gallery, including the vestibule and tribune, is 105 feet.

North Dining Room.—A square of 27 feet exclusive of sideboard niche, which is 9 feet by 10 feet.

The ceiling is for the most part taken from Inigo Jones; the dome has a diameter of 14 feet, and 8 feet perpendicular height.

Two magnificent chimneypieces of a similar design, diversified in the devices of their tablets, are placed on opposite sides of the room; these are composed of Sicilian jasper and statuary marble mixed, executed by Carter, who also did the foliage scrolls in the open pilasters of the archway leading to the sideboard, carved in lime-tree wood. The sideboard table, frame, and legs (fragments of an ancient sarcophagus), enriched with gilt metal ornaments, are of porphyry, and the table slab of real Egyptian green marble.

The mosaics in the head of the niche, ornamented with roses and richly gilt, were copied from Desgodetz.

There are in this room two large antique heads in the elliptical niches above the chimneypieces—that of "Aphrodite" being very fine; its companion, "Lucius Verus," was found when draining the port of Nettuno.

South Dining Room.—Originally known as the State bedchamber apartment. This room is similar in dimensions to the drawing-room, and has fine crimson velvet wall-hangings.

The ceiling is one of Inigo Jones' designs, ornamented in the soffits of the beams with vine branches, leaves, and bunches of grapes.

The chimneypiece is taken from Inigo Jones.

Claude Room.—Formerly known as the State dressing-room. The chimneypiece and ceiling are both by Inigo Jones. This room, which is magnificently lighted by one of the large Venetian windows in the south front, contains a selection of choice landscapes by the greatest masters, particularly of Claude Lorraine, who was the favourite painter of the Earl of Leicester.

State Bedchamber (known as the Green State Bedroom), 20 feet by 30 feet by 17 feet high. The three principal pieces of tapestry depicting "Europe," "Africa," and "America," are said to have been formerly in the possession of the Duke of Bavaria. The *manufacture* is of Flanders.

The "Four Seasons" over the doors are of Zucharelli's paintings.

The flowered Genoa velvet bed-hangings of three colours are adorned with the Earl's coronets and pineapples.

Over the chimney is a well-designed picture of "Jupiter caressing Juno," the subject from Homer, by Mr. Gavin Hamilton.

State Dressing Room.—The small chimneypiece of this room is composed of antique Pavonazzo, Derbyshire black marble and white alabaster. There are some choice pictures in this cabinet.

Green State Sitting Room.—The chimneypiece is composed of an antique marble called Sette Bafi, Italian red, and Derbyshire white alabaster, by Pickford.

North State Bedchamber.—The plan of this room is a cube of 21 feet diameter, hung with crimson velvet.

The chimneypiece is of Fior di Perfica, an antique marble. The ornaments within the sunk pilasters (instruments of Roman sacrifice) were copied from a very fine ancient fragment of the same size in the garden of the Villa Medici, by Thomas Carter; on its tablet is represented the birth of the poet Lucan.

North State Sitting Room: 27 feet by 17 feet by 20 feet high.

The ceiling from Inigo Jones. Hung with tapestry excellent both for design and workmanship, and probably copied from paintings by Snyders. Its several pieces exhibit the various productions of the months, caused by the sun's annual progress through the signs of the Zodiac.

The Chapel: 63 feet by 18 feet by 27 feet high.

The principal decoration in the chapel is the picture at the Altar of "The Assumption of The Virgin," a masterly performance by Guido Reni.

The lower portion of the chapel is encrusted with Staffordshire alabaster, and the columns are also of the same material.

One should mention a most interesting crayon drawing, "La Belle Jardinière," by Raphael, of which the large picture is at the Louvre.

Long Library.—The ceiling and pilaster chimneypiece of Sienna marble are both designs of Kent. This library is elegantly and completely fitted with light open bookcases. In the dado portion are shelves for portfolios, &c.

The collection of parchments and seals is exceedingly interesting, as they date back to 1400.

There is a most interesting antique mosaic over the mantelpiece, brought from Rome by Coke of Norfolk, depicting "A Combat between a Lion and a Leopard." Another piece of sculpture represents two woodcocks killed at one shot by Francis Chantrey while staying at Holkham, and carved in marble by himself.

Some beautiful plaster work is to be found in many of the private rooms. In the family wing the ceilings are richly modelled, and the architraves and other woodwork are fine examples of the period, and beautifully carried out in detail.

The Strangers' Wing.—Two rooms are hung with tapestry after Watteau, and the modelling of the ceilings and cornices is finely executed, and all treated in white and gold.

Rustic basements were in vogue at this period, and applied to many villas erected somewhat prior to Holkham, as Houghton Hall, Norfolk; Wanstead House, Essex; the Marquis of Rockingham's, in Yorkshire, with some others, all in that respect imitations of Palladio's villa in Venetian territories. The convenience of this consists in having the upper servants' offices in the basement under the principal apartments.

Holkham is surrounded by a magnificent park, enclosed by walls nine miles in circumference and three miles across. There are seven different approaches to the house, which looks on to a lake frequented by wild fowl. This lake was formerly an arm of the sea.

NEW LONDON COUNTY HALL.

THE Establishment Committee of the London County Council this week reported that, on the completion by Messrs. F. & H. F. Higgs of their contract for the construction of the raft foundations of the new County Hall, the firm claimed a balance of £15,632 4*s.* 0*d.*, or alternatively £16,695 19*s.* 8*d.*, in respect of the contract. The committee was advised that the balance due for measured work only amounted to £2,772 15*s.* 3*d.*, and that the Council was entitled to liquidated damages amounting to £4,400 consequent on delay in completion of the work. The matter was submitted to Mr. English Harrison, K.C., for arbitration, but the proceedings proved abortive, and ultimately a settlement was arrived at under which the contractors agreed to accept £4,787 8*s.* 5*d.*, including the two thousand odd pounds due for measured work, the Council agreeing to waive its claim for damages.

The report of the committee was adopted without discussion, but at question time Mr. Tasker asked the chairman of the committee (1) whether he had acted as intermedium between the Council and the contractors for the raft during the arbitration; (2) if so, upon what authority; and (3) did the settlement set out in the committee's report mean that the Council was being compelled to pay £6,414 13*s.* 1*d.* more than was certified by the superintending architect as being refunded to the contractors?

Mr. Isidore Salmon (chairman of the committee) said the answer to the first question was in the negative. Regarding question No. 2, he authorised, as a matter of urgency, a settlement on certain lines recommended by the Council's legal advisers, after having conferred with the chairman of the Council. His committee confirmed the action taken. The answer to question No. 3 was also in the negative. The sum of £2,014 13*s.* 3*d.* was being paid beyond the amount certified by the superintending architect, in addition to the Council's out-of-pocket expenses—roughly, £935—the Council's claim to liquidated damages being waived.

THE BEAUX-ARTS ATELIER.

THE criticism of the last month's subject, "A Concert Hall on an Open Site," was given by Mr. Arthur Davis, the Patron of the Atelier, on the evening of Wednesday, the 14th inst. Messrs. W. G. Lovell and C. Spencer Willmott gained "mentions," the first named with an exceptionally well-rendered set. Two twelve-hour subjects—"A Studio for a Sculptor at the End of a Town Garden" and "A Jeweller's Shop-front"—were set, for which there were eleven and thirteen sets respectively. Messrs. Bryan Watson and Robert Lowry gained "mentions."

On the evening of Friday, the 16th inst., at 9 o'clock, a meeting attended by thirty members of the Atelier and R.A. Schools was held, at which a paper by Mr. Chaures (logiste, sous patron) on "Town Halls" was read by Mr. Adrian Barrington. Afterwards Mr. Chaures gave a criticism of six of the sets submitted for the Royal Academy gold medal, kindly lent by their authors, several of whom are members. A debate followed, in which nearly everyone took part, especially with reference to the difficulty of modern conditions. The resolution arrived at (after midnight) ran:—

"That this meeting is of opinion that modern municipal necessities and desires are best met by the arrangement called the 'civic centre,' in which the separate element of these desires are embodied in separate buildings combined as an architectural entity."

PRESTON SOCIETY OF ARCHITECTS.

THE members of the newly organised Association of Architects, Surveyors, and Civil Engineers for Preston and District held their inaugural dinner at the Bull and Royal Hotel last week.

Mr. Harry Heaton, the chairman, proposed the usual loyal toasts.

Mr. Arnold J. T. Ellison, the secretary, apologised for the unavoidable absence of the President, Mr. Rawcliffe, who had had a relapse of his nervous breakdown. It was to him a great disappointment that he was prevented from being present. Apologies were also received from the Vice-President (Mr. Shepperd) and Mr. Mumford, &c. Mr. Ellison, proceeding, stated that the new Society had made good progress. Out of the twenty-four practising offices of architects and surveyors seventeen were members.

The Chairman briefly sketched the objects of the Society. One object was to protect the professional architects in Preston and district and to prevent them from being interfered with by outside illicit assistants and amateurs in both professional and public offices. He thought that it was about time that persons who were in the employ of the public and paid out of the public purse should be prohibited from doing work which legitimately belonged to professional architects who conducted their offices on proper lines. It was not only that they interfered with the incomes of legitimate architects, but the public suffer thereby from inefficiency, which reflected upon an honourable profession. If people would only go to an architect who properly understood his business they would get better results, which in the long run would also be most profitable to them. Another object the Society had was to prevent men who are engaged as builders from doing their work; they were men who had some knowledge of the preparation of plans, but he suggested that in regard to them the old saying might be applied—the cobbler should stick to his last. He thought that architects should be left to look after their own preserves. The Society aimed at helping architects in every way possible, and in conclusion he appealed to them not to allow petty jealousies and personal prejudices to interfere with the harmonious working of the Society. He also expressed the hope that in a very short time every professional architect in Preston would belong to the Society.

Mr. Mangan read the speech of the President in the absence of Mr. Rawcliffe. In the course of his observations the President remarked that it was with feelings of no little pride that he spoke to them as the first President of the Association. It was towards the latter end of the year 1912 that a circular reached them, individually, from the Master Builders' Association, asking their attention to the question of separate tendering. A short time prior to that the same Association had submitted to them and asked their consideration of a schedule of quantities with a view to securing uniformity in the method of placing measurements of labour and material before them when inviting estimates from their members. Several architects felt for some time previous that if it were feasible the banding of themselves into an Association would be a step in the right direction. These important papers and documents formulated by the Master Builders' Association were the means of focussing and concentrating these individual views, insomuch that on January 31, 1913, a meeting of architects was called, at which it was resolved to form a Society or Association of Architects, Surveyors, and Civil Engineers for Preston and the district. An executive comprising five architects and two surveyors (together with Mr. Ellison as hon. secretary *pro. tem*) was delegated to arrange the necessary preliminaries and formalities for submission to a future meeting. Those gentlemen set themselves to this task, and on March 17, 1913, at a meeting a memorandum and articles of association were submitted and adopted, officers were duly elected, and the Association of Architects, Surveyors, and Civil Engineers for Preston and District passed from the nebulous stage and took concrete form. Many members have from time to time encountered cases of the preparation of drawings and specifications, and even bills of quantities, both by builders or their employees and also by members of the staff in various public offices. The executive have represented the injustice of this to those concerned, and have received assurances that the continuation of such a practice would be discountenanced and, so far as the principals can secure such a result, discontinued.

Mr. Howarth submitted the "Town and Trade of Preston," and said that he hoped they were in for a good, prosperous year.

Mr. Gilbert Starkie responded. With regard to the trade of Preston, he hoped and expected that they were still in for good times. They had gone through critical times in Preston, and if such times came again no doubt they would be able to face them.

Mr. Ben Sykes proposed the toast of the Master Builders' Association. It had come about that in their work as builders and architects they were intimately associated with each other, and it was very desirable that the two classes should work harmoniously together. He always felt sorry for architects, because their commission was so small that any job for less than £5,000 meant very little to them. He wished every possible success to the Master Builders' Association, and particularly in their efforts to prevent assistants in their offices from doing work which ought to be legitimately done by architects.

Mr. Shorrock briefly responded to the toast, and said that so strong was the Master Builders' Association that it was practically impossible for a builder to live in Preston without he was a member of their Association, and no builder could be a member unless he acted perfectly on the square with his fellow-members. They were in hearty sympathy with the architects.

Mr. J. H. Mangan proposed the health of the President and spoke in high complimentary terms of Mr. Rawcliffe.

THE GARDEN CITIES AND TOWN PLANNING ASSOCIATION.

THE annual meeting of the Garden Cities and Town Planning Association will take place, by kind permission of the Worshipful Company of Carpenters, at the Carpenters' Hall, Throgmorton Street, on Monday, February 16, at 4 P.M. It is expected that the Hon. Mr. Justice Neville (President) or Mr. Cecil Harmsworth, M.P. (Chairman of Council), will preside. Among the speakers will be Lord Robert Cecil, M.P.

It is proposed to deal with the economic aspect of the true Garden City scheme, and a new feature will be introduced in a brief lantern lecture illustrating the position of the Garden City movement at the present time.

Cards of invitation to the meeting can be obtained from the Secretary, 3 Gray's Inn Place, Gray's Inn, W.C.

GERMAN TOWN PLANS AND HOUSING.

A LANTERN lecture entitled "German Town Plans and Housing" will be given by Mr. Charles C. Reade at the Royal Institute of British Architects (9 Conduit Street, W.), on Tuesday, February 3, at 8.30 P.M., when Mr. Raymond Unwin, F.R.I.B.A., will preside.

Mr. Reade (who is assistant secretary of the Garden Cities and Town Planning Association) lately spent two months in Germany investigating housing and town planning conditions in many of the principal towns and cities in Germany, and has marshalled much illustrated material and many plans showing not only recent developments in modern German town planning, but the effect of many of these plans on the housing of the people.

Those desirous of attending should apply for an invitation from the Secretary, Royal Institute of British Architects, 9 Conduit Street, W., or the Garden Cities and Town Planning Association, 3 Gray's Inn Place, W.C.

PORTABLE CHEMICAL FIRE EXTINGUISHERS.

THE British Fire Prevention Committee have found it necessary to formulate a standard test and a model specification for portable chemical fire extinguishers for the reasons stated in the following "Note":—

1. The British Fire Prevention Committee have found it necessary to formulate a standard test for portable chemical fire extinguishers from a constructional point of view, having regard firstly to the several fatalities that have occurred through these appliances bursting when being operated, and secondly through the tendency of certain irresponsible makers or their agents to put on the market appliances of the "cheap-jack" type that are distinctly dangerous to handle.

2. The new standard test which this Committee has formulated is given in Memorandum I. of July 1913, and came into operation with the year 1914.

3. The Committee have also formulated a provisional specification for standard portable chemical fire extinguishers from the constructional point of view, which should serve as a guide for would-be purchasers of such appliances. This specification is set out in Memorandum II. of October 1913, and also comes into use as from January 1914.

4. Both memoranda are obtainable from the offices of the British Fire Prevention Committee, No. 8 Waterloo Place, London, S.W., upon written application to the Registrar (with return postage).

5. Your Committee's executive has been in communication with various public authorities as to the advisability of adopting the Committee's requirements for the extinguishers they purchase for their departments or require to be installed in establishments under their supervision, and various authorities, corporations, &c., at home and overseas, propose in future to adopt the safeguards the Committee advocate.

6. In making this announcement the British Fire Prevention Committee wish to indicate that while portable chemical fire extinguishers meet a public requirement, the members of the general public when purchasing extinguishers should not only see that they conform to the standard test and specification adopted by this Committee, but that they should keep constantly in mind that such appliances require care in maintenance and handling.

7. The Committee also desire to impress upon the public that portable chemical fire extinguishers are nothing more than first-aid appliances.

8. In addition, the public should remember that portable chemical fire extinguishers are not the only form of portable first-aid appliances, but that ordinary buckets of water and hand-pumps are equally, if not more, effective in the majority of cases.

The memoranda referred to in the "Note" are as follows:—

MEMORANDUM I.

THE BRITISH FIRE PREVENTION COMMITTEE'S STANDARD CONSTRUCTIONAL TEST FOR PORTABLE CHEMICAL FIRE EXTINGUISHERS.

Extinguishers to be tested by hydraulic pressure to 350 lb. per sq. in. (23.8 atmos.) for five minutes.

Note.—This standard test is in addition to the tests which the Committee has been and is using to ascertain the efficiency or otherwise of portable fire extinguishers in dealing with actual fires.

Issued by order of the Executive,
EDWIN O. SACHS, *Chairman.*
ELLIS MARSLAND, *Gen. Hon. Secretary.*

July 1913.

MEMORANDUM II.

SUGGESTED SPECIFICATION FOR STANDARD PORTABLE CHEMICAL FIRE EXTINGUISHERS.

Size to be limited—not to exceed 3 gallons (13.6 litres), nor to be under 1 gallon (4.5 litres).

Construction to be as follows:—

Shell: Cylindrical in form, not exceeding 8 in. (.2 m.) diameter.

Ends: Dished, with riveted lap joint. The radius not to exceed the diameter of the end of the shell.

Material: Copper or steel, well coated with tin on the inside and painted on the outside.

Gauge: 18 B.W.G. (1.218 mm.).

Seams (side and top and bottom): Soldered, lap-jointed, and riveted. Rivets at 1 in. ((.0254 m.) pitch.

Collar with screw cap: Brass or gunmetal, 1 in. (.0254 m.) in depth, with safety holes. Opening to be 3 in. (.0762 m.) in diameter. Interrupted threads not allowed.

Outlet: Brass or gunmetal, $\frac{3}{8}$-in. (.0095 m.) bore with strainer.

Nozzle: Brass or gunmetal, not less than $\frac{1}{8}$ in. (.0031 m.).

Hose: $\frac{3}{8}$-in. bore and sufficiently short to prevent nozzle touching the ground, &c.

Plunger and handles: Strong and conveniently placed.

Washer: $\frac{1}{8}$-in. rubber or leather.

Valves or control cocks: None.

Expansion chamber to be provided.

Air space to be 15 per cent. of the volume of the cylinder.

Directions for use: Maker's or vendor's name plate, year of manufacture, particulars of test: all placed on the extinguisher by means of transfers.

Mounting: Provision to be made for connections for testing purposes.

Issued provisionally for 1914 by order of the Executive,
EDWIN O. SACHS, *Chairman.*
ELLIS MARSLAND, *Gen. Hon. Secretary.*
October 8, 1913.

REGISTRATION OF ARCHITECTS.

THE Society of Architects' Draft Bill for the Statutory Registration of Architects was considered by the Council of the Devon and Exeter Architectural Society on January 16, when the following resolution was passed:—

"That this Society, having always approved of the principle of registration, now approve the Bill as drafted by the Society of Architects."

SANITARY ENGINEERING.

"OF making many books there is no end, and much study is a weariness to the flesh." Thus wrote the great king-preacher, and thus have iterated and reiterated many men since his days, with perhaps special emphasis on "weariness," where the enunciator is of those who review books. But amidst much gall there is a modicum of honey, though truly it may seem strange to the uninitiated thus to designate works on the subject of sanitary engineering. It is, indeed, one that holds in solution a fascination, readily precipitated, when a capable exponent of the science undertakes the experiment.

The same king-preacher, old in knowledge and years, pronounced the non-existence of novelty, of originality; the justice of his words is becoming increasingly apparent as the years roll by. We are, indeed, inclined to regard Solomon ben David as the first and last of non-productive prototypes, in which case the truth of his dictum is evident. As we ventured to point out a while ago, our very latest and highly fashionable disease—appendicitis—if not as old as the hills, dates back at least to the palmy days of Egypt; the use of drainage is certainly not new, for did not the Romans have their cloacae? and water-engineering is on record since the days of Hezekiah.

With all this and despite all this, of the making of many books upon sanitary matters there is no end, but can readers be found for all these works? or, if found, is there an adequate number of purchasers to prove of practical satisfaction to author and publisher? We confess our sensation of recurrent wonder in taking note of the multitudinous books appearing—and *laus Cœlo*! often disappearing, like meteors across our path.

At the present moment there lie upon our table two works upon sanitary engineering,* and of one of these at least, Mr. Blake's "Drainage and Sanitation," we can predicate that it is no mere meteoric appearance. It is, as it claims to be, "a practical exposition of the conditions vital to healthy buildings, their surroundings and construction, their ventilation, heating, lighting, water and waste services." An octavo volume of some five hundred pages, and very adequately illustrated, it merits the bestowal of unstinted praise upon those concerned in the labour of its production. To what extent, however, the public will be prepared to regard the price as justifiable in these days of *la haute finance* will be proved during the revolving months. Mr. Blake has dealt with his subject with an engaging regard to systematisation in the course of the fifteen chapters; and if at times the remarks are obviously obvious, it is still fully obvious, that this must be the case in a work of such nature.

It is regrettable that there should be confusion in regard to the opening diagrams (figs. 1, 2, and 3 being properly 2, 3, and 1 respectively), as such an error might readily create a prejudice against the book, to which further perusal would, as above indicated, prove a corrective. We may suppose that the reference on page 18 to a slewed house is either altogether a Transatlantic yarn or else the observer was himself slewed; need we say that in writing this we are not referring to the author of the book?

We must express our dissent from the recommendation of north aspect for a dining-room; for in this specialised apartment the greatest amount of daylight is not the consideration, and such an aspect would certainly provide a cold room. But the chapter wherein the above and other items are considered is well worthy of detailed perusal.

The pages dealing with ventilation also prove profitable reading, but we might point out that fig. 38 has, unfortunately, been inserted upside down; nor can we confirm the remark on page 56 that "a chimney-breast ventilating valve should never be put in the flue of a smoky chimney, or it will make it worse." Fiat experimentum in corpore vili! We have so acted in the years gone by.

A pleasant feature of Mr. Blake's text is his introduction of historical bits of information, which serve to enliven still further what is even otherwise not dull reading.

A chapter on warming and lighting follows that upon ventilation, and it maintains Mr. Blake's already acquired character for perspicuity. We will not draw attention to every slight error noticed; they will doubtless be amended when a new edition is in the Press. The remarks on pumps prove very interesting, and the author is sound in regard to sanitary fittings, drainage, and sewerage, and we are pleased to infer that he favours the retention of the interceptor. It is rather quaint to write of "an average about $2\frac{1}{2}$ to 6 feet" (see page 373). In making sanitary surveys, we would point out the desirability of a surveyor always engaging his own labour, such men as he can confidently employ; but we consider that Mr. Blake takes altogether too wide a view of the scope of a sanitary survey, as it is customarily understood. On page 477 it should read that water closets are required to have but one external wall, whilst earth closets must have at least two such. A detailed index (which, however, needs revision, in order to perfect its arrangement) concludes a book which we can confidently recommend to our readers.

When we turn to the work on house drainage by Mr. Gilbert Thomson (Lecturer to the Royal Technical College, Glasgow), we are much less favourably impressed. Is it perhaps due to the slighting way in which the writer refers to architects? We should be sorry to let any critical acumen which we may possess be prejudiced by professional pique; and with this caution in mind we will review Mr. Thomson's work conscientiously. We must, however, seriously protest against the introductory remarks on pages 2 and 3 anent architects in relation to sanitary work. Nor can we agree that "it would be often better to have a short drain through a house than to have a long drain round a house" (pages 20 and 21), despite any plea that may be urged in favour. Is it not, too, a curious remark to make (page 60) in regard to a trap that "its efficacy depends on the retention of a part of the very substance that we wish to remove as quickly as possible"? Fig. 35 is not only inserted topsy-turvy, but also we fail to see how the cover could work in practice. Fig. 37, too, has a surface trap dotted on in a fashion and position that renders it hopelessly unpractical; nor is it customary to lay the spigot ends of pipes in the thickness of the brickwork of inspection chambers, as drawn in many of the figures, and, furthermore, the diagrams would look much more businesslike if the spigot and socket jointing were shown throughout, instead of being often left to the imagination. It is, of course, quite incorrect to state that the open-channel manhole is out of date (except the reference may be to Scottish practice), nor should the walls of manholes ever be of less substance than 9 inches. The suggestion that subsoil water may be allowed to percolate into the manhole chambers should be unthinkable, for where water can trickle in sewage can as readily percolate outwards.

We cannot always follow Mr. Thomson in his pendulating views, as, for example, those anent the position of pipes (see pages 98 and 99). It must be borne in mind (as shadowed just above) that in regard to some points, which seem to Southerners curious, the writer may be merely expounding Scotch practice, and we would also wish to express here, after our somewhat adverse criticism, that we can accord approval to many of the chapters in bulk, even if details here and there call for condemnation.

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* *Drainage and Sanitation.* By E. H. Blake, F.S.I., &c. (London: B. T. Batsford. 10s. net.)

Modern Sanitary Engineering. Part I. House Drainage. By G. Thomson, M.A., F.R.S.E., &c. (London: Constable & Co., Ltd. 6s. net.)

It is an absurdity to write of the term "air-inlet" as one of "courtesy"; the practical value of this drain-ventilator is in measure with its quality; but even as poor traps may prove to be no traps, so may poor air-inlets act as air-outlets.

The effect left upon us after a perusal of the book (which is but half the contents of Mr. Blake's) is one of dissatisfaction and of "weariness to the flesh" as compared with the pleasure which which we have read the much longer work.

AGENT OR ARBITRATOR?

IN a Divisional Court of the King's Bench on Wednesday, consisting of Justices Ridley and Bankes, Messrs. Cecil & Co., architects, surveyors, and estate agents, of No. 1 Station Road, Sunbury, appealed against a judgment of Judge Harington at the Chertsey County Court awarding £100 to a Mrs. Catherine Ewens, of Funtington, near Chichester, Sussex. In the alternative a new trial was asked for.

Mr. J. Bromley Eames appeared for the appellants and Mr. Le Quesne for the respondent.

Mr. Eames said that Messrs. Cecil & Co. were the defendants in the action before the County Court Judge which was brought by Mrs. Ewens for negligence as surveyors and architects in giving certificates under a building agreement. Consequent upon the report of the referee the Judge below gave Mrs. Ewens judgment for £100. The case was of very great importance to architects, because his (counsel's) main contention was that no action lay in the present case. This was because he contended that the appellants gave certificates in the capacity of a quasi-arbitrator, and if this was so, they were not liable to any action except on the ground of fraud or collusion. As regards the new trial, he asked for that on two grounds—namely, rejection of evidence which ought to have been admitted and misdirection as to measure of damages. Detailing the facts, counsel went on to say that Mrs. Ewens in 1910 was called upon by the local authority to execute a number of repairs in fourteen cottages situated at Sunbury-on-Thames, and she appointed the appellants to superintend the work, which was carried out by a local builder. An essential clause of the agreement appointing the appellants was to the effect that their reasonable judgment as to whether the work was carried out properly and according to estimate was to be final and binding upon all parties. The appellants gave certificates from time to time, and two years afterwards Mrs. Ewens brought an action claiming damages for negligence, because during the carrying out of the work the appellants had given certificates in respect of some of the work which was now found to have been badly executed.

Mr. Le Quesne: I say that the work was supervised without any skill at all.

Legal argument followed, Mr. Le Quesne contending that under the agreement in this case the appellants were not quasi-arbitrators, but liable to the respondent for the negligence of which the referee had found them guilty.

Mr. Justice Ridley said that the point had been urged that the appellants were not liable because they acted in the capacity of a quasi-arbitrator under their agreement with the respondent. On the other hand, it was said that the appellants were simply agents of the building owner and responsible to Mrs. Ewens for having failed to certify properly. It seemed to him that the decision depended upon a full consideration of the clauses of the agreement between the parties. Having thus considered the agreement, he had come to the conclusion that the appellants were in such a relationship to the respondent as not to make them liable for mere negligence. The duty put upon them by the agreement called for the exercise of their skill and discretion and put them into the position of a quasi-arbitrator. He believed that it was perfectly sound to say that a man might act in such a case as this in two capacities, one merely as agent and the other as an arbitrator between the building owner and the contractor. That followed from various decisions, but in this case he thought that the appellants acted in the latter capacity. It seemed necessary to conclude that in deciding whether the work was defective or not, whether it was according to estimate or not, the appellants' own reasonable satisfaction was to govern their decision, and according to the agreement that was to be final and binding. His Lordship added that he could not come to any other decision but that the appellants were acting here in the capacity of a quasi-arbitrator, and were not liable for negligence except in the event of fraud or collusion, of which there was no evidence in the present case. Therefore the judgment of the County Court Judge was wrong.

Mr. Justice Bankes, in delivering judgment to the same effect, said that there were three clauses in the agreement which went in his opinion to show that the appellants were in the position of a quasi-arbitrator, and not agents of the building owner. Their position depended in each case upon the construction of the agreement as a whole.

The Court accordingly reversed the judgment of the Court below, finding in favour of the appellants, with costs.

THE LAW OF DILAPIDATIONS.*

By GRAHAM MOULD (Associate), Barrister-at-Law.

(Continued from last week.)

(G) *Tenantable Repair.*

The meaning of this term was fully discussed in *Proudfoot* v. *Hart* [1890], 25 Q. B., 42.

The covenant in that case ran: "during the said term" (agreement for three years) "keep the said premises in good tenantable repair, and so leave the same at the expiration thereof."

The items in respect of which controversy arose were:—

(*a*) Repapering walls of rooms where the paper which was upon them when the tenancy commenced had become worn out.

(*b*) Repainting internal woodwork where the paint which was on such woodwork when the tenancy commenced had worn off.

(*c*) Whitewashing and cleaning staircases and ceilings.

(*d*) Replacing with a new floor a kitchen floor which had existed when the tenancy commenced.

It was conceded that the premises were out of tenantable repair when the tenancy began.

Having regard to the fact that the Court of Appeal did not entirely agree with the judgments of Cave and Mathew, J.J., and to the further fact that some of the opinions expressed by those judges are clearly overruled by the recent case of *Lurcott* v. *Wakely*, it is safer in dealing with *Proudfoot* v. *Hart* to rely solely upon the judgments delivered in the Court of Appeal.

Lord Esher, M.R. (*inter alia*), said:—

I am of opinion that under a contract to keep the premises in tenantable repair and leave them in tenantable repair the obligation of the tenant, if the premises are not in tenantable repair when the tenancy begins, is to put them into, keep them in, and deliver them up in tenantable repair.

He then proceeded to suggest that "habitable repair," "tenantable repair," and "good repair" all meant much the same thing.

His Lordship (having referred to certain authorities) then proceeded:—

The result of the cases seems to be this: the question whether the house was, or was not, in tenantable repair when the tenancy began is immaterial; but the age of the house is very material with respect to the obligation both to keep and to leave it in tenantable repair. It is obvious that the obligation is very different when the house is fifty years older than it was when the tenancy began. Lopes, L.J., has drawn up a definition of the term "tenantable repair," with which I entirely agree. It is this: "'Good tenantable repair' is such repair as, having regard to the age, character, and locality of the house, would make it reasonably fit for the occupation of a reasonably minded tenant of the class who would be likely to take it." The age of the house must be taken into account, because nobody could reasonably expect that a house 200 years old should be in the same condition of repair as a house lately built; the character of the house must be taken into account, because the same class of repairs as would be necessary to a palace would be wholly unnecessary to a cottage; and the locality of the house must be taken into account, because the state of repair necessary for a house in Grosvenor Square would be wholly different from the state of repair necessary for a house in Spitalfields. The house need not be put into the same condition as when the tenant took it; it need not be put into perfect repair; it need only be put into such a state of repair as renders it reasonably fit for the occupation of a reasonably minded tenant of the class who would be likely to take it.

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* **A Paper read at the Surveyors' Institution on January 12.**

. . . . With regard to the papering . . . . I agree that he is not bound to repaper simply because the old paper has become worn out, but I do not agree with the view that under a covenant to keep a house in tenantable repair the tenant can never be required to put up new paper. Take a house in Grosvenor Square. If, when the tenancy ends, the paper on the walls is merely in a worse condition than when the tenant went in, I think the mere fact of its being in a worse condition does not impose upon the tenant any obligation to repaper under the covenant, if it is in such a condition that a reasonably minded tenant of the class who take houses in Grosvenor Square would not think the house unfit for his occupation. But suppose that the damp has caused the paper to peel off the walls, and it is lying upon the floor, so that such a tenant would think it a disgrace, I should say then that the tenant was bound under his covenant to leave the premises in tenantable repair, to put up new paper. He need not put up paper of a similar kind—which I take to mean of equal value—to the paper which was on the walls when his tenancy began. He need not put up a paper of a richer character than would satisfy a reasonable man within the definition.

The same view applies as to painting. If the paint is in such a state that the woodwork will decay unless it is repainted, it is obvious that the tenant must repaint. But I think that his obligation goes further than that. A house in Spitalfields is never painted in the same way as one in Grosvenor Square. If the tenant leaves a house in Grosvenor Square with painting only good enough for a house in Spitalfields, he has not discharged his obligation. He must paint it in such a way as would satisfy a reasonable tenant taking a house in Grosvenor Square. As to whitewashing, one knows it is impossible to keep ceilings in the same condition as when they have just been whitewashed. But if, though the ceilings have become blacker, they are still in such a condition that a reasonable man would not say "I will not take this house because of the state of the ceilings," then I think that the tenant is not bound, under his covenant to leave the house in tenantable repair, to whitewash them. Take, again, the case of a house in Grosvenor Square having an ornamental ceiling which is a beautiful work of art. A tenant goes in and finds such a ceiling in the house, and in course of time the gilding becomes in such a bad condition or so much worn off that the ceiling is no longer ornamental. I should think that a reasonable tenant taking a house in Grosvenor Square would not require a gilded ceiling at all. If that be so, on the mere covenant to leave the premises in tenantable repair, I should think that the tenant who has entered into that covenant was not bound to regild the ceiling at all. As to the floor, it may have been rotten when the tenancy began. If it was in such a state when the tenancy began that no reasonable man would take the house with a floor in that state, then the tenant's obligation is to put the floor into tenantable repair. The question is, What is the state of the floor when the tenant is called upon to fulfil his covenant? If it has become perfectly rotten he must put down a new floor, but if he can make it good in the sense in which I have spoken of all the other things—the paper, the paint, the whitewashing—he is not bound to put down a new floor. He may satisfy his obligation under the covenant by repairing it. If he leaves the floor out of repair when the tenancy ends and the landlord comes in, the landlord may do the repairs himself and charge the costs as damages against the tenant; but he is only entitled to charge him with the necessary cost of a floor which would satisfy a reasonable man taking the premises. If the landlord puts down a new floor of a different kind, he cannot charge the tenant with the cost of it. He is entitled to charge the cost of doing what the tenant had to do under his covenant, but he is not entitled to charge according to what he has himself in fact done.

Lopes, L.J., after stating that he was of the same opinion, asked:—

What is the obligation of the tenant under such a contract? First he must, if the premises are out of repair when he takes them, put them into good tenantable repair. *Payne* v. *Haine* is an authority for saying that that is his obligation. It is clear also that under such a contract as this he must commit no waste. Therefore, with respect to the kitchen floor, the tenant's obligation in the present case was either to repair the old floor or to put down a new one. As to papering and painting, generally speaking the tenant would not be bound to repaper or repaint. Most clearly he is not bound to repaper with similar paper to that which was on the walls when the tenancy began, or to repaint with similar paint. Most clearly, also, he is not bound to do repairs which are merely decorative. But if at the end of the lease the paper and paint are in such a condition as to cause portions of the premises to go into decay, he is bound to repaper and repaint to such an extent as will satisfy the terms of the definition, which I have stated. Again, if the paint through the lapse of time has worn off, or the paper has become worn out, so that their condition has become such as not to satisfy a reasonably minded tenant of the class who would be likely to take the house, then he must repaper and repaint so as to make the premises reasonably fit, within the definition, for the occupation of such a tenant; and what I have said with respect to papering and painting applies also to all the other kinds of repair which have been mentioned.

(H) *Fire.*

Where a tenant covenants without qualification to keep and leave in repair he is bound to rebuild the demised premises in the event of their destruction by fire or other extraordinary accident.

And where the tenant is under covenant to insure, his liability to rebuild under the covenant to repair is not limited to either the amount for which he was bound to insure, or to the amount for which, in fact, he has insured. (*Digby* v. *Atkinson* [1815], 4 Camp., 275.)

Where the landlord voluntarily insures, in his own name alone, and receives the insurance money, that fact alone does not render him liable to rebuild nor relieve the tenant from his obligation to rebuild under the covenant to keep and leave in repair. Nor, inequitable though it may seem, is the tenant entitled to any contribution towards the cost of rebuilding from a landlord who has so insured and received the insurance money. The best course for the tenant to pursue in the case where the premises are burned down and the landlord has voluntarily insured is to apply as a "person interested," under 14 Geo. III., c. 78, s. 83, to the insurance office, before it has settled with the landlord, to apply the insurance money in rebuilding. In order to be effectual two essentials must be observed—namely, (*a*) there must be a distinct request to the office that the money shall be applied in rebuilding, and (*b*) such request must be made before the office has settled with the insurer. (*Simpson* v. *Scottish Union* [1863], 1 H. & M., 618.) In the event of the destruction of premises by fire, the measure of damages recoverable by the landlord is not necessarily the entire cost of rebuilding, but that amount less the difference between the value of the new building and the old one. (*Yates* v. *Dunster* [1855], 11 Ex., 15.) It must be remembered that even where there is a proviso in the lease relieving the tenant from liability to rebuild in the event of destruction by fire, such a proviso (without more) will neither cast upon the landlord the burden of rebuilding, nor relieve the tenant from the obligation of paying rent during the remainder of the lease. (*Marshall* v. *Schofield* [1882], 52 L. J., Q. B., 58.)

An exception of damage by "fire, storm, tempest, or other inevitable accident" will not help the tenant where the "inevitable" accident is brought about by the tenant himself: thus where a warehouse fell because the tenant overloaded one of the floors it was held that the accident did not come within the scope of the exemption. (*Manchester Bonded Company* v. *Carr* [1880], 5 C. P. D., 507.)

(I) *Non-liability of Tenant to rebuild in case of Total Destruction.*

In *Lister* v. *Lane* [1893], 2 Q. B., 212, the lessee covenanted that he would, "when and where, and as often as occasion shall require well, sufficiently, and substantially repair, uphold, sustain, maintain, amend, and keep" the demised premises and the same "so well and substantially repaired, upheld, sustained, maintained, amended, and kept" at the end of the term yield up to the lessors. The demised premises included a wharf, warehouse, dwelling-house, stables, and sheds. At the time of the demise, which was for a term of seven years, the dwelling-house was at least 100 years old, and possibly much older. Before the end of the term one of the walls of the house was bulging out, and after the end of the term the house was condemned by the district surveyor as a dangerous structure, and was pulled down. The foundation of the house was a timber platform resting on a boggy or muddy soil. The bulging of the wall was caused by the rotting of the timber. There was evidence

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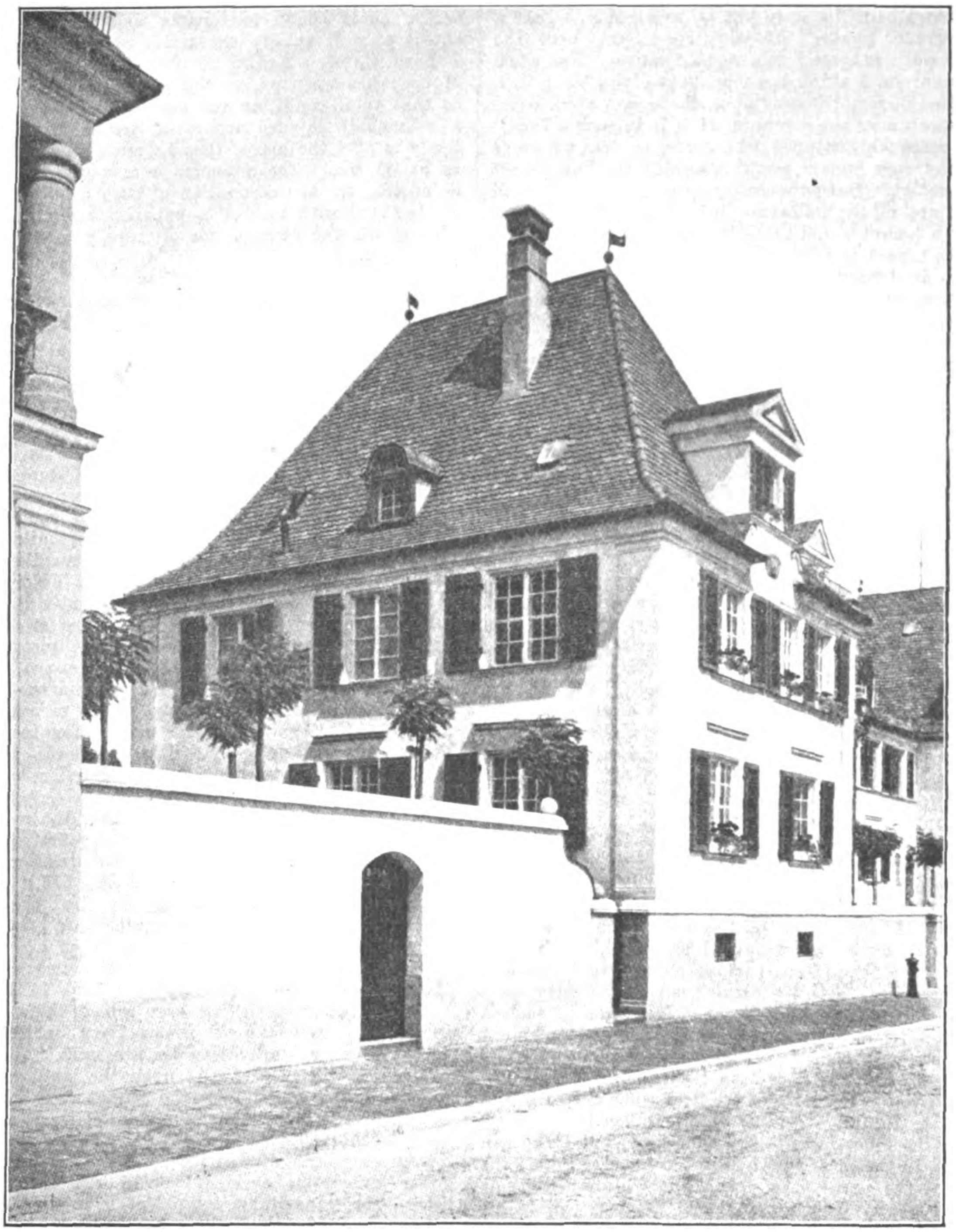


[From *Moderne Bauformen.*

PRIVATE HOUSE IN THE CAPRIVI-STRASSE, NUREMBERG.—Professor LUDWIG RUFF, Architect.

that the wall might have been repaired during the term by means of underpinning. The sum of £569 was claimed for rebuilding the dwelling-house.

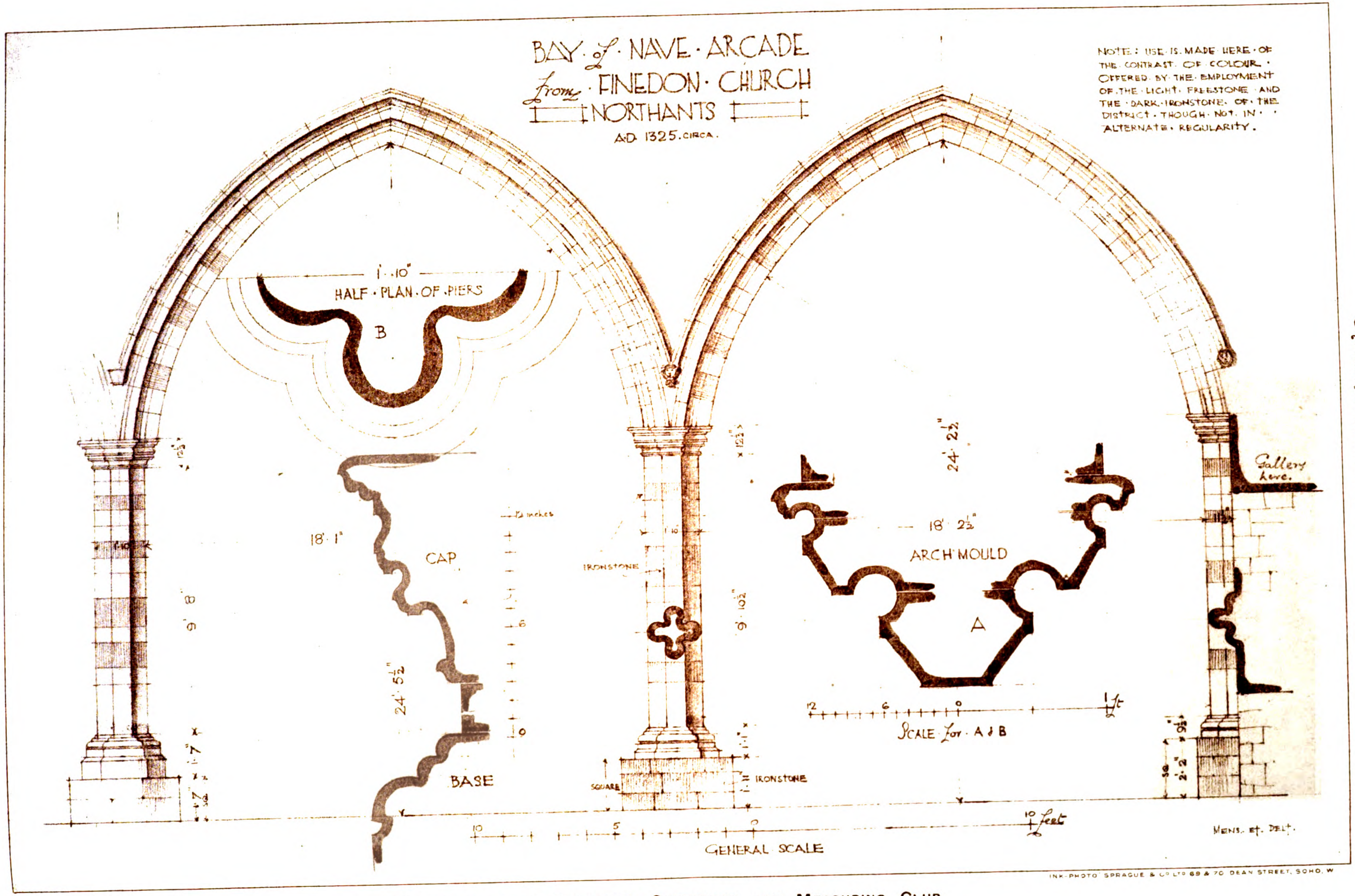
The Court decided that the tenant was not liable to rebuild the house.

Lord Esher, M.R., said:—

. . . You have then to look at the condition of the house at the time of the demise, and, amongst other things, the nature of the house—what kind of a house it is. If it is a timber house the lessee is not bound to repair it by making a brick or a stone house. If it is a house built upon wooden piles in soft ground the lessee is not bound to take them out and to put in concrete piles. . . . However large the words of the covenant may be, a covenant to repair a house is not a covenant to give a different thing from that which the tenant took when he entered into the covenant. He has to repair that thing which he took; he is not obliged to make a new and different thing. . . . The tenant from time to time did the proper repairs, and now the plaintiffs want him to do something for which he is not liable, and which would be of no avail unless he built a house of an entirely different kind.

Kay, L.J., said:—

I am of the same opinion. I will add a few words with regard to the law. In construing such a covenant regard must be had to the character and condition of the demised property, and, assuming that this covenant is, as has been argued, expressed in the largest terms, that it is a covenant to keep in repair and to put in repair, still *Payne* v. *Haine* (1) shows that regard must be had to the character of the house to which the covenant applies. Here the house was built upon a timber structure laid upon mud, the solid gravel being 17 feet below the timber structure, and the only way in which the effect of timber upon the house could be obviated is, according to the surveyor's evidence, by "underpinning" the house. That was the only way to repair it during the tenancy. "Underpinning," as I understand, means digging down through the mud until you reach the solid gravel, and then building up from that to the brickwork of the house. Would that


BAY of NAVE ARCADE
from FINEDON CHURCH
NORTHANTS
A.D. 1325. CIRCA.
NOTE: USE IS MADE HERE OF THE CONTRAST OF COLOUR OFFERED BY THE EMPLOYMENT OF THE LIGHT FREESTONE AND THE DARK IRONSTONE OF THE DISTRICT THOUGH NOT IN ALTERNATE REGULARITY.
1' 10"
HALF PLAN OF PIERS
B
18' 1"
CAP
BASE
24' 5½"
9' 8"
12½"
1' 7"
1' 2"
12 inches
6
0
IRONSTONE
SQUARE
IRONSTONE
9' 10½"
12½"
1' 1"
24' 2½"
18' 2½"
ARCH MOULD
A
12
6
0
1 ft
SCALE for A & B
Gallery here.
2' 2"
9½"
10
5
0
10 feet
GENERAL SCALE
MENS. ET. DEL.

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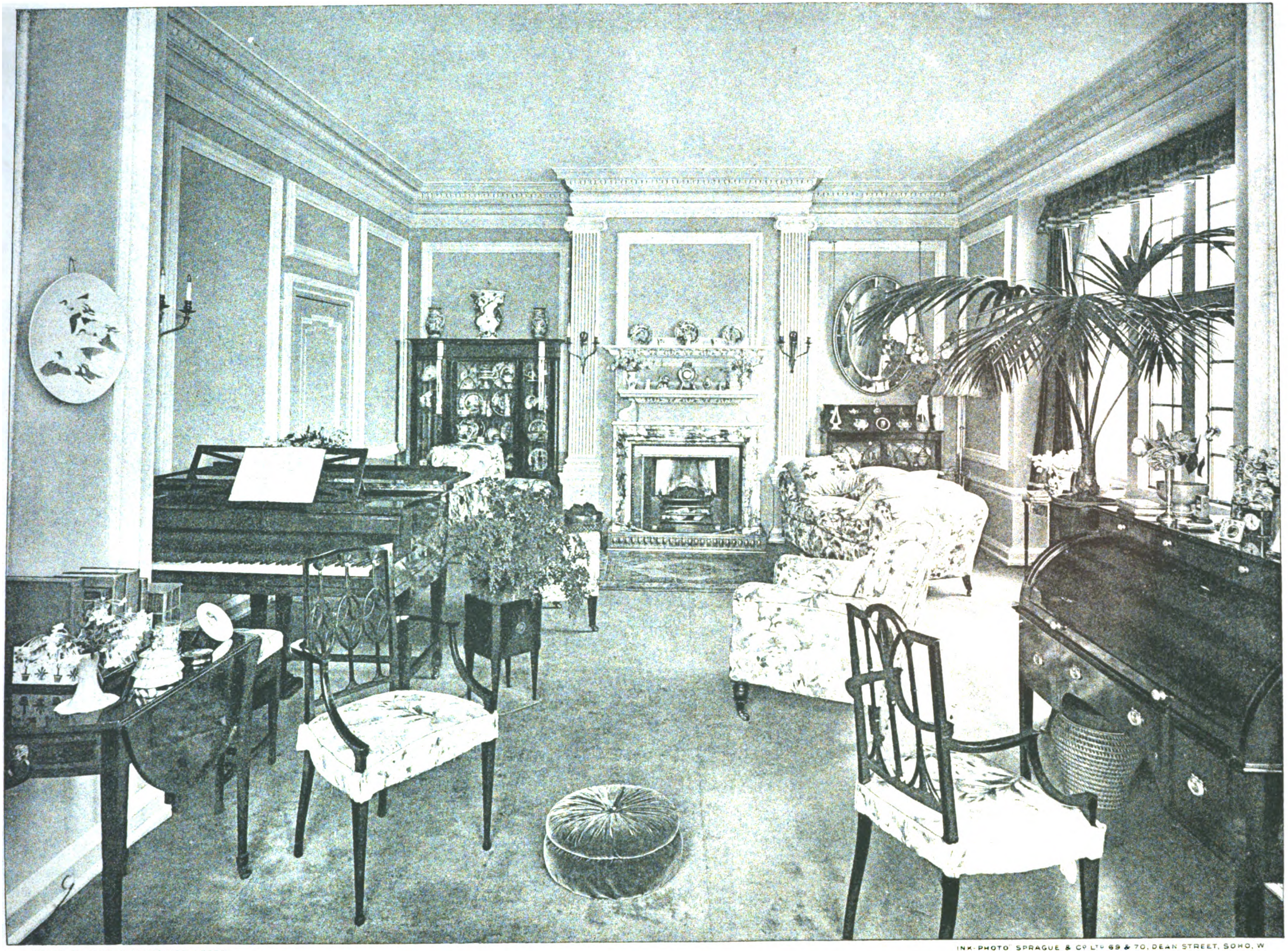

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Mr. JOHN C. PROCTER, A.R.I.B.A., Architect

TOR SIDE, HELMSHORE, LANCASHIRE. DRAWING ROOM

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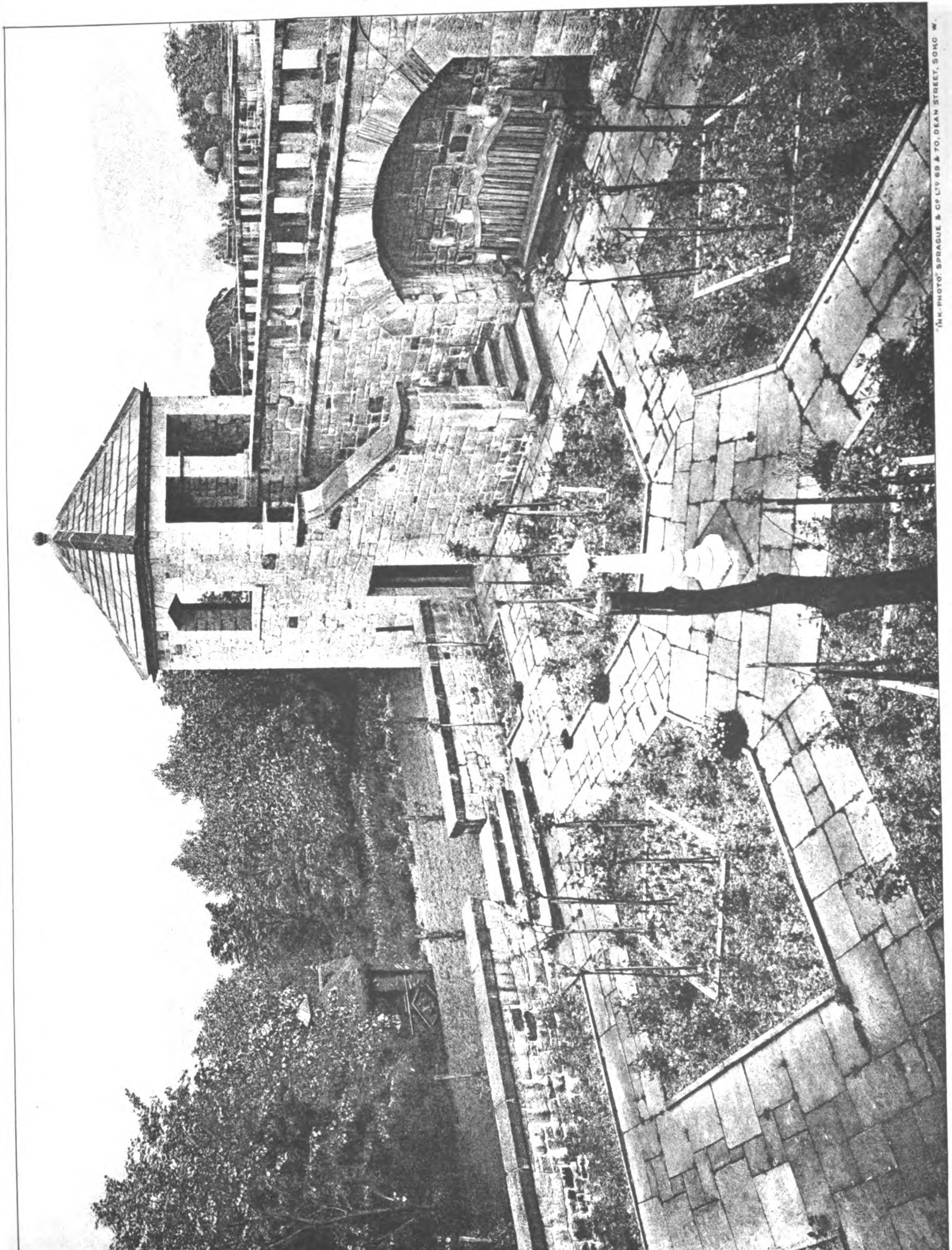

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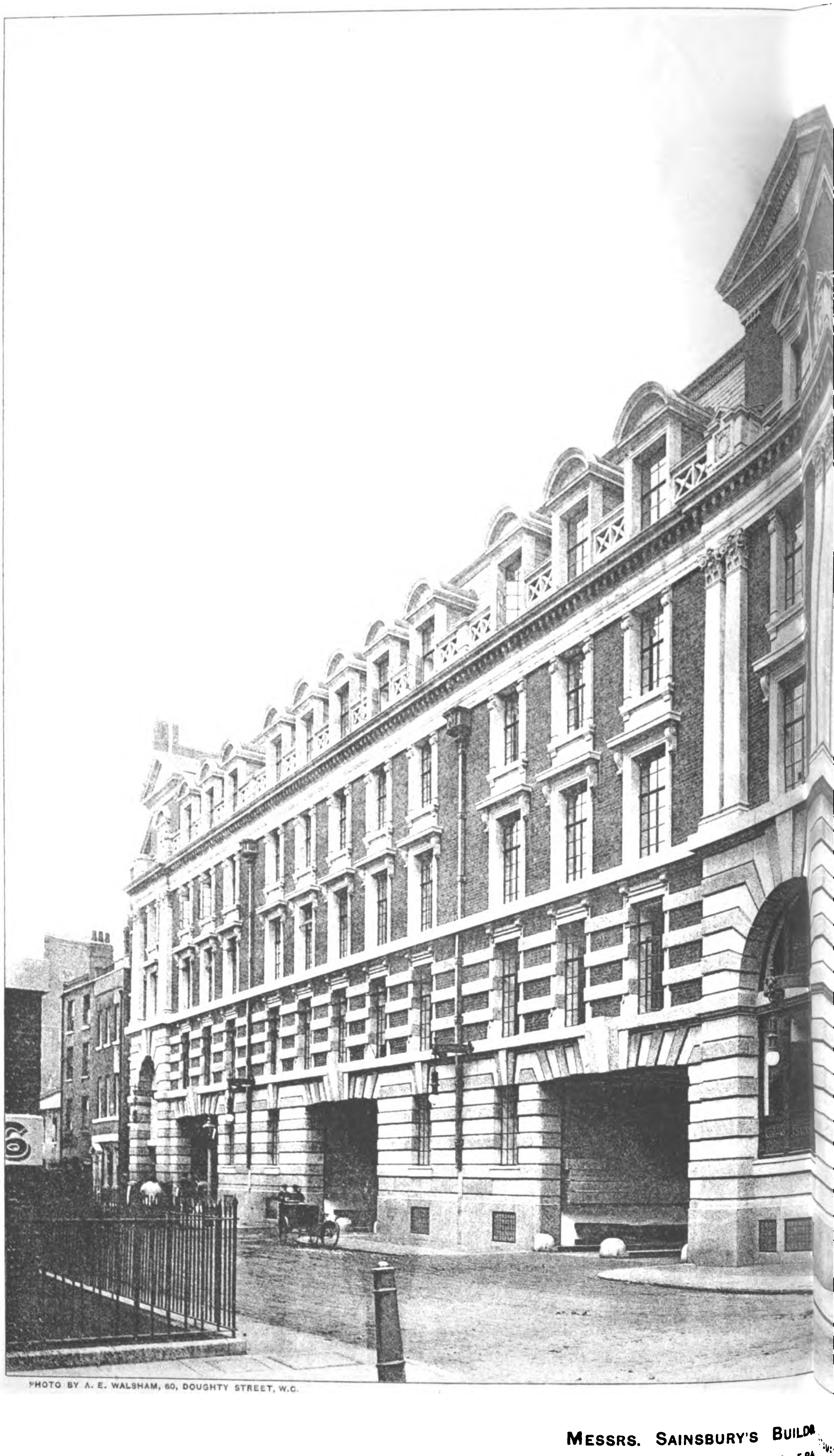

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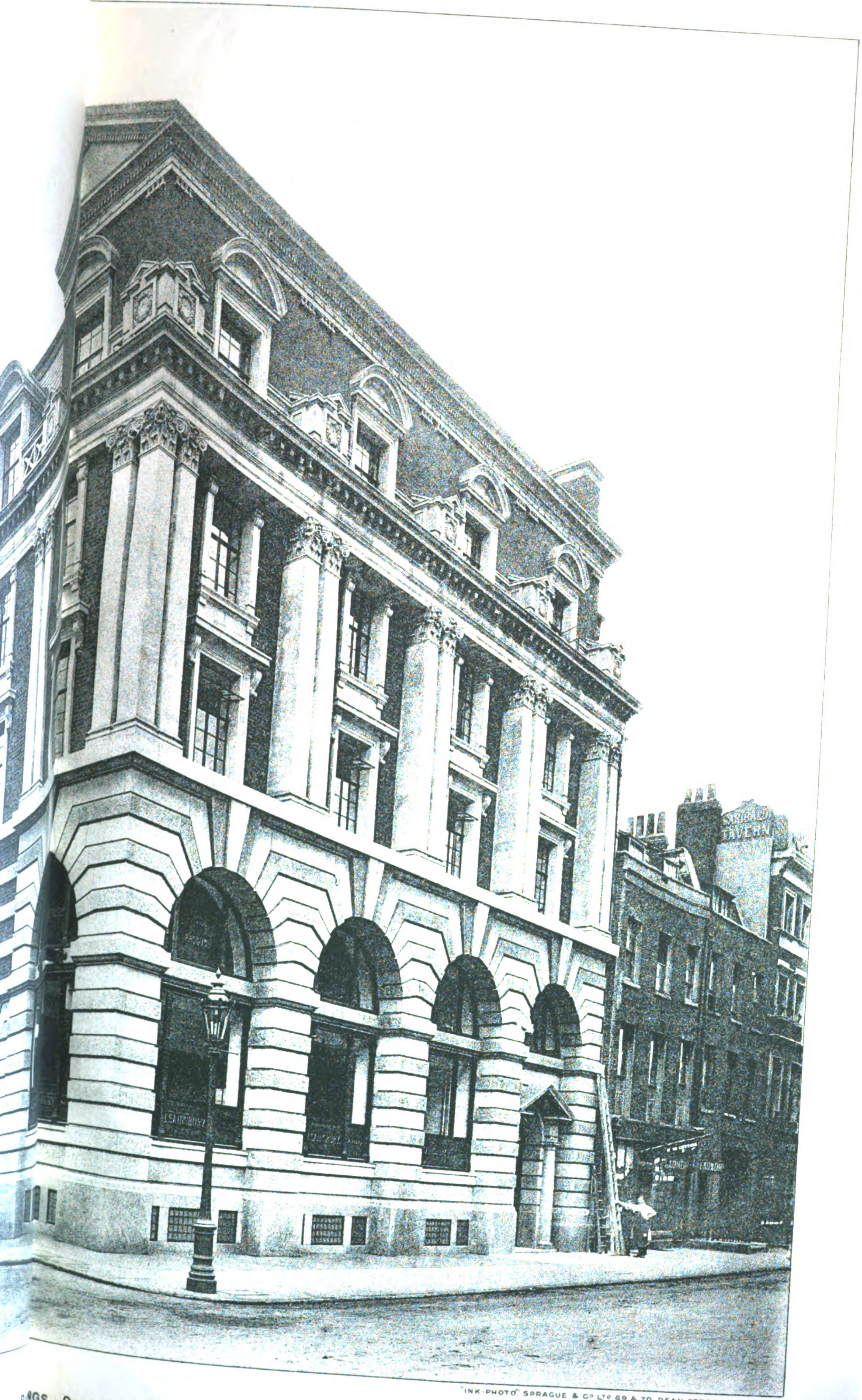
MR. F. SYKES, F.RA



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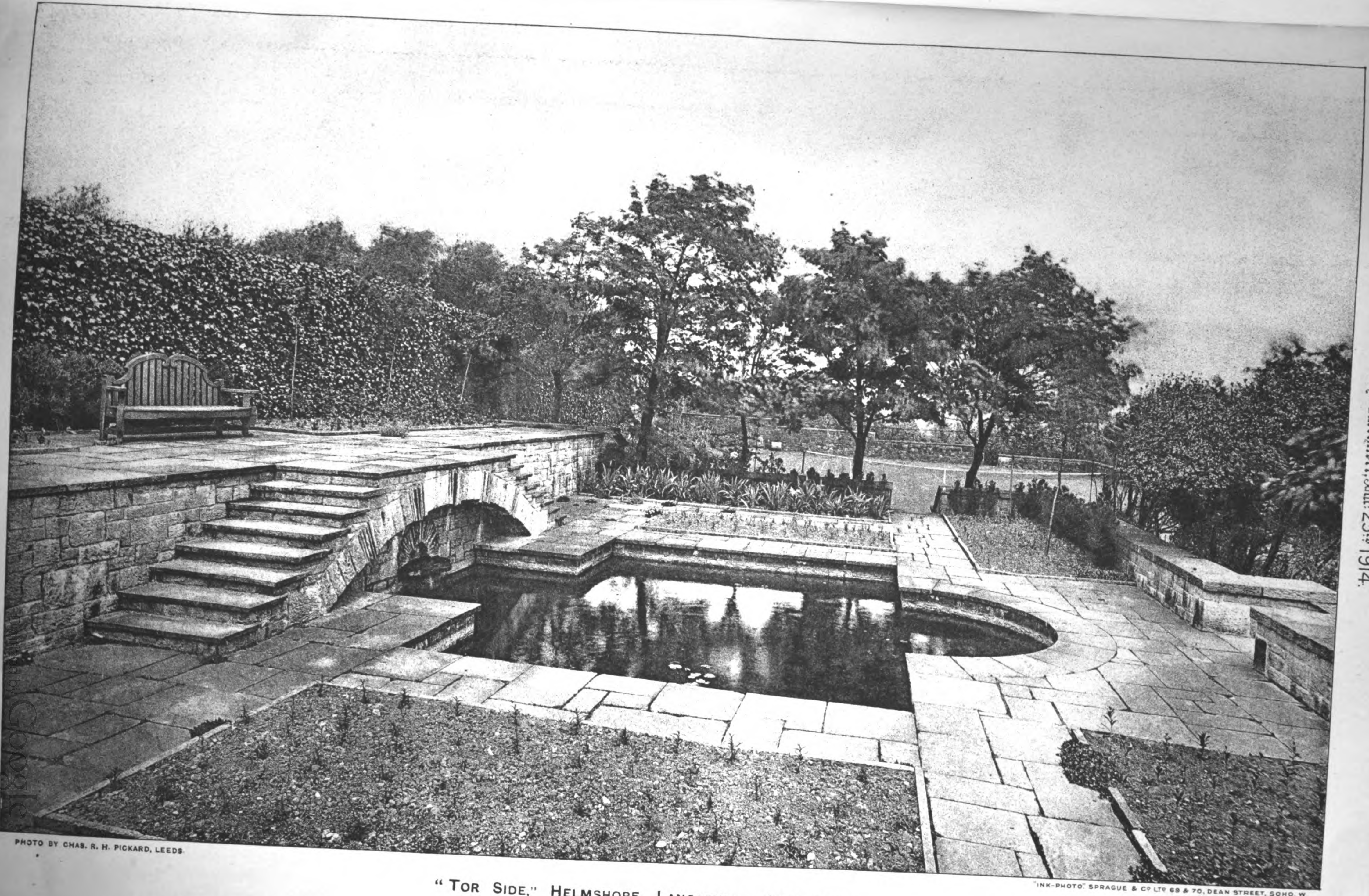

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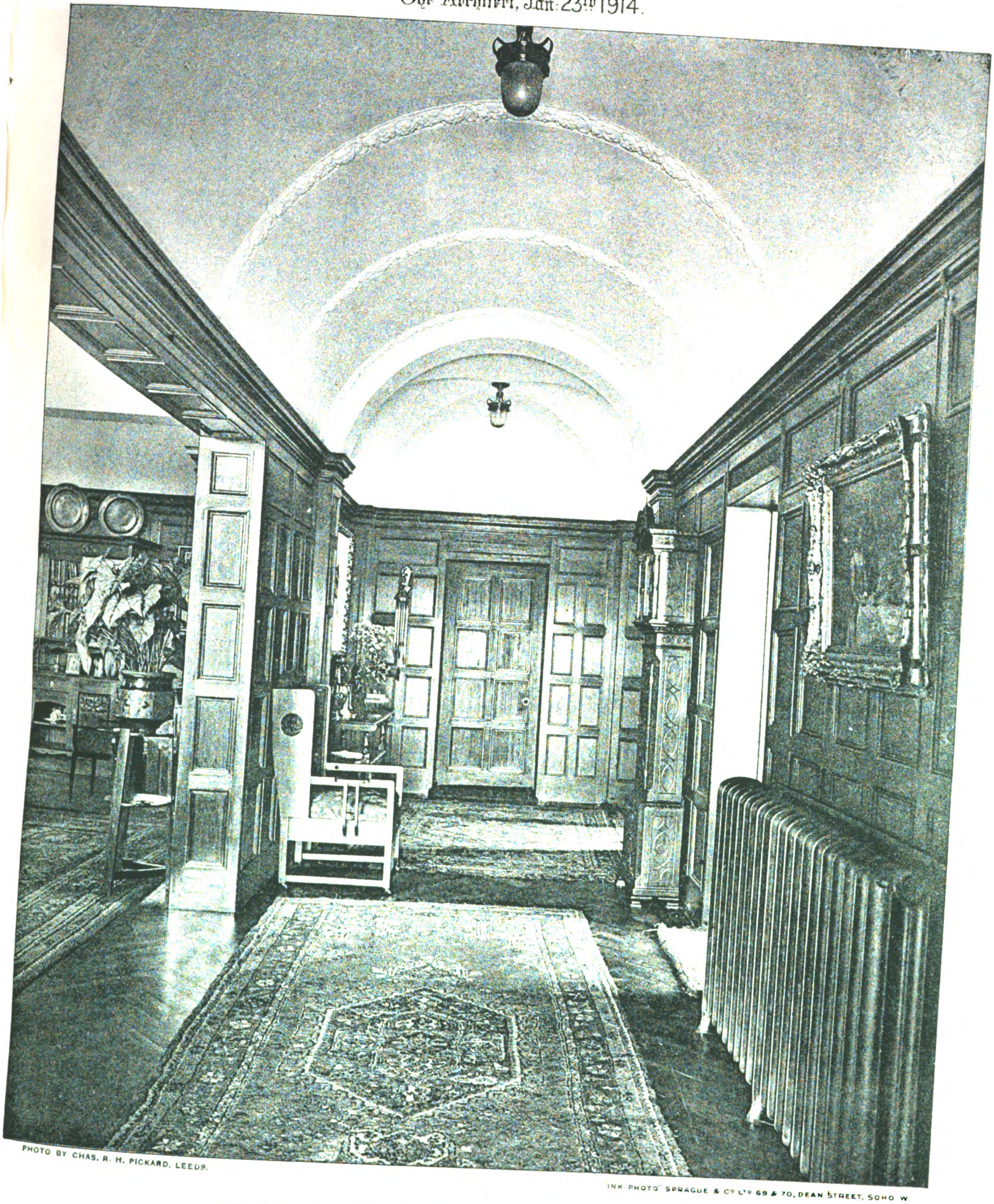

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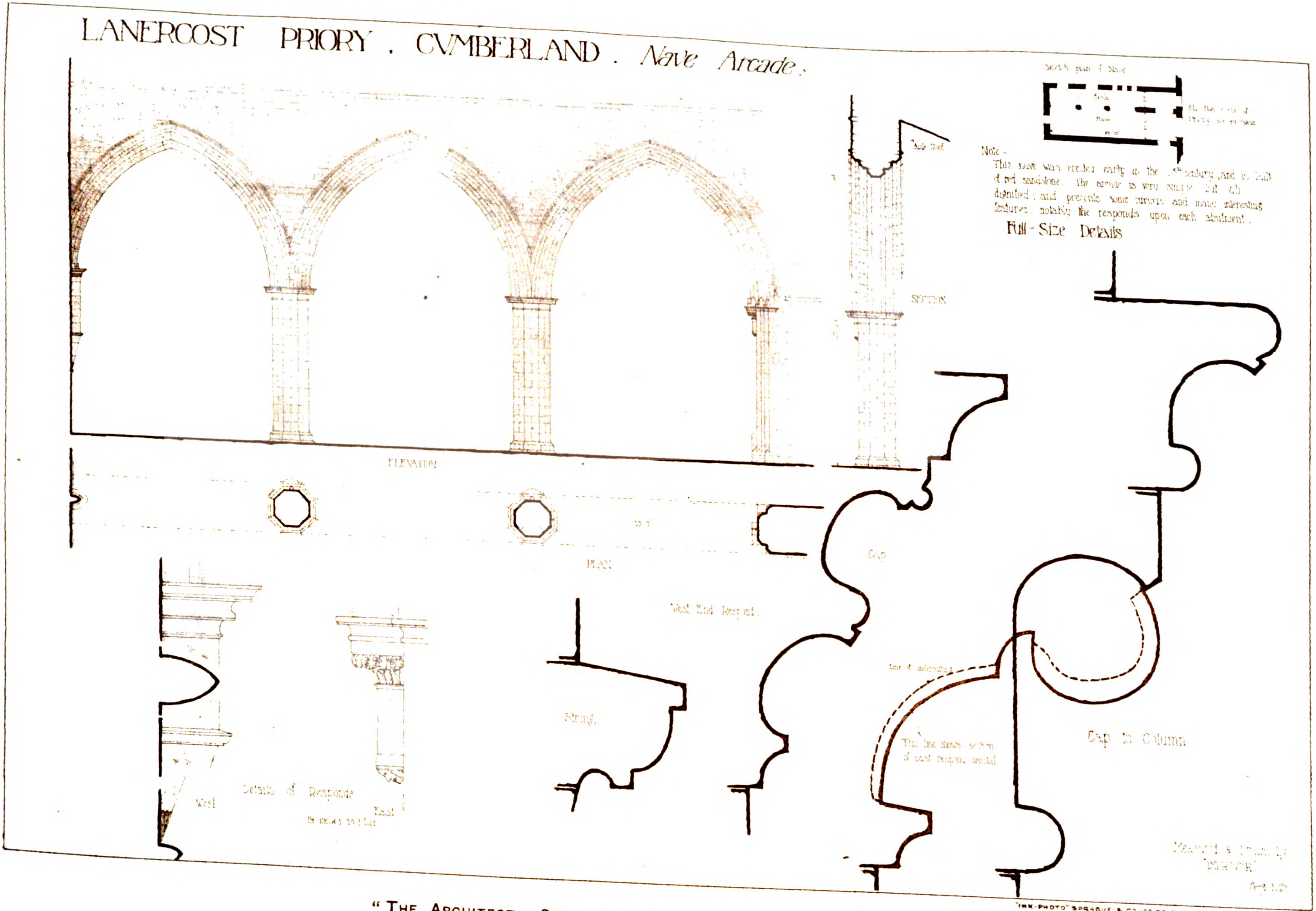
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Sketch plan of Nave
Aisle
Nave
All the rest of Priory are in ruins
Note -
This nave was erected early in the 13th century, and is built of red sandstone. The arcade is very simple but still dignified; and presents some curious and many interesting features, notably the responds upon each abutment.
Full - Size Details
Aisle Roof
SECTION
ELEVATION
PLAN
Cap
West End Respond
String
line of undercutting
This line shows section of east respond capital
Cap to Column
Details of Responds
West
East
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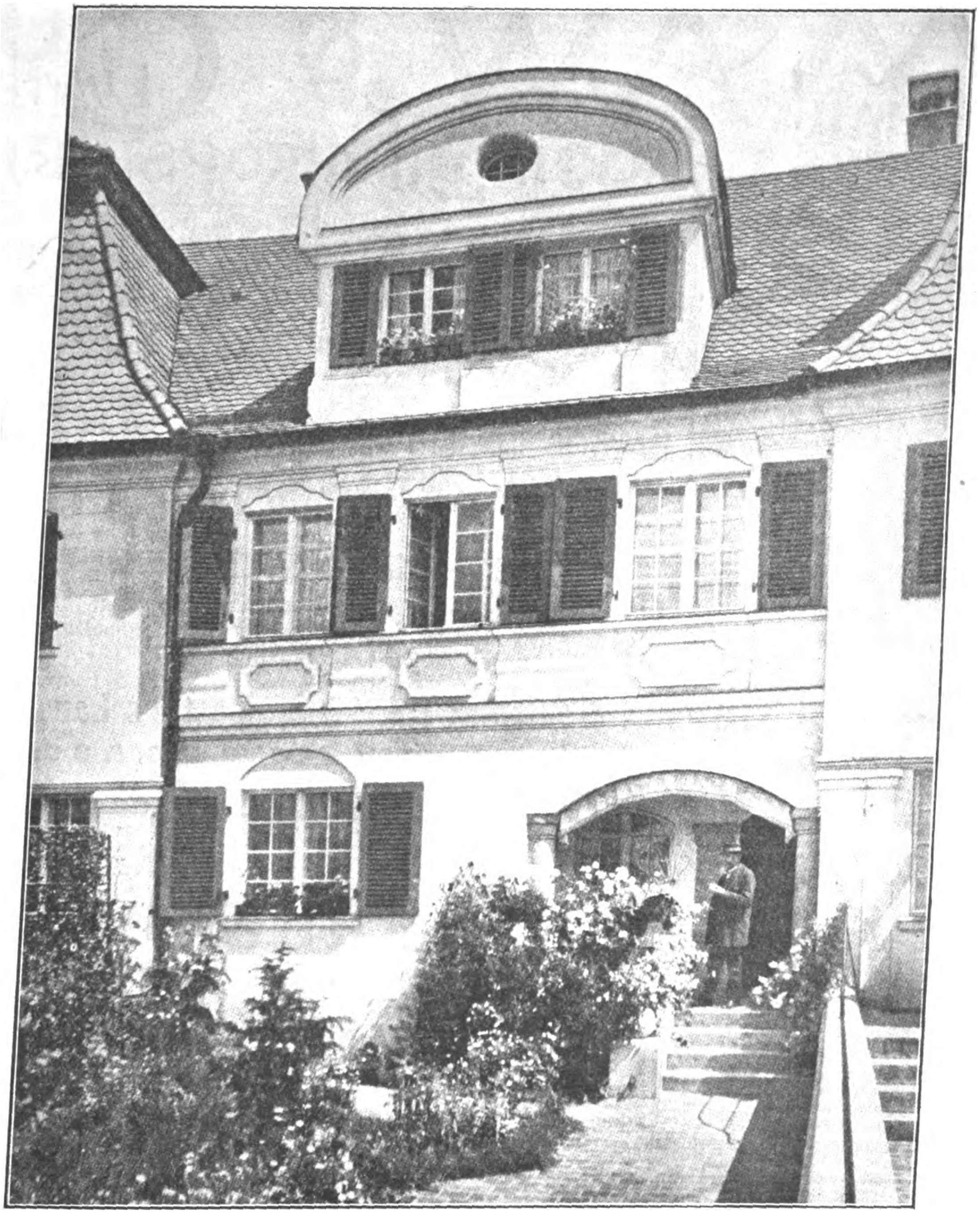


[From *Moderne Bauformen.*

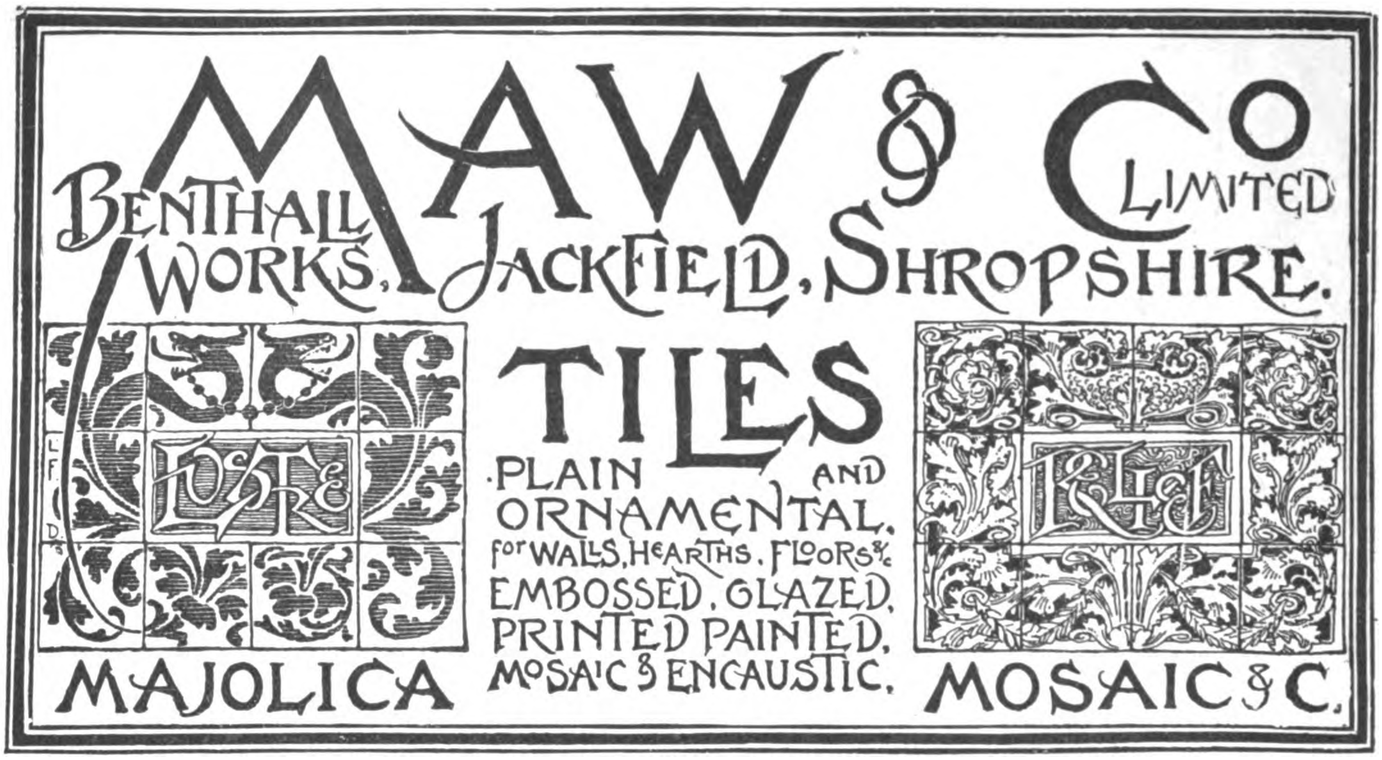
PRIVATE HOUSE IN THE CAPRIVI-STRASSE, NUREMBERG.—Professor LUDWIG RUFF, Architect.

be repairing, or upholding, or maintaining the house? To my mind it would not; it would be making an entirely new and different house. It might be just as costly to underpin as to pull the house down and rebuild it. No one says, as I judge from the evidence, that you could repair the house by putting in a new timber foundation. The only way, as the surveyor says, to repair it is by this underpinning. That would not be either repairing, or upholding, or maintaining such a house as this was when the lessee took it, and he is not liable under his covenant for damage which accrued from such a radical defect in the original structure. The appeal must be dismissed with costs.

In *Wright* v. *Lawson* (1903), 19 T. L. R., 203, the tenant of a house and shop under a lease dated 1888 covenanted "And will during the said term, when, where, and as often as occasion shall require, and to the satisfaction of the lessor, or her surveyor for the time being, substantially and effectually repair, uphold, maintain, drain, paint, whitewash, and cleanse the premises for the time being held under this demise."

On the first floor of the premises was a bay window. In 1900 the tenant was served with a notice on behalf of the London County Council, under the London Building Acts, to take down or otherwise secure the brickwork of the external walls and bay window, so far as cracked, bulged, loose, sunk, overhanging, out of upright, or otherwise defective; also to shore up the bay window and arch over the back door immediately. The tenant thereupon instructed his builder to comply with the notice, and the window was taken down; and it being impossible, owing to the house being old and badly built, to re-erect the window in the same way in which it was before without its being condemned as dangerous by the County Council, the defendant built a new window set back in the main wall of the house.

The landlord asked that the tenant might be ordered to restore the premises to the condition in which they were when the lease was granted by replacing the bay window. The evidence showed that practically a new bay window, such as would satisfy the requirements of the County Council, could only be erected by supporting it by two columns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from the ground to the window, or, at any rate, that supports of a substantial character would be required.

Mr. Justice Kekewich came to the conclusion that the tenant was not liable to replace the bay window, since it was impossible to do so consistently with the requirements of the London County Council. He did not think that erecting a new bay window supported by columns could be regarded as the repair of the old bay window. It would be erecting a new bay window of a totally different character, more permanent, better, and more satisfactory, and possessing those qualities because it was new. That appeared to bring the case precisely within the principle of *Lister* v. *Lane*. The tenant had been prevented by *vis major* in the shape of the London County Council from performing his covenant. There would be judgment for the tenant.

In *Torrens* v. *Walker* (1906), 2 Ch., 166, the first, second and third floors, with two rooms and partial use of the kitchen in the basement, and the yard, &c., of a dwelling-house were demised for eighteen years from 1890. The landlord covenanted to keep the outside of the premises in good and substantial repair. In 1905 the London County Council served on the premises a notice requiring the owner to take down the front and back walls of the house as being dangerous structures. The tenant communicated this notice to the landlord and required him to repair the walls. The landlord did nothing, and the London County Council themselves took down the walls from the first floor upwards, propped up the floors with timber, and left the place uninhabitable.

Warrington, J., said:—

I find as a fact on the evidence of the district surveyor that the building in question, which was about 200 years old, was absolutely worn out and had come to the end of its time. Its condition was not due to any neglect on the part of the lessor, but to the effect of time and the elements on the materials used. It was found on the survey that the front wall was beyond repair. Nothing could be done to make it safe without rebuilding. The bricks had come to such a state that they could not be used again, and the mortar was perished to such an extent that the whole of the wall above the first floor, *i.e.* the whole front wall of the demised premises, really consisted of nothing but a heap of dry bricks. The back wall, being of much smaller extent, was not in such a bad condition, parts of it might have been preserved; but I find as a fact that the whole of the back wall above the level of the second floor would have had to be rebuilt, and it is very probable that when the work was begun it would be found necessary to rebuild both walls lower down, even below the level on the first floor.

I find, therefore, as a fact, that on July 13, 1903, repairing the building, in the ordinary sense, was impossible. Nothing could be done but rebuild. It was not merely that rebuilding was the course which a prudent owner would have adopted as the best, but it was the only practicable course to make the building stand.

Having found these facts, the learned Judge gave judgment for the defendant on grounds which are thus summarised by Buckley, L.J., in *Lurcott* v. *Wakely*:—

The pulling down amounted to a demolition of substantially the whole subject-matter of the covenant. In these circumstances the finding of the learned Judge was justified that repairing the building, or as I prefer to say, repairing the subject-matter of the covenant, namely, the outside of the premises, was impossible, and that nothing could be done but rebuild. The learned Judge found in that case that the act to be done was not one of renewal or replacement of a subsidiary part, but substantially a rebuilding of the whole subject-matter of the covenant.

(J) *Liability of Tenant to rebuild in case of Partial Destruction.*

In *Lurcott* v. *Wakely* (1911), 1 K.B., 904, a lease of a house and workshop for twenty-eight years contained a covenant by the tenant to well and substantially repair and keep in thorough repair and good condition, and the premises being so repaired and kept to yield up at the end of the term. Shortly before the expiration of the lease the London County Council served a notice on the owner and occupiers requiring them to take down the front external wall of the house to the level of the ground floor as being a dangerous structure, and the landlord called upon the defendants (assignees of the tenant) to comply with this notice, which the defendants failed to do. After the end of the term the landlord, in compliance with a demolition order of a police magistrate, took down the wall to the level of the ground floor, and then, in compliance with a further notice of the London County Council under the London Building Act, 1894, took down the remainder of the wall and rebuilt it with concrete foundations and damp courses, in accordance with the Act, at a total cost of £256. The house was at least 200 years old. It had a frontage to Hatton Garden of 24 feet. The depth of the house and workshop together was 100 feet. The Official Referee found as facts that the condition of the wall was caused by old age and lapse of time, and that the wall could not have been repaired without rebuilding it. Referring to *Proudfoot* v. *Hart* and to the opinion expressed by Lord Esher that if a floor became rotten a tenant under a covenant to keep in tenantable repair was bound to put down a new floor, he was of opinion that what Lord Esher said as to the floor applied equally to a wall. He continued:—

In this case it is clear that the whole house does not require rebuilding; the wall can be rebuilt and has been rebuilt, and the old tie-plates and binders have been retained, and the case appears to me exactly like that of the new floor mentioned by Lord Esher. Could this wall have been patched or repaired? I find on the facts (although there is a difference of opinion as to that), from what was discovered afterwards, that it could not have been patched or repaired, and, therefore, it could only be rebuilt, and that the defendants were bound to rebuild it. They are liable for the cost of rebuilding it. As to the requirements of the London County Council for rebuilding the wall below the ground, in my opinion the defendants, as they were bound to rebuild the wall in accordance with the Building Acts, and to satisfy the requirements of the London County Council, are therefore liable for the whole of the £256.

The defendants appealed. The Divisional Court unanimously affirmed the decision of the Official Referee. The defendants again appealed. The Court of Appeal unanimously affirmed the decision of the Divisional Court.

(To be concluded.)

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A LIST OF WORKS PROJECTED OR COMMENCED.

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ENGLAND.

BUCKINGHAMSHIRE.

Bourne End.—Special Subjects Centre; also school extension.

CHESHIRE.

Ellesmere Port.—Council School (for 400 places), Heathfield Road.

CORNWALL.

Kilkhampton.—Wesleyan Chapel (for 100 places). £900.

Redruth.—St. Andrew's Church: completion (£4,000).

St. Buryan.—Wesleyan minister's house (£700).

CUMBERLAND.

Carlisle.—Billiards Hall, Botchergate, for Mr. J. Dobson.

Oughterside.—Proposed Public Hall.

DERBYSHIRE.

Beighton.—Council School for 300 places. Mr. G. H. Widdows, A.R.I.B.A., architect, County Education Office, St. Mary's Gate, Derby.

Chinley.—Conservative Club, Tower Lane.

Clowne.—Parish Church: enlargement.

Derby.—Council School, Nightingale Road.

DURHAM.

Blackhill.—R.C. Day School.

Consett.—Twenty-four houses, Crookhall, for Messrs. Murray & Chapman.

Harraton.—Public House, for Mr. J. Todd.

South Shields.—School of Cookery, Coronation Street, for the Shipping Federation.

ESSEX.

Billericay.—Workhouse: alterations. Mr. H. R. Bird, architect, St. Thomas' Gate, Brentwood.

Shoebury.—Proposed working-class cottages.

Southend-on-Sea.—Special Instruction Centre, Macdonald Avenue. Mr. P. Brockbank, architect, County Chambers, Weston Road.

West Thurrock.—Fourteen pairs of houses (£5,700). Mr. F. J. Winter, architect, 2 Heygate Avenue, Southend-on-Sea.

Woodford.—Fire Station (£850).

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HAMPSHIRE.

Bournemouth.—New Council Schools and alterations to existing schools, Malmesbury Park (£5,700).

Southampton.—Holy Trinity Church: proposed new building.

HEREFORDSHIRE.

Bromyard.—Grammar School: enlargement and alterations (£1,000).

Hereford.—Eighteen cottages for widows, Bewell Street, for the Town Council (per a Housing Company).

HERTFORDSHIRE.

Barnet.—Girls' Grammar School: additions. Mr. J. Ladds, architect, 93 Pemberton Road, Harringay, London, N.

KENT.

Broadstairs.—Holy Trinity Church: proposed enlargement (£3,500).

Gillingham.—P.M. Church and School (£4,600).

Margate.—Infantry Drill Hall: additions and alterations. Mr. S. H. Page, F.S.I., architect, 6 Queen Street, Ramsgate. Messrs. Elliott & Co., contractors, 144 Northdown Road, Margate.

LANCASHIRE.

Bolton.—Billiards Hall, Shepherd Cross Street, for Messrs. Okell & Siddell.

Brierfield.—Houses, Castle Street. Mr. T. Leaver, builder, Halifax Road.

Villas, Mayville Road, for Messrs. J. & J. F. Boothman.

Burnley.—Mount Olivet Baptist Church: extensions and alterations.

LINCOLNSHIRE.

Bourne.—Six workmen's dwellings (£950).

Brigg.—Workhouse: Infirmary.

Gainsborough.—Wesleyan Mission Church (£3,000).

MIDDLESEX.

Ealing.—Proposed P.H., corner of Midhurst Road and Woodstock Avenue, for the Royal Brewery (Brentford), Ltd.

Proposed P.H., corner of Midhurst and Salisbury Roads, for the Isleworth Brewery, Ltd.

Proposed P.H., corner of Pitshanger and Harrow View Roads, for the Griffin Brewery, Chiswick.

MONMOUTHSHIRE.

Abertysswg.—Council School for 250 places.

Pengam.—Shops, offices, &c. Mr. W. B. Rees, architect, 3 Dumfries Place, Cardiff.

Tredegar.—Council School, Sirhowy (£8,300).

NORFOLK.

Great Yarmouth.—Isolation hospital: addition (£750).

NORTHAMPTONSHIRE.

Brackley.—Council School for 188 places.

NORTHUMBERLAND.

Alnwick.—Cottage Homes for workhouse children, Waggon Way.

Byker.—Proposed Junior Day Technical School, Shields Road.

NOTTINGHAMSHIRE.

Nottingham.—All Saints' Sunday School and Parish Hall, Radford (£3,000).

Sutton-in-Ashfield.—Post Office, Brook Street. Council surveyor.

OXFORDSHIRE.

Henley-on-Thames.—Isolation Hospital. Council surveyor.

STAFFORDSHIRE.

Uttoxeter.—House, Eaton Street, for Mr. H. Smith.

Walsall.—Tuberculosis Dispensary. Mr. J. T. Taylor, Council surveyor.

SUSSEX.

Brighton.—Council School, Coombe Road: enlargement (£6,750).

East Preston.—Workhouse: additions (£1,900). Mr. Potter, architect.

Horsham.—Council School, Oxford Road.

High School for Girls.

Littlehampton.—Council Schools, East Street: extensions.

WARWICKSHIRE.

Bilton.—Cemetery: chapel and mortuary. Mr. H. B. Creswell, F.R.I.B.A., architect, 10 Elbrow Street, Rugby.

WORCESTERSHIRE.

Evesham.—No. 31 High Street: re-construction. Messrs. Dicks & Waldron, architects, 1 Market Place.

Worcester.—Council Schools, Stanley Road (for 760 places) £10,000. Mr. A. G. Parker, City architect.

YORKSHIRE.

Ardsley.—Picture Theatre, Bransley Road, for Mr. A. Firth.

Bradford.—Elementary School, Grange Road. Mr. W. Williamson, City architect; also

Secondary School, Bolling Hall site.

Picture House, junction of Waterside and Thornton Roads, Girlington. Mr. W. E. Bickers, architect, 1 Bank Street.

Horbury.—Crossfield House: additions and alterations. Mr. Kendall, architect.

Knaresborough.—Guardians' Offices (£1,100). Mr. J. Houfe, architect, Albert Chambers, Harrogate.

Normanby.—Council School: additions and alterations.

Rossington.—U.M. Chapel.

Sheffield.—Residence: alterations for Rt. Rev. the Bishop. Mr. W. D. Caröe, F.R.I.B.A., architect, 3 Great College Street, Westminster, London.

Tuberculosis Sanatorium for 100 women, Rivelin Valley.

Thirsk.—Isolation hospital: extension (£1,000).

Wakefield.—Working-class houses, Alverthorpe.

WALES.

Ammanford.—"Cross Inn" Hotel: alterations and extensions. Mr. D. Thomas, architect, 10 Quay Street.

Cardiff.—Workhouse, Ely: addition. Mr. E. Seward, F.R.I.B.A., architect, Queen's Chambers, Cardiff.

Conway.—Homes, Llandudno Junction, for the Board of Guardians.

Prestatyn.—Post Office, High Street, for H.M. Office of Works.

SCOTLAND.

Bathgate.—Power Station, Mill Road, for the Scottish Midland Electric Supply Co., Ltd.

Coatbridge.—Tuberculosis Hospital, Coathill (for 24 beds). £2,100.

Double villa, Drumpellier Street (£1,000). Messrs. Bryson & Mills, builders.

Duffus.—Board School, Easter Unthank.

Dunfermline.—Six hundred houses, Rosyth, for H.M. Admiralty.

Dysart.—Board School: alterations (£1,700).

Edinburgh.—No. 6 Jeffrey Street and Nos. 5-9 Cranston Street: alterations for Mr. J. Gardiner.

No. 81 Dalkeith Road: additions and alterations for Mr. T. A. Nelson and another.

Guthrie Street: re-construction of premises, for the Naval and Military Institute. Mr. A. Currie, contractor, Newington Joinery Works.

Galashiels.—Burgh buildings: additions and alterations.

Glasgow.—Training College, Victoria Crescent: additions.

No. 53 Bothwell Street: extensions for the N.B. Steel Diesel Engine Works, Ltd.

Inverness.—Public washhouse and swimming baths, the Maggot Lands. Burgh surveyor.

Johnstone.—Proposed infants' school, Floors Street (£2,500).

Musselburgh.—Grammar School: proposed extension (£2,750).

Raasay.—Thirty-six workmen's houses, for Messrs. W. Baird & Co., Ltd. Mr. J. G. Falconer, architect, 4 Cameron Square, Fort William.

Troon.—Portland Golf Clubhouse, Crosbie Road (£1,000).

IRELAND

Dublin.—Working-class lodging-houses, Blackhall Street and Inchicore (£25,200).

BRITISH PATENT SPECIFICATIONS.

Selected by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

The first date given is the date of application; the second, at the end, the date of the advertisement of the acceptance of the completed specification.

No. 12,781. June 2, 1913.—Bricks and the like. Thomas Priestnall, 2636 North Lawrence Street, Philadelphia, U.S.A. This invention relates to improvements in bricks or artificial building blocks having therein an aperture or passage which, when the bricks or blocks are laid, will register and form a drain passage or spout through the wall for carrying off the water from a gutter. The object is to provide a brick or block which may be readily laid and interlocked with the other courses of bricks or blocks forming the wall. Fig. 1 is a perspective view of a portion of the wall, including the drainage bricks. Fig. 2 is a detail perspective of

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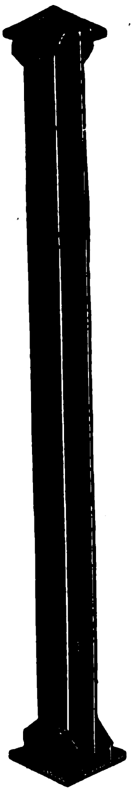

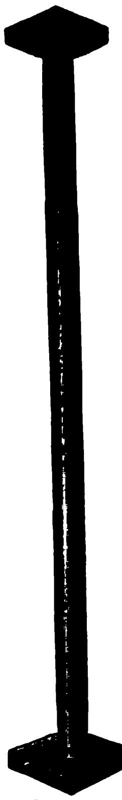

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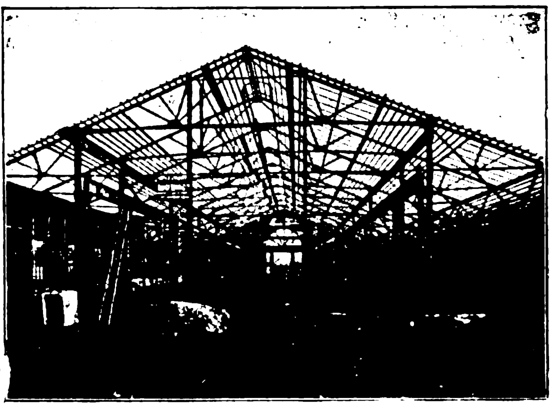

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one of the bricks. Fig. 4 is a detail perspective of a slightly modified form of the brick. A main body portion, 1, has an offset, 2, formed on the outer edge. One end of the brick is extended for a distance equal to half the length, as shown at 3, thus making the entire length of the brick equal to the length of an ordinary brick and a half. Formed in the offset portion is a vertical aperture, 4. The offset portion, 2, is of semicircular shape, while the aperture is circular. In fig. 4 is shown a slightly different form of brick, having a body portion, 5, provided with a rectangular offset, 6, in which is formed a rectangular drain aperture, 7. The body, 5, of this last form of brick is extended on one end, as at 8, in the same manner as the brick 1. The inner walls of the apertures through the bricks are glazed or coated in any suitable manner, to provide a waterproof or non-porous wall. When laid one above the other in courses the apertures therein will be brought into alignment, and will thus form a continuous drain passage for carrying off the water caught by the gutter. Dec. 17, 1913.

FIG_1

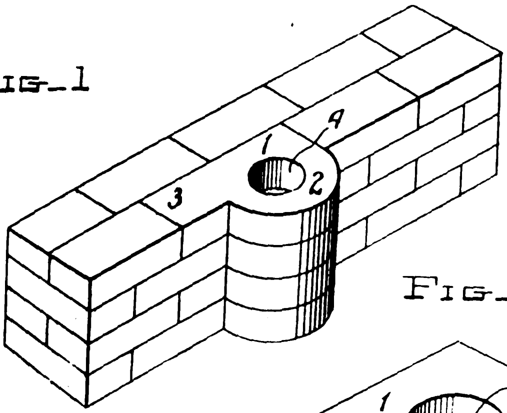


FIG_2

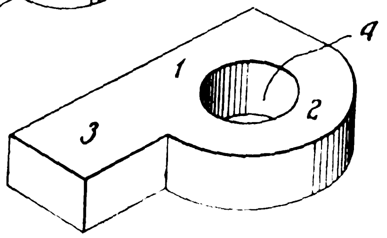
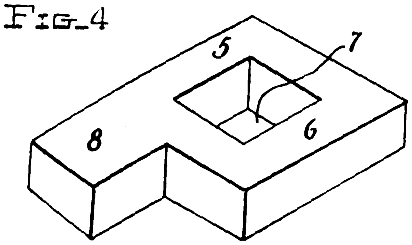


FIG_4



PATENT SPECIFICATIONS PUBLISHED JANUARY 15, 1914.

Selected and abridged by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

No. 26,897. Nov. 22, 1912.—Dated under International Convention Dec. 20, 1911. Maria Muller, Schwabisch Gmund, Wurtemberg. Wall plates.

29,382. Dec. 20, 1912.—Dated under International Convention May 4, 1912. Firm Vereinigte Chemische Fabriken, Landau, Kreidl, Heller & Co., 5-7 Sebastian Kohlgasse, Vienna XXI. Manufacture of white enamel, glass, and the like.

29,492. Dec. 21, 1912.—W. A. Fraser, Georgetown, Halton, Ontario. Flushing cisterns.

30,036. Dec. 31, 1912.—H. F. Andrew, 49 The Limes Avenue, New Southgate. Locking device for lift gates.

104. Jan. 2, 1913.—A. W. & Eddie Borlase, Stenalees, St. Austell, Cornwall. Air-drying apparatus for clay.

2,074. Jan. 25, 1913.—Robert Evans, 2 Race Street, Sandyford Road, Newcastle-on-Tyne. Box for preserving clay for modelling.

2,678. Feb. 1, 1913.—Harley Escreet, 1 Rose Street, Germiston West, near Johannesburg. Pipe connections, couplings, and the like.

5,069. Feb. 28, 1913.—Edgar Allen & Co., Ltd., Imperial Steel Works, Sheffield; Henry Grey, 54 Oxford Street, Rotherham; and L. D. Parker, 21 Harbord Road, Woodseats, Sheffield. Mills for grinding, crushing, pulverising, separating, or mixing materials.

8,765. April 14, 1913.—James McKenzie, 5 Laverockbank Avenue, Newhaven, Leith. Enclosing structures or housings for dustbins, refuse receptacles, and the like.

9,928. April 28, 1913.—S. R. Barrett, 21 Valentine Road, King's Heath, and H. J. Yates, Essex Works, Thimble Mill Lane, Aston, Birmingham. Gas fires.

12,224. May 26, 1913.—Dated under International Convention Sept. 24, 1912. F. J. Storey, Fitzroy Street, Sale, Victoria. Taps, cocks, and the like.

13,997. June 17, 1913.—L. J. Fox, 241 Sixth Street, San Francisco, California. Combined rule and trisquare.

14,114. June 18, 1913.—J. A. Wheeler, c/o J. R. Littel, Woolworth Building, 233 Broadway, New York. Fireproof doors.

18,256. Aug. 11, 1913.—Ferdinand Putz, 31 Rothenditmolderstr, Kassel, Germany. Device for measuring distances and angles.

18,549. Aug. 15, 1913.—Samuel Saunders, 43 Lower Moseley Street, Manchester. Air valves for heat radiators and such like.

Any of the above specifications may be obtained from J. D. Roots & Co.

Correspondence

[The Editor will not be responsible for the opinions expressed by Correspondents.]

The Dangerous Kitchen Mantel.

Sir,—In returning, recently, a verdict of accidental death in the case of a cook who had died from burns, the jury added a rider that all cooks should be provided with, and wear, uninflammable aprons. To such an admirable precaution may I suggest another? One potential, and not infrequently an actual, factor in these distressing accidents is the high kitchener mantel-shelf, upon which (may be) are kept some cooking utensils. To reach these things, in a hurry probably, the cook must necessarily lean over the fire in a position so dangerous as seemingly to court disaster. The risk is undoubtedly always present; to do away with it is simple—*remove the shelf.*—Yours faithfully,

Prevention.

Trusts and Boycotts.

Sir,—On December 4 the Castings Trust took steps to cut off, through their 150 odd members, the whole of our supplies, the reason being that we refused to become a Trust-tied house selling at Trust-tied prices. Having organised the one boycott, they then endeavoured to create a further boycott with another allied combine.

Both of these steps have left us unmoved—in fact, they have considerably increased our turnover by reason of the inherent dislike of the British public to anything in the nature of American Trust methods.

Since the above it has come to our knowledge that certain members of the Castings Trust are informing builders that it is useless to send orders to ourselves, as we cannot supply the goods. This is a gross libel, as not only can we supply, but we can do so at anti-Trust prices also.

Might we take this opportunity of asking any member of the building trade to whom such a statement as the above has been made to immediately communicate with us?—Yours truly,

Rownson, Drew & Clydesdale, Ltd.

Upper Thames Street, E.C.

THE SURVEYORS' INSTITUTION.

Mr. George Corderoy, the newly elected member of Council, will read a paper on "Measuring and Quantity Surveying" at the Surveyors' Institution at 8 p.m. on Monday, Jan. 26. The programme arranged for the remainder of the session is expected to include the following papers: "Notes on Value as applied to Real Estate," by Mr. F. W. Hunt, Fellow; "Comments on the Land Inquiry Committee Report (Rural)," by Mr. Christopher Turner; "Comments on the Land Inquiry Committee Report (Urban)," by Mr. J. Dawbarn Young, Barrister-at-Law, Associate; "London before the Fire, as referred to in Sixteenth and Seventeenth Century Literature," by Mr. W. W. Jenkinson, Fellow; and "The Sanitation of Country Houses," by Mr. Cyril Herbert Smith, Fellow.

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THE ARCHITECT

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FORTHCOMING EVENTS.

Friday, January 30.

Royal Academy : Lectures on Architecture (2) "The Roman and Byzantine Contributions to Mediæval Art," by Professor Edward S. Prior, F.S.A., at 4 P.M.

Leicester and Leicestershire Society of Architects : Paper entitled "The Planning of Hunting Stables," by Mr. H. W. Johnson, F.R.I.B.A., at 8 P.M.

Monday, February 2.

Architectural Association : Paper by Professor W. R. Lethaby, F.R.I.B.A., at 8 P.M.

Royal Academy : Lectures on Architecture (3) "The Constitutional Development in Mediæval Architecture," by Professor Edward S. Prior, F.S.A., at 4 P.M.

Tuesday, February 3.

Garden Cities and Town-Planning Association : Paper entitled "German Town Plans and Housing," by Mr. Charles C. Reade, at 8.30 P.M.

Nottingham and Derby Architectural Society : Paper entitled "A Short Architectural Tour to the United States and Canada," by Mr. A. N. Bromley, F.R.I.B.A., at 8 P.M.

Wednesday, February 4.

Royal Archæological Institute : Paper entitled "The Divinity School at Oxford and its Vaulted Ceiling," by Mr. W. H. St. John Hope, L.H.D., D.C.L., at 4.30 P.M.

Institute of Sanitary Engineers : Annual Dinner at the Holborn Restaurant, at 7 P.M.

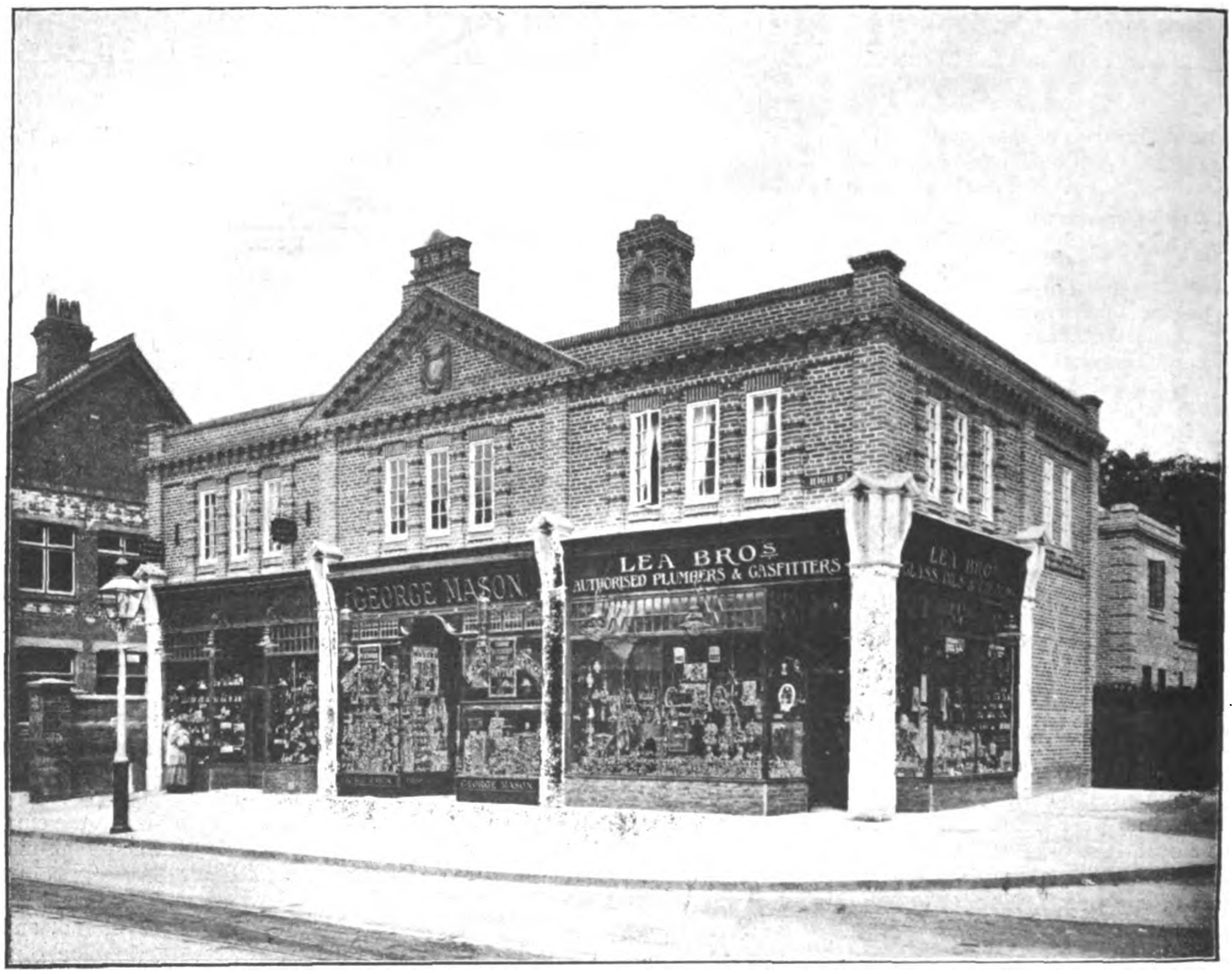
STUDENTS' DRAWINGS AT THE ROYAL INSTITUTE.

It is a springtide in the quality of the drawings submitted this year for the annual prize competitions of the Royal Institute, and although there may have been no great hesitation on the part of the judges in awarding most of the prizes, it must be admitted that the quality of the work submitted by unsuccessful competitors has this year reached a high standard. The improvement in the facilities for architectural education which has been effected during the last quarter of a century is bearing fruit, and both in design and draughtsmanship a marked advance is seen in the general level of attainment in the work offered for the principal prizes—the Soane and the Tite. Perhaps, as regards the winners, it would not be fair to the ancients to assert any superiority of the present over the past. Many excellent designs, admirably drawn, carried off the palm during the latter half of the nineteenth century, and comparison between them and the prize-winners of to-day would indicate change of method rather than of level of attainment. In both the Soane and the Tite the subjects set for this year have favoured the introduction of essential modernisms in architectural design, monumental conception, lay-out, and Beaux-Arts draughtsmanship.

Taking first the competition for the Soane Medallion and Travelling Studentship of £100, which has been won by Mr. Cyril A. Farey, the magnitude of the subject, an Official Country Residence for a Royal Personage in the United Kingdom, has prevented such a full exposition of the schemes of the competitors as to elucidate all the many complex points that naturally arise in such a problem. For instance, in Mr. Farey's design we are left to guess how the picture-gallery is lighted, or if it is lighted at all except artificially. Any criticism of the designs must therefore omit many minor points of detail and must be restricted to a broad and general view. Mr. Farey has conceived his Royal residence to be situated in Scotland, on a high plateau or cliff-top overlooking the river that formed an element in the suggested site. The principal axis runs north and south, parallel to the river, and on this axis the State apartments surround a fountain court at the southern end, followed by the residential rooms around an entrance court, beyond which are the servants' quarters and the stables, completing a semicircular end around the stable-yard containing the dog-kennels. Thus the side elevation towards the river shows a series of blocks of lessening importance and height, gradually diminishing from the State apartments to the dog-kennels, Gothic rather than Classic in disposition. The blending of Gothic and Classic is seen also in the employment of external features, circular towers, high-pitched roofs, corbellings and machicolations being combined with Renaissance doors and windows. This combination it is that locates Mr. Farey's palace in Scotland, and its use is quite a logical device for the expression of local colour. From the south end of the buildings, the lay-out consists of fountain pond and gardens with flanking pergolas and summer-houses, and on one side an orangery; beyond this tennis courts and an avenue lead into the distance. Mr. Farey's drawings are all fully coloured, and the interior treatment and coloured decoration are shown in the sections. There can be no question that Mr. Farey has fairly won the Soane Medallion.

The design placed second and awarded a certificate of merit and prize of ten guineas is by Mr. H. Chalton Bradshaw, the first British Rome scholar in architecture, and has a more compact and symmetrical plan, a central block having a stately entrance hall in the centre with corridors around and the State apartments beyond. Wings extend from the angles of the main block on one side, each with a circular court in the middle. On the other side of the main block are detached buildings for the stables and for a complete private residence. The main idea is thus inferior to that of Mr. Farey. The Royal residence as conceived by Mr. Bradshaw savours of an Italian palazzo without local significance. Details are shown in a Beaux-Arts "composition," and the perspective is a clever nocturne in blue and silver. A design by Mr. Thomas Chalkley and that by Mr. Gordon S. Keesing have been awarded certificates of honourable mention, and are alike reminiscent of the eighteenth-century planning of such houses as Blenheim and Kedleston. Mr. Chalkley's design shows a calm and cold treatment of Renaissance, whilst Mr. Keesing's makes use of a more ornate version of Italian with a colonnade front surmounted by a high attic. Of the remaining designs it may be said that they are up to a fair average in ability.

The Tite Prize has been won by Mr. Trenwith Wills for the best Imaginative Composition in Perspective in the Italian Style for an Important Fountain. In such a subject the treatment of the water is as necessary of consideration as that of the architecture. Mr. Wills surpasses his fellow-competitors in his water treatment,



SHOPS, KING'S HEATH, BIRMINGHAM.—Messrs. Ingall, Bridgwater & Porter, Architects.

which comprises jets that promise not to wet the onlookers, water flowing over a series of steps, and a good cascade. The architectural portion of the composition forms a background and starting-place for the water treatment and consists of a colonnade with a central block enclosing a jet fountain. Mr. Arthur G. Shoosmith obtains a certificate of honourable mention and ten guineas for a design that has a background of colonnade with wings, but his water treatment is too full of turmoil from plethora of cascades and jets. The remaining designs all possess good quality, though they may not be equal to those rewarded. "Merry and Bright" appears to be a humorist, which perhaps is why he arranges his jets so that the onlookers would get occasional showers. "Fountain of Life" has a hill-cascade before his actual fountain is reached. "Cascade" rather overdoes the winged figures in his sculpture scheme.

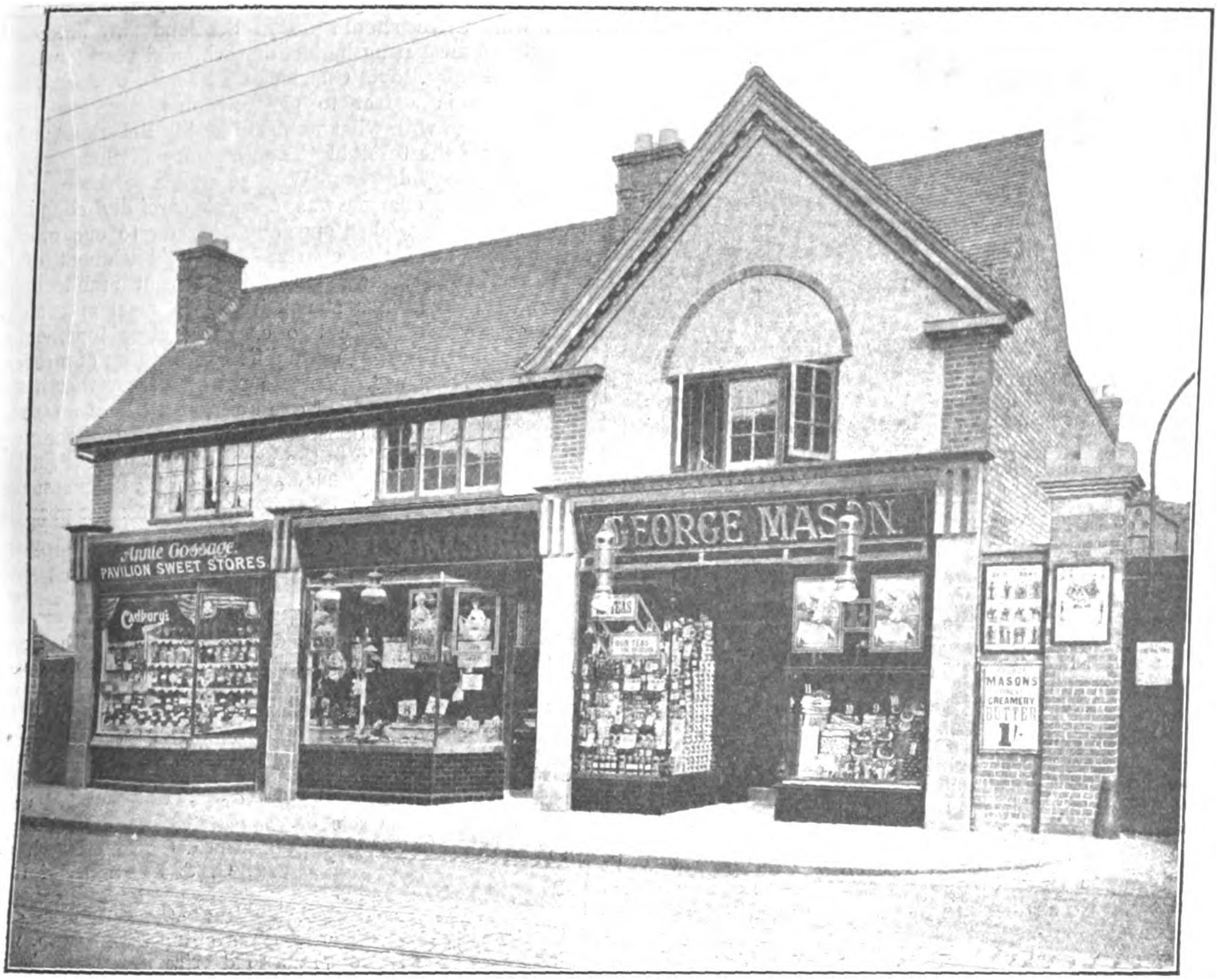
The competition for the Pugin Studentship is as usual nowadays very hot, and every one of the competitors may be rightly judged worthy of the silver medal and forty pounds. Mr. W. C. Young, the winner, is an exponent of the fine line, but not too fine, and there is a good "quality" about his line which probably went far to gain him his position. His four strainers contain but few perspective sketches and much measured work, including a thorough study of the gateway to the Priory of the Carmelites, Burnham Market, Norfolk, and the tower to the church of St. Mary Magdalene, Gedney, Lincolnshire. As is necessary nowadays, Mr. Young includes some examples of colour work. Mr. Julian R. Leathart has had yet one more shot, and we condole with him in his disappointment at obtaining only honourable mention for a set of drawings that run the winner very close. Perhaps the south elevation of the south transept of Ely Cathedral is hardly as much worth measuring as some of Mr. Young's examples. Mr. Gordon Hemm is an exponent of the thick line, which, though traditionally the right thing for Gothic, suffers by comparison with such drawing as that by Mr. Young. The wriggly line, especially with the brown ink and wash, savours too much of affectation and clap-trap. Mr. G. E. Charlewood shows some nice water-colour work, but although it is clear that he can draw, some of his pencil work bears too much resemblance to the specimens produced in young ladies' seminaries. Mr. H. Hamlyn also fails in his pencil work, which is inclined to be woolly.

Mr. James Bennett, in winning the Measured Drawings Prize with his good and complete series of drawings of Bramante's Tempietto at S. Pietro in Montorio, has but one serious competitor in the painstaking set by "Pax" of Fountains Abbey.

SHOPS, KING'S HEATH AND ASTON, BIRMINGHAM.

The three shops at King's Heath, which have been erected for Messrs. Midland Buildings Ltd., have the external walls faced with 2⅝-inch "Old English" hand-made bricks (made by Messrs. Collier of Reading), varying in all shades of colour from yellow and warm red to purple, with mortar joints of a light colour. The roof is covered with thick greenish-grey slates. Mr. W. Harvey Gibbs, of King's Heath, was the contractor, and the architects were Messrs. Ingall, Bridgwater and Porter, Licentiate R.I.B.A., 3 Temple Row West, Birmingham.

The three shops at Aston, which have been carried out from the designs and under the superintendence of the same architects for the same proprietors as the above, are of a plainer character, with the upper front



SHOPS, ASTON BIRMINGHAM.—Messrs. INGALL, BRIDGWATER & PORTER, Architects.

walls faced in stucco, with "Titford" vari-coloured brick pilasters, &c., the roof being covered with Leamington brindle tiles. Mr. E. M. Squire, of Saltley, was the contractor.

NOTES AND COMMENTS.

THE dispute in the London building trade between the masters and the workmen is, we fear, likely to be of some duration, as it is obviously a fight for existence on the part of the trade unions. These organisations at the present appear to be troubled with a tendency on the part of their members to disregard the agreements made by their leaders, presumably on behalf of all the members. Whilst the existence of trade unions may be deemed an advantage to the body politic, inasmuch as they form a proper means for collective bargaining, it is obvious that the whole value of such organisations from this point of view is lost if those who are represented refuse to endorse the action of their representatives. The leaders of the trade unions naturally desire to have all the members of the trade with which they are concerned enrolled in their union; thus only can they be in a position successfully to carry out collective bargaining. On the other hand, the independence of the men results not only in insubordination amongst those who are members of the union, but also in the abstention from membership of a large number of workers in the trade—and the building trade particularly embraces a very large proportion of workers who are non-members of trade unions. We hope that the present trouble may soon be brought to an end and peace restored, so that architecture and building may not suffer further from internecine struggles.

In the report of Viscount Esher to his Majesty on the completion of the Memorial to Queen Victoria there appears a paragraph which might possibly lead to a wrong impression. This reads as follows:

"On receiving King Edward's commands it became my duty to have prepared a preliminary sketch of the scheme for the proposed memorial. This was admirably done by a young and talented draughtsman, now a surveyor of your Majesty's Office of Works, and the sketch in question formed the basis of the designs soon afterwards invited from the eminent architects who were selected to compete for the architectonic treatment of the Mall. When a fortunate choice had fallen on Sir Aston Webb, his plans, together with the designs of Sir Thomas Brock, were at every stage submitted to King Edward, and, at a later period, to your Majesty."

It should not be supposed that the preliminary sketch referred to was more than a statement of the requirements of those who initiated the competition. In every case it is necessary that the promoters of a competition should state as clearly as possible what it is that they wish competing architects to provide. Ordinarily this will take the form of schedules of accommodation, but in such a matter as that of the Queen Victoria Memorial it was clearly more easy to define the views of the promoters by means of what is called "a preliminary sketch of the scheme for the proposed memorial."

Edinburgh is proceeding slowly in the business of erecting a memorial to the late King Edward VII., and a meeting of the executive committee has been held for further consideration of the plans of the memorial. The original idea of a national memorial to be erected at Holyrood included the removal of some slum property at the foot of the Canongate and the erection of a large gateway in front of the Palace, but when Glasgow and a number of other important districts embarked on memorial schemes of their own the Edinburgh scheme had to be considerably modified. Subsequently plans were decided on which provided for the enclosure of the courtyard with a stone gateway at the Canongate entrance and colonnades at the south and north ends, that at the south to form a site for a bronze group with his Majesty as the central figure. This design, which was by Mr. G. Washington Browne, R.S.A., was stated at the time by Sir William Brown, then Lord Provost, to have the approval of his Majesty King George. In an official communication by the Town Clerk it was stated that as the full scheme which had been under consideration would have cost more money than the sum in hand they had gone fully into the matter again. There was a letter from their Majesties, from which it appeared that they attached considerable importance to their desire to have two beautiful ornamental gates at the north and south ends of the forecourt. Mr. Washington Browne had had a design prepared giving effect to their Majesties' wishes in the matter. The meeting generally approved of this design and instructed Mr. Washington Browne to bring up a complete design showing these gateways in connection with a statue or medallion, or other direct memorial to King Edward, and decided that another meeting be held when this design is received.

The preservation of memorials of the past is not infrequently connected with difficulties arising from an insanitary condition of old buildings, and in this respect arise difficulties with regard to the preservation of Cloth Fair. On the left, entering from Smithfield, there are four picturesque houses of varying dates and the Dick Whittington tavern, now closed. They are worth preserving. No one can see them, however, without coming to the conclusion that preservation would mean taking them over completely and putting them to different uses. At the moment some of them are used for the business of rag and bone merchants, and one is a fried-fish shop. Some of the upper parts are let out in tenements. On the other side there are half a dozen or more old houses of picturesque appearance. Here, again, preservation would mean a different use.

It is a regrettable fact that this matter of Cloth Fair has been considered from one aspect only—the aspect of the public health. But the Corporation has no committee whose business it is to watch over historic and antiquarian interests. Had this question been before the London County Council, its Local Government and Museums Committee would have reported in the ordinary way. As it is, the Court of Common Council has heard no interest but the sanitary interest. Whether it is practicable to make Cloth Fair sweet and clean in view of the proximity of the markets it is difficult to say; it is certainly not impossible.

There appears at the present time to be a wave of opinion in the public mind with regard to "standardisation," which, in our opinion, is decidedly inadvisable. In a discussion which occurred at a meeting of the Hampshire Educational Committee it was suggested that something ought to be done in regard to the standardisation of schools. Although from the point of view of economy it might appear desirable that in order to reduce first cost, schools, as well as cottages, should be standardised and turned out on modern principles of manufacture by the gross of similar pattern, it is clear to all those who have any practical knowledge that schools are a class of building which cannot be standardised. Not only are there differences with regard to desirable accommodation, but the infinitely varying conditions of site and preferable material must always render a standardised pattern of school unsuitable in the great majority of instances.

It would scarcely be possible to a Southerner to understand that there should be in Scotland two different methods of measuring builders' work, and therefore the incorporation by Royal Charter of a Faculty of Surveyors of Scotland is a fact to be welcomed, and one may cordially agree with what was said by Sir Robert Lorimer in proposing the toast of "The Faculty of Surveyors" at the inaugural dinner. With reference to the Faculty he thought its charter was a most carefully compiled document. He wished specially to refer to one of the objects stated in the charter—the establishment of a uniform mode of measuring all kinds of architectural work. It had always struck him as a most anomalous state of affairs that in two cities so close together as Glasgow and Edinburgh two different methods of measuring should be in use. He was perfectly sure that if the Faculty could bring about one uniform mode of measurement for the whole of Scotland it would be of the very greatest use, not only to the architectural profession, but to all allied trades. The existence of two measuring systems as at present was undoubtedly a most puzzling and difficult thing.

COMPETITION NEWS.

BARNSLEY.—Members and Licentiates of the Royal Institute of British Architects are advised that the conditions of the Town Hall competition are not in accordance with the published regulations of the Royal Institute for Architectural Competitions, and that the Competitions Committee are in correspondence with the promoters with a view to their amendment.

COVENTRY.—The Education Committee have had under consideration nine sets of competitive plans for the proposed enlargement of Little Heath Council School, and have accepted those of Messrs. G. & I. Steane, of Little Park Street, Coventry.

GLASGOW.—The Glasgow Institute of Architects announce that the Alexander Thomson Travelling Studentship, value £60, with (conditionally) a second prize of £20, will be held next year. The subject of competition is "A College Memorial Lecture Hall," and the drawings must be sent in by January 15, 1915. The Trustees offer a second prize of £20 should the quality of the work and the number of competitors warrant this. Competitors must be between nineteen and twenty-five years of age, and natives of and resident within the United Kingdom. Particulars may be obtained from Mr. C. J. MacLean, secretary to the Trust, 115 St. Vincent Street, Glasgow.

NOTTINGHAM.—Messrs. John Howett & Son, architects, Nottingham, have been awarded first place in the limited competition for a masonic hall, lodge rooms, and other buildings, proposed to be erected in Chaucer Street at an estimated cost of between £20,000 and £25,000. Premiums have been awarded to three other competitors, namely, Messrs. Brewell & Baily, Mr. W. Dymock Pratt, and Messrs. Sutton & Gregory. Nine sets of drawings were received. The assessor was Mr. Robert Evans, F.R.I.B.A., of Nottingham. The competition drawings will be on view at the rooms of the Nottingham and Derby Architectural Society, 64 St. James' Street, between the hours of 10 A.M. and 7 P.M. on the 30th and the 31st inst.

ILLUSTRATIONS.

LONDON, COUNTY AND WESTMINSTER BANK.

THESE premises recently erected from the designs of Sir Ernest George, A.R.A., and Mr. A. B. Yeates, F.R.I.B.A., complete the block of the Royal Exchange Buildings, the northern part of which was commenced some years ago.

THE CUNARD COMPANY'S OFFICES, PARIS.

As a refined example of a modern shop front, the Paris offices of the Cunard Company, erected from the designs of Messrs. Mewès & Davis, are of no small interest.

THE BISHOP'S PALACE, ELY.

WE have the pleasure to commence the publication of the drawings made on his tour by Mr. H. St. John Harrison, the holder of "The Architect" Travelling Studentship last year.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

AN ordinary general meeting of the Royal Institute took place on Monday last, the 26th inst., at Conduit Street, W. Mr. Reginald Blomfield, A.R.A., occupied the chair.

The death was announced of Mr. W. L. Vernon at Sydney, for many years superintending architect for the Government of New South Wales. Mr. Vernon was elected a Fellow in 1886.

Colonel Sir Herbert Jekyll, K.C.M.G., then read a paper on—

London Traffic Problems.

The amazing growth of traffic during the last few years may be illustrated best by figures. In the year 1892 the total number of journeys taken in Greater London on local railways, tramways, and omnibuses amounted to 562 millions; in 1902 to 911 millions; and in 1912 it had reached the astounding total of 1,786 millions. In the first of these ten-year periods the increase had been 62 per cent., and in the second no less than 96 per cent. The figures, large as they are, take no account of cabs or of the suburban traffic of the trunk railways, for neither of which are figures available. A recent estimate puts the cab traffic at fifty millions, and the railway suburban traffic at 250 millions, so that the total number of journeys in public conveyances of all kinds must have been well over 2,000 millions in 1912. The increase cannot be accounted for by the growth of population, since the Census Returns show an increase of less than 17 per cent. between 1891 and 1901, and little more than 10 per cent. between 1901 and 1911. The number of journeys per head of population advanced successively from ninety-eight in 1892 to 136 in 1902, and to 244 in 1912. Adding the cab and suburban railway traffic, the number per head in 19 cannot have been much less than 300.

In the early part of the nineteenth century the population of London increased slowly. The capacity of roads and waterways to supply the inhabitants of a small area with the necessities of life is limited, and with the slow means of conveyance then existing the limit had almost been reached. At this time the efforts of the Legislature were directed to bringing the whole of the main roads in what is now known as Greater London under the control of a single body, and this desirable measure was on the point of being carried into effect when the whole aspect of the question was altered by the introduction of railways. Attention was at once diverted from the roads, which became of less and less importance as the railway system developed, with the result that they were left to the divided control of local authorities, under which they remain to the present time. London grew apace as soon as the railways had become firmly established. Suburbs developed as places of residence by making them easy of access from the centre. Without railways London could never have reached its present size. While the development of Outer London, which began about the middle of the last century, was the work of the railways, internal communication continued to advance up to the end by the gradual improvement of the old horse vehicles, and the addition of underground railways, steamboats, and tramways. Large areas both within and without what is now the County of London were covered with houses, and, to all appearance, expansion might go on indefinitely. Unhappily the new areas were not developed in conformity with the general plan, and the old evil of unregulated expansion, which lies at the root of the traffic problem, was allowed to go on unchecked.

The beginning of the present century was to see the commencement of a new era in traffic. The Central London Railway, which had been opened in 1900, was quickly followed by other tube railways; the Metropolitan and District lines were converted from steam to electricity; horse tramways were electrified, and the whole tramway system both within and without the County of London was extended; while mechanical omnibuses and cabs took the place of the old horse vehicles. These and other changes, accompanied as they were by services greatly improved in convenience, frequency, and speed, and by a general lowering of fares, brought about a complete revolution in the conditions of traffic, and account fully for the unprecedented increase during the last ten or twelve years. The public are not slow to take advantage of improved facilities, and these are now so good that in no city in the world is travelling so comfortable, speedy, and cheap as it is in London, while the annual saving in the time of the community, if it could be stated in terms of money, would be found to amount to an enormous sum. One of the results of this may be seen in the activity of building operations in parts of the Metropolitan area which had not previously been available for residential purposes owing to the lack of convenient access.

Improvements equally great have been made in organisation and administration. A few years ago there was fierce competition not only as between railways, tramways, and omnibuses, but even among themselves. The benefit of cheap travelling was, however, being purchased at too high a price. Had this state of things continued the public must have suffered either by the curtailment of facilities or by a general increase of fares, since transportation can no more be carried on at a loss than any other business. Attempts to bring about co-operation among the various competing agencies met with very limited success, and it soon became evident that the only real remedy was an amalgamation of interests. The policy of amalgamation, which began in a small way among the omnibus companies, has happily been carried into effect, to the greater advantage of the travelling public, and also of the whole traffic of London. The improvement is especially marked in the service of omnibuses. It has further become possible to co-ordinate the various forms of transportation. In a city as large as London there is room for every kind of conveyance, but it is not desirable that all should compete for the same traffic over the whole area. Such unrestricted competition leads to needless duplication and loss to all. Railways, tramways, and omnibuses all have parts of their own to play, and although overlapping cannot be avoided, the aim should be to confine each, as far as possible, to its own peculiar field. For instance, the directions in which railway improvements are to be looked for are the separation of suburban from long-distance traffic, the electrification of suburban lines, the shortening of journey times, the increase of accommodation in the rush hours, and the extension of urban railways into rural districts. Such changes would be of special interest to architects, inasmuch as they could not fail to stimulate building in the outer suburban area.

In regard to internal communication, where there must always be competition, there is little difference in respect of fares, and, apart from individual preferences for particular kinds of conveyance, the main consideration is time. It is much to be regretted that the underground electric railways were promoted as separate undertakings. Much has been done to improve their inter-working, and further improvement may yet be made; but had they all been designed from the first as one system, like the underground railways of Paris, better arrangements might have been made for the interchange of traffic, and vast sums of money, spent in promotion and construction, might have been saved.

One of the greatest benefits which underground railways confer upon the community is the relief which they afford to the overburdened streets. It is not that the volume of surface traffic is any less than it was—on the contrary, it is increasing from year to year. The real effect of underground railways is not so much to diminish the traffic in the streets as to permit the movement of millions of people, who without them would not be able to move at all.

The movement of population outwards from the centre which has taken place in the last ten or twelve years is attributable directly to the increase of facilities for movement which has occurred in the same period. It is clearly reflected in the returns of the last census which, for the first time in more than a century, show an actual decrease in the population of the County of London, accompanied by an enormous growth in the population of the Outer Ring. There is every reason to hope that this shifting of population will continue at an accelerating rate as the people come to realise the advantages which are now within their reach. A point which should not be overlooked in this connection is the necessity for preserving open spaces in localities which are becoming rapidly developed. The greatest care should be taken to avoid building up new areas in such a way as to reproduce, even approximately, the horrors of the slums. The example of the Essex boroughs is one to be avoided.

Nine years ago the Royal Commission pointed out that the main cause of the difficulty of the London traffic problem was the narrowness of the streets and the fact that they were not laid out on any plan. In the centre, comprising the greater part of the County of London, the ground has been built upon so closely that nothing can be done short of widening existing streets or making new ones. The cost of such operations would be so large that they could only be carried out by persistent effort spread over a long series of years, and in order that they should have the best effect it is essential that they should conform to a definite plan, laid down in advance, and worked up to by degrees. Much has already been done; but so far all improvements have been isolated and fragmentary, designed to meet pressure at particular points rather than to form parts of a general scheme. In this respect London stands alone, for in all other great cities where the same difficulty has arisen the first step has always been to prepare a plan. It is characteristic of the national temperament that we should still proceed from hand to mouth instead of taking a long view of the situation.

Of the two methods of effecting improvement, the construction of new streets is generally preferable to the widening of old ones. Both operations are costly; but the former causes less interference with traffic, and gives greater relief in the end by providing alternative routes.

Additional and wider bridges are also one of the pressing requirements at the present time, in particular a road bridge with approaches to connect Charing Cross with St. George's Circus—two out of the three greatest traffic centres in London; and a new bridge to take the place of Lambeth Bridge, which, though still standing, has been condemned as unsafe for anything but pedestrians. The whole subject is one of special interest to architects, inasmuch as there can be no greater ornament to a city than a fine bridge. The design of such structures has come to be regarded as the almost exclusive concern of engineers, though an architect may be called in to invest it with some degree of artistic merit, which, of course, is a hopeless task. The process should be reversed, and the design left to the architect, with such assistance as he may require from the engineer.

Necessary as it is to widen the principal thoroughfares or to add to their number, something might be done, at comparatively small expense, to increase their capacity. If a careful survey were made of each street it would often be found that obstructions might be removed, that the widths of carriage-way and foot-ways might be readjusted, and that a number of improvements might be made which, though small in themselves, would, when taken together, make an appreciable addition to its effective capacity. The greatest of all obstructions are the centre lamp-posts which extend throughout the whole length of some of the busiest thoroughfares. Their retention is the less excusable, because the advantages of central lighting can be had without them.

Paris, with a population only half as large as that of London, has twice as many outlets, which it owes to the wise forethought of the French Government. The outlets of London are not only too few in number, they are for the most part too narrow as well. They are, in point of fact, the roads which have existed for centuries, and no material addition to them has been made for more than eighty years. The discovery of a new line of approach is no easy task. It is comparatively simple to ascertain the general line which a new road ought to take, having regard to the volume of traffic seeking an outlet in a particular direction; but it is a matter of the utmost difficulty to fix its precise location when the matter comes to be dealt with in detail. Colonel Hellard, who has been engaged upon this work for the past three years, has examined the whole of the ground with the greatest assiduity and patience. The new roads shown upon his plan represent the least that will be required both to afford reasonably free communication between London and the surrounding districts, and to furnish proper access to localities suitable for development as building areas. The proposed roads are of three kinds—(1) radiating main roads, (2) encircling roads connecting with (1) and making it possible to pass through London without traversing the crowded centre, and (3) by-pass roads, avoiding certain places where traffic is abnormally congested. The aggregate length of proposed new roads is 117 miles, which, with the addition of thirty-two miles of existing roads, widened and improved, makes a total of 149 miles. The cost of all this will not be small, but these or similar roads will have to be made sooner or later, and it is certain that the longer their construction is deferred the costlier they will be.

Main roads should not be less than 100 feet wide—a width which has been adopted as the standard for new roads in the neighbourhood of Liverpool. In fixing this width it is not intended that the whole of it should be brought into use at once, but that no building should be allowed within 50 feet of the centre-line.

In addition to the reasons already given for increasing the road accommodation in the outer Metropolitan district, there are two considerations which have an important bearing on the subject—namely, the growing use of roads by mechanical vehicles, and the action of local authorities under the Housing and Town Planning Act.

The Town Planning Act has not been long enough in operation to allow of much progress beyond the preliminary stages; but a number of schemes are under consideration in the Metropolitan area, and some are approaching maturity. It is of the utmost importance that these schemes should include due provision for arterial roads before the plans are finally settled. What is required is a central authority, with power first to lay down the lines of arterial roads, and, secondly, to require local authorities to make their schemes conform to prescribed lines which happen to traverse their areas.

DISCUSSION.

Colonel Hellard, in proposing a vote of thanks, paid a warm tribute to Sir Herbert Jekyll, from whom as a chief he had always received every consideration and encouragement. It was owing to Sir Herbert that the enthusiasm and interest in the subject aroused by the issue of a report on suburban ariffic was not allowed to die away. It was necessary to bear in mind that roads were in a perfectly different position to railways. For instance, road construction was very severely handicapped by the fact that anyone who took upon himself to construct them must look for no return upon the outlay. So far as the improvement of roads was concerned, he was convinced it would be impossible to keep the subject too much before the public.

Mr. Raymond Unwin agreed with the lecturer that there was a definite movement towards the concentration of business in the centre of towns and towards the housing of the people on the outskirts. The distribution of population depended entirely on the means of transit and the time occupied in bringing people from their homes to their places of business. A little more attention might well be given to the amount of useless traffic at present in the streets. Under present conditions the distance between stations leads to a vast unnecessary traffic. This subject has been studied pretty thoroughly in the United States. In Chicago they found that a ton of coal could be conveyed a distance of 400 miles at a cost of one dollar, but it cost half a dollar more to deliver it from the station to the consumer. At Boston it was calculated that 6,000,000 ton-miles *per annum* would be saved if it were always arranged that the goods should be delivered from the depôt nearest their destination. With regard to suburban train traffic, it was much cheaper to carry passengers express than by slow trains. At New York they had found the comparison of efficiency between express and slow trains to be in the proportion of five to three. London did not suffer from congestion in the way that New York did. Allusion had been made to the amalgamation of interests among London omnibus companies; it seemed as if that removal of competition could be carried still further. By their tendency to speak disparagingly of tramways Londoners showed themselves distinctly provincial in their outlook and ignorant of what had been done in big cities abroad. In the making of new main roads he would urge the authorities should not be too niggardly as to width. It had been stated in the Press that the Government was putting pressure on local authorities to secure that such roads should not be more than 80 ft. wide. Such a maximum was not enough. When roads were being laid down in the country the difference between 80 ft. and 120 ft. was not great so far as cost was concerned. There was not much danger of our going to the extreme widths to be seen in many Continental towns. Roads were the corridors of a city, and the open spaces were its gardens. There was need of an organic power to co-ordinate the different local bodies, and such an authority must have a definite plan as a guide.

Mr. Sydney Perks regretted that Sir Herbert Jekyll had not touched upon pedestrian traffic. People did not realise the price paid for increased facilities for vehicular traffic in London. The number of accidents had increased enormously, except in the City, where owing to its size the traffic went much slower. Sir Herbert had advocated the demolition of the centre refuges. To his mind refuges were the very things wanted, and wanted in larger numbers. Furthermore, street lighting was, in his opinion, preferable from those refuges than from suspended overhead lamps.

In making improvements by demolishing buildings in order to throw the space into the width of the roadway people did not realise the whole eventual cost or loss. Architects had sometimes ridiculous ideas as to city improvements. For example, one had called on him with a scheme for demolishing large blocks of buildings round St. Paul's, in other that the cathedral might be better seen. He did think London might try to get its present open spaces into some architectural form. The open space near Charing Cross, for instance, had no form at all. Again, it was quite saddening to see the way Piccadilly Circus had been mutilated. A real architectural form would mean better regulation of traffic.

Mr. R. Stephen Ayling regretted the paper had not included traffic reduction as among the remedies for the present congestion, and especially the elimination of the vast number of goods vans. The latest report of the London Traffic Branch of the Board of Trade showed that the number of trade vehicles passing over the bridges and through the tunnels of London had increased from 56 per cent. in 1911 to 58 per cent. in 1912. In evidence before a Royal Commission it was stated that five-ninths of the trade vehicles passing over Southwark Bridge were empty. Could not this waste of energy be obviated? At the suggestion of the President of the Local Government Board, Mr. Edgar Harper, formerly statistical officer of the London County Council, considered this question, and reported that the work of collection and delivery of goods in London from a central goods clearing house could be accomplished by 5,000 motor lorries. The machinery for automatically handling and sorting goods has quite passed the experimental stage, and is now in full working order at Battersea. The area occupied by railway goods yards in London nearly equals the whole of the London parks, and the capital value of the goods yards is calculated to be about £70,000,000. This land could be well and profitably employed for the much-needed housing schemes. As architect to the new Transport Company he (the speaker) had made two designs for the proposed building, and believed that a central goods clearing house would greatly reduce the number of goods vans in the London streets.

Mr. Davidge and Mr. Hooper contributed to the discussion.

The President, before putting the vote of thanks, made a few comments on the paper. One of the points which Sir Herbert had pointed out was the tendency to get further and further afield in search of a home. This meant fresh building operations, and it ought to develop quite a fresh type of house, suited to the requirements of occupants who were half city and half countrymen. Sir Herbert had laid it down that there should be at least 100 ft. of width for the main roads; that would be a great thing, but it was not enough. In provincial France many of the old cities have their main axis well over that width. Sir Herbert had also pointed out that the architect ought to be consulted first in the designing of bridges. Such a recognition of their rights was of importance. It had been clearly brought home that in dealing with roads there should be some central authority to prevent a recurrence of the unsightly mistakes of their predecessors.

The vote of thanks was then passed with acclamation.

A resolution was then adopted unanimously to the effect that what was urgently required was a central authority with powers to lay down the lines of arterial roads, and that local authorities should be compelled to make their schemes conform to prescribed lines which happen to traverse their areas.

Sir Herbert Jekyll having briefly replied to the vote of thanks, the meeting terminated.

The announcement of the deed of award of the prizes and studentships for 1913-14 was made at the conclusion of the above discussion.

Six essays were received for the Institute silver medal and twenty-five guineas offered for the best essay on any subject of architectural interest selected by the competitor himself. The medal and money prize has been awarded to Mr. T. S. Attlee, M.A., A.R.I.B.A., 52 Clun House, Surrey Street, W.C. (*Per Ardua ad Astra*), for his essay on "The Influence on Architecture of the Condition of the Worker." A certificate of honourable mention and £5 5*s*. was awarded to Mr. J. M. W. Halley, Licentiate R.I.B.A., of Bedford Row, W.C. (*Resurgam*), for an essay on "The Rebuilding and the Workmen of St. Paul's Cathedral, from the 'Accounts.'" Certificates of honourable mention have been awarded to Mr. Martin Shaw Briggs, A.R.I.B.A. (*Filogenovesato*), for an essay on "The Architecture of Genoa," and Mr. Alexander R. C. Eaton (*Daedalus*) for an essay on "Minoan Architecture: a Study of pre-Hellenic Art in Crete."

There were six competitors for the Institute silver medal and ten guineas offered for the best set of measured drawings of ancient buildings in the United Kingdom or abroad. The prize has been awarded to Mr. James Bennett, c/o Messrs. J. J. Burnet & Son, Glasgow (*Rags*), for his five strainers of the Tempietto at San Pietro in Montorio, Rome.

The subject for the Soane Medallion and £100 (for Continental travel) was "Design for an Official Country Residence for a Royal Personage in the United Kingdom." Out of eight competitors this prize was awarded to Mr. Cyril A. Farey, 10 Great Ormond Street, W.C. (Thistle, device), seven strainers. A certificate of honourable mention and £10 10*s*. has been awarded to Mr. H. Chalton Bradshaw, Wavertree, Liverpool (*Farnesina*), six strainers. Certificates of honourable mention were awarded to Mr. Gordon S. Keesing (*Akarana*) and Mr. Thomas Chalkley (Anchor, device).

For the Pugin Studentship—silver medal and £40 (for travel in the United Kingdom)—there were five competitors. The studentship goes to Mr. W. Cecil Young, Heaton Moor, near Stockport. A certificate of honourable mention has been awarded to Mr. Julian R. Leathart.

The subject for the Tite Prize—certificate and £30 (for travel in Italy)—was "Design for the Best Imaginative Composition in Perspective in the Italian Style for an Important Fountain." There were only eight competitors. Of these the successful one was Mr. Trenwith Wills, 5 Page Street, Westminster, S.W. (*Golden Dolphin*), who submitted four strainers. A certificate of honourable mention and £10 10*s*. was awarded to Mr. A. G. Shoosmith, 10 Gt. Ormond Street, W.C. (*Panama*).

Drawings were, as last year, received from only one competitor for the Arthur Cates Prize of forty guineas, which has been awarded to Mr. J. C. Rogers, 17 York Place, Baker Street, W.

The subject set for the Grissell Gold Medal and ten guineas (for Design and Construction) was "Design for a Four-storey Dock-side Warehouse." There were three competitors, and the successful one was Mr. Philip D. Bennett, Edgbaston, Birmingham (*Syrod*).

Two applications were received for the Godwin Bursary—silver medal and £65. Mr. Martin Shaw Briggs, A.R.I.B.A., was selected.

The Ashpitel Prize of books to the value of £10, offered to the student who distinguishes most highly in the final examinations was awarded to Mr. William Wallace Friskin, Notting Hill, W.

ROYAL ACADEMY LECTURES: ARCHITECTURE.—I.

The course of four lectures on "Architecture" to be delivered this year at the Royal Academy by Professor Edward S. Prior, F.S.A., Slade Professor of Fine Art in the University of Cambridge, was commenced on Monday afternoon last, the 26th inst. The second of the series is to be given to-day (Friday). The remaining two will be delivered on February 2 and 6.

I.—The Meaning of Mediæval Art and its Basis on Classic Style.

Professor Prior, by way of introduction, explained what he took to be the advantage and interest of ancient architecture to the present-day artist. He did not believe it to lie in the beauty of the ancient forms, as abstract architectural, sculptural, or decorative inventions. It was very doubtful if the archæological capacity of modern research and the discovery of so much ancient beauty can be called any benefit to modern art. It has acted, indeed, in the direction of discouraging experiment, and has fostered in the public the habit of judging art, and particularly architecture, as a réchauffé of decorative items. Of course, certain temperaments are not creative, and must find foundation for their modern work in the exact knowledge of ancient detail, and it is not for the educational programme to discourage learning. But, it is needless to say, there is a better way. Certainly the ways of ancient art can be studied as a stimulus to the architectural capacity without the conscious mimicry of exact remembrance, the deliberate repetition of the ancient form. Indeed, they are more completely understood—the lesson of ancient art becomes effective for the service of modern life—only when the ancient form is not repeated, but when the spirit of art is reincarnated; when the ancient joyousness of art, that food of expression in the experiment of art, is acquired.

As a man, the architect has, of course, to justify himself to himself by the delight he has in building. But as an architect he must justify himself to the community by the education of that imagination, for the lack of which they are forced to turn to him. He must be able to imagine well. The education of an architect must be largely the training of his imagination. Every method of construction and arrangement of ancient architecture demands his attention. Every shape of ancient building has for him the question of how and why.

Now, the tale of ancient architecture has a very varied record in the sense of conveying the meaning of its conditions, whether racial, spiritual, social, mental, or material. It has been great architecture when it has met those conditions directly and effectually; it has been debased, inconsequent architecture when its imagination has faltered, when it has met conditions imperfectly and half-heartedly. That is one of the broad essential principles which the history of great architecture develops.

It is by understanding this that the individual capacity of the student may be trained to the power of expressing vividly and directly in different directions and by various means the conditions he has to meet: that is how his service to the community which is his justification to be trained in art may be most efficiently rendered.

The Mediæval architecture of West Europe—Romanesque and Gothic, as we call it—was in its creation of style the direct reflection of certain material necessities which have in times past conditioned building, and to some extent condition building to this day. These are the necessities of using stone and wood to enclose and cover congregations or assemblies of men. It was an equally efficient reflection of that enthusiasm for building which makes the birth of style, and to it, as a crown to the brows of emotional building, came the divine afflatus of beautiful form. The efficient creative Mediæval architecture of Europe was created, grew to maturity, and declined in the 500 years from Anno Domini 1000 to the year 1500, roughly and roundly. One can say that Mediæval architecture was created and perfected among the societies whose interest centred to the cities of Cologne, Paris, and London. But just as the roots of Mediæval church architecture had drawn widely from the East and the West and the South, so the branches of church style spread widely, but not as a coppice of saplings. You should rather think of a trunk of Mediæval art, distinctly rooted, and throwing branches out to cover one corner of Europe. It was, as it were, grown as a boundary tree to three territories, French, English, and German, with a different side to each, but one body at the heart.

France, England, and Germany, as we speak to-day, are distinct nationalities, with distinct Governments and patriotisms, but the political and national separation to which we are accustomed was a vague thing for Mediæval architecture. The area was a medley of nationalities whose component parts differed with the centuries. A general and similar civilisation which we may roughly centralise in the three cities Cologne, London, and Paris, created Romanesque and Gothic. But neither Paris, London nor Cologne made any set order of architecture; the whole creation was never specially French, English, or German. Therefore, when we say French, English, and German in speaking of Mediæval style we must not be thought of as implying national possession or monopoly, but use the words as short expressions for more local description.

It has become too much the fashion of the archæologist to speak of Mediæval architecture as essentially French. That the creation of Gothic forms came as an invention in any place seems to be a fundamental misunderstanding. The circumstances of Mediæval life moulded the Gothic forms, and those circumstances were not confined to one place or to any one man or professional class. On the contrary, the fundamental sources of the Gothic inspiration are to be found in a thousand places, having existence in every monastic community, in every religious house, and from the tens of thousands of builders who were the builders of the religious houses. The fundamental origin of Mediæval style was in the monastic system of Mediæval civilisation, not in any accident of nationality. Even though that system be called French, the term must not be applied to building in the sense that monastic building was fundamentally French, and was, as a French style, copied in the other countries. While what one mason built for one monastic establishment was no doubt known, and reacted on what another built at the next, the effects of deliberate copying can be seen to have been slight and unproductive. For example, in our English work, if at Canterbury and Westminster French ideas of building came into England, they were absolutely barren in their results. And in the same way, when English ideas went abroad to France in flowing traceries and the alabaster retables, it was no English architecture that followed, but was radically un-English. The greatest architecture of the Middle Ages, the most splendid sculpture, the finest ivories, and some of the best painting were those of Paris; but if Paris had not existed there would still have been great cathedrals, splendid sculpture, and beautiful painting, and the course and the glory of Gothic style would have been unaltered. In the thirteenth century Paris was for the Ile de France what Athens was for Greece in the fifth century B.C. There was concentration of Mediæval effort, naturally, in the great cities.

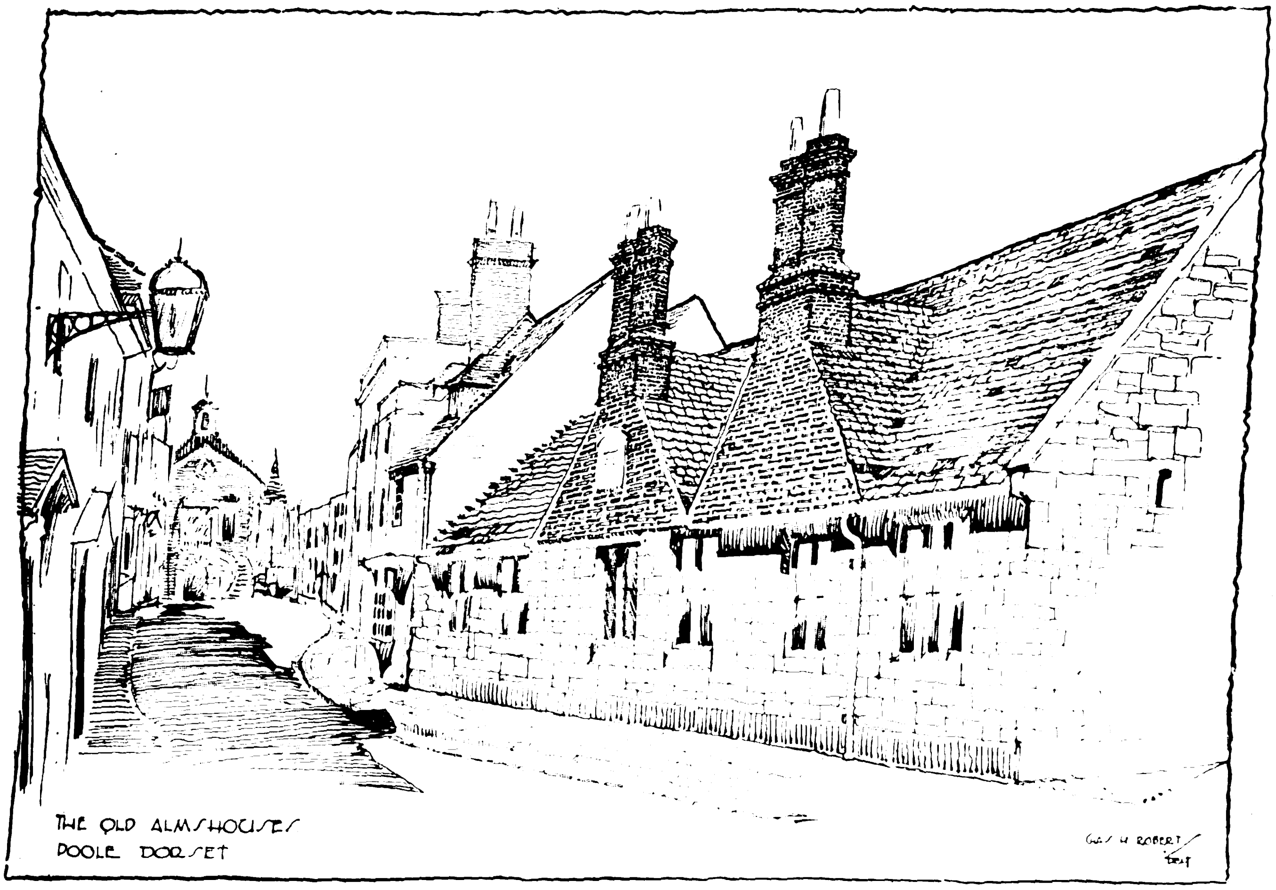
There is another definition that needs making. In speaking of architecture to an audience of to-day one necessarily meets the idea that architecture owes distinction and quality to the genius of individual architects. But in speaking of Mediæval architecture as a building conditioned strictly as to both place and time we must be careful of loose talk about the individual skill of this or that architect. The word architect is used nowadays with a peculiar reservation to the idea of one who makes the beauty of building by individual idea. The making of beauty by idea—which we call the designing of a building—has no parallel in the building of Mediæval architecture. Designing authors of beauty are inconceivable in any one of the three classes whose work was the cathedral, the dictating ecclesiastic, the managing clerks, or the building artisan. It must be clearly realised that the ecclesiastic, the clerk, or the master-mason had no power of doing what architects of to-day are doing—designing a building at will. If we speak vaguely and ignorantly of such ecclesiastics as Priest Alan of Walsingham being the architect of Ely Cathedral, or Bishop William of Wykeham as the architect of Winchester Cathedral, or Wilers de Honcourt being a practising architect, without defining which of three functions we suppose them to have exercised, are we not guilty of making a personality out of a bundle of faculties? No bishop, or clerk, or working mason of the Middle Ages can have any claim to be thought of as designers in the sense we have the designing architect of to-day.

At the end of the Classic period column, arch, and the circular—or, as it is technically called, apsidal—enclosure had grown to be universal and usual building forms throughout Western Europe, in much the same way as the expressions of the Bible or Shakespeare pass into common use and become the common possession. They were being used as the ordinary items which every structure could have in the year 313, when the "Peace of the Church" started the public building of Christian architecture in West Europe. But the first Christian building used the column, arch, and circular wall, not, as to-day, just as fancy dictates, but as traditions of style with the Imperial prestige behind them. The literary and historical connections of Classic forms are what has given those forms their extraordinary vitality.

Classic prestige made those forms the necessity of first Christian building, and again they were to make them the necessity of Renaissance. At one end the Classic forms, irradiated by the glory of the Roman Empire still, in the year 1000 inflamed the ambition of the first Romanesque experiments which were to grow into Gothic. And then at the last, five hundred years later, from the same forms and from the same reflected glory came in due course the death sentence to the Gothic ideal. In the one case it came as initiating and fostering structural experiment, in the other it crushed experimental constructiveness and put non-structural expression in its place. Style may be either the basis of building invention or the diversion of the imagination away from structural ideals.

For the seven hundred years from the first building of Christian churches no new architectural form was created in Western Europe, no new constructional idea developed in what was to be the area of Mediæval architecture. Instead of advance we have loss of building instinct. The Classic outlines were continually degraded, the skill to build continually declined, until, as it were by a momentous birth, towards the year 1000 a new architecture appeared.

Later Roman craftsmanship became debilitated through being able to steal what it wanted. While the supplies of architectural items from the ruined disused buildings of the Roman Empire were maintained, the scheme of the Classic order could be adapted to the Christian building. But the time came when the continuous colonnades had



all been used up and the temples ransacked; only odd columns of different lengths could be got, and so devices became necessary to make odd lengths and sizes to fit in. The traditional spacing of the columns at first was obligatory to taste, but there was no longer the skill to set out and dress the great marble lintol. So recourse is had to the arch, which is able to be made with small stones and with less exact setting.

In Western Europe, unlike the Eastern, no architecture grew. The constant irruptions of barbarians destroyed culture and extirpated the artistic castes. The laying waste of cities brought back society to primitive conditions. Yet the decline had commenced in the first centuries of the Roman Empire. When, about the beginning of the Christian era, Vitruvius published his book he reduced the heritage of ancient architecture to a system. A stock tradition of art was established, a grand manner, a perfect art of building, capable of being taught and reproduced throughout the Roman Empire. In a general way one can say that that grand manner was acquired by the Imperial architects throughout the provinces.

Now style and culture are matters of education, not only to the architect who supplies them, but to the client who receives them. In the Augustan age the culture of the Roman gentleman responded to the culture of the Greek artist. As long as the Roman civilisation endured cultured clients were there to understand the learning of the architect. But when barbarian blood and barbarian manners sapped the culture the clients grew less and less receptive. The architect's academic education ceased to be required by the community, because its fineness could not be perceived. Architecture grew boorish, and its harmonies were ragtime.

Great is the power of a great tradition in architecture. The possession of all ages is the possession of style, the great manner, the perfect proportion, the academic education, the mistress art, as long as there is a cultured public. But whenever and wherever the uneducated and the barbarian increase and multiply, and the fine sense and educated understanding are minished from the land, then academic style ceases to be the guardian of art. It promulgates a convention with a constantly degraded rendering, till style—the Classic style—the tradition of Greek beauty, and the assumption of Roman magnificence appear as the symbols, not of culture, but of barbarism. So in the long centuries of the decline did the forms of ancient architecture become.

THE OLD ALMSHOUSES, POOLE, DORSET.

THE alms-row situated in Church Street, and known as the "Old Almshouses," appears to have anciently formed part of the possessions of the Fraternity of St. George, and to have been devoted to the charitable purposes of that Society, and on the dissolution of the Crown, together with its other property, on behalf of the Corporation. They are of great antiquity, being mentioned so early as 1429.

They have been extensively rebuilt and repaired during the latter centuries, most probably from the remains of the fine old church, which was destroyed by fire. The small niche at the gable end of the row most certainly gives evidence of this.

LONDON COUNTY COUNCIL.

CONTRACTORS' DISPUTE.

THE settlement recently arrived at of the dispute between Messrs. F. & H. F. Higgs, the contractors for the raft foundations of the new London County Hall, and the London County Counncil was this week the subject of severe criticism by Mr. R. I. Tasker. Particulars of the terms of the settlement appeared in our last issue.

Mr. Tasker said the County Hall contract threatened to become a scandal and a disgrace to the whole of London, and he objected to the chairman of any committee arranging terms with a contractor without consulting his committee or the Council. Doubtless Mr. Salmon (Chairman of the Committee) was actuated by pure motives, and by what he considered ripe and sober judgment; but the Council must be left to judge of the result of his intervention. One effect of Mr. Salmon's action would be that contractors would say, "We have only to put up a bold front to the County Council and they will give way." Possibly Mr. Salmon had been inspired by somebody else, and in any case he was a man who sheltered himself behind others.

The Chairman: Order, order! You must not say that.

Mr. Tasker concluded by asking that a new Standing Order should be framed defining the position of chairmen of committees, and determining what they might or might not do in such matters as the one to which he had called attention.

Mr. Salmon declared that his action was justified, inasmuch as the Council's legal advisers had recommended that a compromise should be effected. He was in a very difficult position during the recess, but, in addition to eminent legal advice, had the benefit of the advice of the Chairman of the Council, and on that he acted.

THE BUILDING LOCK-OUT.

Mr. J. D. Gilbert asked the Chairman of the Establishment Committee: (1) Whether the lock-out by the Master Builders' Association had affected the men employed on the new County Hall; (2) if so, how many men were affected; (3) whether the committee proposed to consider what steps could be taken to prevent delay in the progress of the building?

Mr. Salmon replied that the existing tension in the building trade had seriously affected the work. Last week there were about 555 men employed on the site and preparing work under the direction of the principal contractors for the substructure and superstructure. The comparative number at present engaged was 75. As to the point raised in Mr. Gilbert's last question, he was conferring with his committee.

Major Gray, the Chairman of the General Purposes Committee, stated, in reply to a further question by Mr. Gilbert, that his committee was considering the situation which had arisen, but at the moment it was impossible to say what course would ultimately be taken.

NOTTINGHAM AND DERBY ARCHITECTURAL SOCIETY.

THE third general meeting of the Society was held on Tuesday, January 20, at 64 St. James's Street.

In addition to the members present the visitors included Alderman Ward, Councillor Berryman, Mr. S. Corner (Nottingham High School), Messrs. E. W. Humphreys, F. N. Smith, J. W. Briggs, and J. Pyatt.

Other business being disposed of, the President then had the pleasure of calling upon his son, Mr. C. A. L. Sutton, A.R.I.B.A., of the architect's staff of the London County Council, to read a paper upon "Schools for Mentally Defective and Physically Defective Children."

Before commencing his paper he said he was indebted to Mr. W. E. Riley, Superintending Architect to the London County Council, for the loan of the plans hung in the room, and for permission to take the photographs of the schools, which he would show through the lantern.

He pointed out that there were several classes of mentally defective children—viz. backward children, slightly mentally defective, and imbeciles, and among the physically unfit were cripples, children suffering from tuberculosis, heart trouble, paralysis, and other physical infirmities, while the deaf, dumb, and blind were in another special class, which he did not propose to deal with in his paper.

The mentally defective schools are built, as the name implies, for children who are mentally deficient, but the question naturally arises, "Who is to decide what children come under this head and are to enter such schools?"

Children who by means of mental defect are deemed to be unfit for ordinary elementary schools are nominated for medical examination.

The Medical Officer is furnished with a full report from the teacher of the school at which the child is in attendance, and if he is of opinion that it is a suitable case for admission to a school for mental defectives, he certifies in accordance with the terms of the Act of 1893.

The majority of the schools for mentally defective children are visited by a Medical Officer at least once a quarter, and in compliance with the regulations of the Board of Education a re-examination at least once a year.

The total number of schools in England and Wales is approximately 170 for the mentally defective, ninety-two of which are in the London County Council area, and accommodate roughly 9,000 children. The schools for physically defective children in England and Wales number something like seventy, of which London has forty, accommodating 5,000 children. There are about fifteen schools for mentally defective, and six schools for physically defective children in course of erection or just completed.

These non-residential schools are placed under the care of specially selected managers who, by their local knowledge, experience, and influence, are able to give the Council much valuable assistance in many directions. The managers are appointed every three years—the same period as the managers of elementary schools.

Dealing next with the particular needs and points governing the planning of this type of school, Mr. Sutton said that the Board of Education regulations meant that the basis of a school is two class-rooms of twenty, and all above that number can be twenty-five. Every child must receive manual instruction, and it is undesirable that they should receive it in company with children attending elementary schools. It practically means every mentally defective school must have a manual instruction room. The Board of Education now allow this room to be counted as accommodating twelve places extra to the accommodation.

The regulations require 15 square feet of floor area per child in each class-room; this gives class-rooms of 300 square feet and 375 square feet for twenty and twenty-five children respectively.

The hall must contain not less than 3½ square feet of floor area per child, as in elementary schools.

The offices for mentally defective children must be detached from the main building, and therefore there must be separate playgrounds for boys and girls, which playgrounds must have at least 30 square feet of ground area per child. This, excepting where sites are "little gold mines," should not be taken as the minimum; it is stated as the minimum, and for small schools it works out to a surprisingly small area.

The code says "provision must be made for medical inspection at least once a year." In the case of Council schools the Medical Officers visit the schools about once a month, and require a room in which to carry out their examinations. The parents of the children are notified of the date and time the examination will take place, and they may accompany the child for the examination.

I think everyone will admit that there should be a special room, but it means extra cost, and does it warrant the expenditure, considering the limited time it is being used? No special room is provided, and in fact I only know of one school that has a special room, and this school was an adaptation, and here a room suitable was at liberty. The alternatives are to use the teachers' room or turn out a class-room.

The teachers generally object to the examination being carried out in their room, especially as the children and parents are sometimes not too clean.

Turning out a class means having to find accommodation for the class somewhere else for the time being, and this method is adopted in many of the schools.

The doctors do not ask for a special room, as the teachers' room or a class-room appears to suit them. A weighing machine and height measure are supplied to each school, which can easily be put in the teachers' room or class-room. The vision tests, of course, on account of the distance required, must take place in the hall.

I am of opinion that there should be a special room provided for the medical inspection, and a small room is all that is required.

Another point affecting the planning is that all mentally defective children who require it are regularly bathed, and the scheme for cleansing verminous children attending ordinary elementary schools has been as far as practicable applied to the special schools. This scheme provides for the separation of verminous children from other children in school.

The bathrooms provided are large enough to take an ordinary-size bath. Needle or shower baths have been tried, but are not so satisfactory as the ordinary bath. The bath attendant has several children to bathe, and the ordinary bath does not necessitate so much stooping on her part, and allows the child to be immersed or lie in soak, which is sometimes necessary.

I think a small-sized parallel bath, not too wide, on a wooden platform (or tiled platform would be better), raised about a foot to eighteen inches off the floor, would make an ideal arrangement. I advocate a small-size bath, because it is filled and emptied more quickly than an ordinary bath, and does not take so much hot water. The hot water is generally supplied by a geyser.

Another large factor in planning and fitting up these schools—and I now include physically defective schools as well—is that it is found that the children can be taught various forms of manual instruction which enable them to earn a living, or partially so, when they leave school. Therefore we find schools in which tailoring, bootmaking, metal work, handicraft, joinery, chip-carving, are taught. The ordinary routine of these schools differs considerably from the elementary schools, such work as netting and string-work, rug-making, chair-covering, basket-work, &c., being included.

These schools are built for, or divided up for, either junior mixed children, elder girls, or elder boys.

The Education Officer, in his report, states that "the arrangements which have been made for the training of elder mentally defective boys continue to show good results. Experience has proved that a large proportion of the mentally defective cannot earn their living entirely or even partially by any means other than manual labour."

The value of manual instruction introduced into the curriculum of these schools is shown in the after careers of the boys. In many instances the work done by these boys after leaving school compares favourably with that of children from ordinary elementary schools. Of 295 boys who left the elder boys' schools during 1906-10, 90 per cent. were in employment, earning an average weekly wage of 8s. This, I think, proves that there is sufficient ground for building special schools suitable for instruction in manual training work.

From the foregoing remarks you will see that, roughly speaking, architects are tied to certain details in planning. The main points are: The size of class-rooms and hall; there must be a kitchen and scullery, with necessary provision store, &c.; teachers' room and medical-inspection room, and bathroom; special class-rooms for manual instruction.

Dealing next with the schools for physically defective, Mr. Sutton said that in these more actual assistance was required and special desks and invalid couches and chairs provided, and therefore the class-rooms must be larger, and according to the code 18 square feet of floor per child is necessary.

The children have a common entrance, and the ambulance in which the child travels to and from school must have a suitable entrance and space in which to turn round.

The L.C.C. have fifty-five specially constructed horse-drawn ambulances, which are supplemented by thirty-six hired omnibuses or other vehicles. It is estimated that 2,400 children are conveyed to and from school by ambulance or omnibus each school day during the year. The ambulance service costs the Council something like £11,173, which works out at £4 7s. per annum.

The children require feeding in the middle of the day; therefore we have to provide a kitchen, scullery, &c.

The bathroom is not provided, as the children, not being mentally defective, can be taught to keep themselves clean.

In dealing with the consumptive schools, the lecturer mentioned Kensal House School, in which the whole training of the children was a fresh-air one. Every class-room has casement doors and practically all the windows are open, and when the weather permits four classes are held in the open air. The desks are in the playground, and when not in use are covered with tarpaulin. In the playground also is a covered shed for manual work.

"All architects will agree that a school for these children should be built on hospital lines, the floors of impervious materials, no mouldings, no corners—in fact, a school sanatorium.

"The education of mentally and physically defective children is a very serious question, and the great problem is to prevent this class from increasing. But whilst we have them it is only humane that we should educate them and make their life happier and brighter, and their outlook on life as wide as possible, and, gentlemen, I am sure you will agree with me that by erecting schools suitable for the education of this class of children we are making a step in the right direction."

The photographs of various schools thrown upon the screen were fully described, and the special arrangements and planning pointed out.

At the conclusion of the lecture Mr. Eaton (Derby) proposed, and Mr. A. E. Heazell (Nottingham) seconded, a vote of thanks to Mr. Cecil Sutton, which was heartily agreed to.

BIRMINGHAM ARCHITECTURAL ASSOCIATION.

AT a meeting of the Birmingham Architectural Association in Exchange Buildings on Friday evening, Mr. R. Catterson Smith, Director of Art Education for the city of Birmingham, delivered a lecture on "Memory Drawing and the Cultivation of Mental Vision." The President (Mr. G. Salway Nicol) was in the chair.

Mr. Catterson Smith said he was recently reading a report of a lecture given by Mr. Banister Fletcher, and in the lecture he made a very strong point of what he called visualisation—in other words, seeing things in the mind's eye. Mr. Fletcher urged that that was part of the need of education of architects, artists, and people engaged in artistic occupations. About the same time he saw an interview with a craftsman (Mr. Coley, he believed) employed in stone-carving and wood-carving at St. Paul's Cathedral in the last forty years, and he said it was very difficult to get apprentices of any good, and his opinion was that there was some fault in the education of the young craftsman. The fault Mr. Coley mentioned was that they seemed to fail in the power to see in their mind's eye what they were going to do before they did it. The trend of thought at the present day (proceeded the lecturer) lay in the direction of a clearer seeing of things in the mind's eye, or visualisation. It seemed an astonishing thing that it should be necessary to put this forward, because they would think it was the very quintessence of education. Proceeding, he remarked that memory drawing, as generally understood, meant to look at something carefully, and when it was removed, or covered, or out of sight, to draw it as well as one could. That covered a very small part of the method he had developed in the Birmingham School of Art. Indeed, by itself, though good, the practice would not be of vital importance. Da Vinci, Hogarth, and Reynolds recommended memory drawing. Hogarth said: "I thought it . . . unlikely that by pursuing the common method, and copying old drawings, I could ever attain to the power of making new designs, which was my first and greatest ambition. I therefore endeavoured to habituate myself to the exercise of a sort of technical memory; and by repeating in my own mind the parts of which objects were composed, I could by degrees combine and put them down with my pencil. Thus . . . I had a material advantage over my competitors—viz. the early habit I had acquired of retaining in my mind's eye, without coldly copying it on the spot, whatever I intended to imitate." The primary object he (Mr. Catterson Smith) had in view was to develop the faculty of mental picturing, mental imagery, mind's-eye picturing. Drawing from memory was not, in the first place, intended to feed the brain with facts, but as a step towards drawing out of the head. The habit of drawing from memory gave confidence to the student by enabling him to draw when the object was not before him. It gave directness and clearness, as the touch came straight from the mind. It accustomed the mind to seeking associations and similitudes in order to aid retention, and it trained the observation to seize essentials. It was consequently much more educative than the direct copying method, which too often meant vague staring and automatic action. A drawing "out of the head" might be made without a distinct mental image being in the mind, or it might be made from an image evoked in the mind's eye. Even that would be from memory, as the image would be in abeyance while the actual drawing was being made. It was indisputable that they could use the word horse without having an image of the animal present in the mind at the moment of using the word, or they could think of a horse and summon a distinct image of one to the mental retina. There was abundant proof that the power of mental imagery was present in nearly all normal people, and there was proof, too, that it could be developed, like all other faculties, by practice. As Francis Galton wrote, there was abundant evidence that the visualising faculty admitted of being developed by education, and a visual image was the most perfect form of mental representation wherever the shape, position, and relation of objects in space are concerned. Why was it the most perfect form of mental representation? Because the mental image involved more than could be conceived by word or knowledge memory. The mental image of a sparrow, for instance, would contain all the knowledge of its appearance conceivable in words, and much more too delicate for words, just as an optical appearance was more complete than words could communicate without the aid of a mental image. A writer's words roused images in the mind; they were not themselves images. The image was more than the word. Think, too, of the ease with which in the mind's eye they could turn and twist the sparrow into all kinds of actions and positions to suit the fancy. It was, further, the nature of the mental image to reject inessentials, and to be strongly individual. Theoretically, had one perfect control of this wonderful faculty, as well as a gift of invention and a fair amount of technical skill, one would be a first-rate designer. But, practically, the mental vision was not always under complete control, for it was apt to receive additions from submerged memories associated with the matter being visualised, but these unbidden additions might be very precious from the artistic point of view, and the source of interest and mysterious beauty. At this point they might go off at a tangent into the region of speculation, into the realms "beyond the will," to use a phrase of Tennyson's. They need not be alarmed about this "beyond the will" quality. For it was doubtful if any designer knew exactly what would turn up in his mind: he counted a little on inspiration. Ruskin wrote to Wornum, in the celebrated "sporting handkerchief" discussion: "Like all the people I have ever known who had that power (the power of design), you are entirely unconscious of the essential laws by which you work." The mental image was closely allied to fancy and imagination; so closely, indeed, that they were commonly confounded. It would obviously aid the imagination if the power of mental imagery were developed. If they considered the business of art schools to discover and train imaginative artists and designers—not illusionists and copyists—then he thought they must question the wisdom of the common method of teaching drawing by direct copying, and return to the older and classic method of development from the concept, gaining the necessary knowledge of facts from observation, not through direct copying. Egypt, Assyria, Greece, and the mediævals developed through the concept. The direct copying method clogged the mind with inessential facts, and bound up the imagination in a web of unassimilated detail, too often giving the student the idea that art was transcription, and crippling him by demanding too high a standard of imitative skill.

Numerous examples of the mental imagery work of local art students were shown, and, reflecting as they did extraordinary vitality and intense observation, elicited the warm admiration of those present.

Mr. Charles E. Bateman proposed a vote of thanks to the lecturer.

Mr. Holland W. Hobbiss, in seconding, thought that visualisation in architecture would result in the production of more beautiful and individualistic designs.

The President said that in the examples of work Mr. Catterson Smith had shown there was the vitality they found in Japanese and Egyptian work. It would be a very fine thing if in architecture they could get more design and drawing filled with this spontaneous life. He thought there was some scope for the application of the principle in architecture.

The vote of thanks was heartily adopted, and Mr. Catterson Smith's reply brought the proceedings to a close.

VALIDITY OF ARCHITECTS' CERTIFICATE.

THE case of Pollard & Co., Ltd., *v.* Kirk & Kirk, Ltd., again came before Mr. Justice Ridley, sitting without a jury, in the King's Bench Division on Saturday, when his Lordship stated that he had caused the action to be again put in the list for re-hearing, and the parties informed of that fact, as he had rested his decision on a document which he had previously assumed was the contract between the parties; but, thinking over the matter, he was not so sure as to the contract, and therefore he had decided to re-hear the case.

Mr. Talbot appeared for the plaintiffs, and Mr. McCurdy for the defendants.

Mr. Talbot reminded his Lordship that the action was brought by the plaintiffs, shop-front fitters, of Clerkenwell Road, London, to recover from the defendants, builders and contractors, of Exeter Street, Westminster, the sum of £100 5*s.*, being the amount certified for by the architect for work done at premises in the Commercial Road. The amount of the debt owing to plaintiffs was £160 5*s.*, but they had been paid £60, and as the certificate of the architect for the balance due to them—namely, £60—had not been given till after action brought, all that the plaintiffs could now recover was £40, being the balance of the £100 of which the architect had given his certificate at the date of action brought. Defendants, however, had paid into Court the sum of £100.

Evidence having been called for the plaintiffs that they had received the architect's certificate for £100 out of the £160, and that they had been paid £60 on account.

Mr. McCurdy, for the defendants, said his clients were building contractors under a building contract for a considerable sum of money, and the plaintiffs carried out a sub-contract. The point upon which this case turned was that there was no authority, express or implied, contained in the original contract which would enable the architect to increase the provisional sum named in the contract for the shop-front by a pennypiece, or to make his building owner responsible to anybody.

Mr. Talbot: My contract is between my clients, the plaintiffs, and the defendants, and therefore I do not want any contract between the building owner and the defendants.

Mr. McCurdy said notwithstanding this the defendants were quite ready to accept responsibility, provided that the amount was included in one of their (the defendants') certificates, so that they could get the money back from the building owner. That, he submitted, was fair and reasonable. If a builder had to pay on the certificate of the architectt to the sub-contractor, contractors would be in a peculiar position in regard to a large number of items.

His Lordship: I think there is no difference at all as to the certificate. Defendants write to plaintiffs and make a contract, under which they agree to pay the plaintiffs; and they add that they will pay when they get the certificate of the architect. As to the £100, you have got that certificate, and, therefore, I think there is no answer to this claim.

Mr. McCurdy argued that the certificate the defendants were entitled to was one that was binding on the building owner. They had not got that certificate, but only one given the plaintiffs.

His Lordship could not see why the defendants should have any other certificate. Defendants told plaintiffs to go on with the work, and they had got a certificate and they must pay. He was afraid he had decided the case rightly on the last occasion. He thought the defendants' point hopelessly failed. There would be judgment for the plaintiffs for £40 and costs on the High Court scale, to be paid out of the money paid into Court by the defendants. On the first certificate plaintiffs were only entitled to £100, and, having had £60, they now got judgment for the remaining £40 with costs.

ART IN LONDON.

THE ART OF MISS ETHEL L. TANNER IN OIL-COLOURS.

AT the Modern Gallery, New Bond Street, the talented young artist, Miss Ethel Tanner (the daughter of an architect, by the by), has been displaying a few of her canvases depicting horses and dogs and miscellaneous sketches. We may say at once that it is not in the latter that the young lady gives evidence of other than ordinary powers, but her animal studies are full of esprit. Our favourites were "Kitty," "Ferndale Nana," "Wroxham O'Connor," and "Farm Friends," and of almost equal interest were "The King's Highland Pony," "Great Dane's Head," "Clatford King," and "Companions." "Impudence" and "A Thoroughbred" gave further evidences of Miss Tanner's powers. Her architectural studies lack modulation, though she knows how to work from a clean palette. It was a small exhibition, but a pleasant one, for there was such regard to texture, which does not always accompany fidelity of presentation, that our sympathies were aroused and our interest enchained. We shall welcome further shows of Miss Tanner's art.

THE LAW OF DILAPIDATIONS.*

BY GRAHAM MOULD (Associate), Barrister-at-Law.

(Concluded from last week.)

Cozens-Hardy, M.R., referring to the summing up of Tindal, C.J., in *Gutteridge* v. *Munyard*, said:—

I certainly am not prepared to assent to the view that "what the natural operation of time flowing on effects and all that the elements bring about in diminishing the value constitute a loss, which, so far as it results from time and nature falls upon the landlord." That is obviously too wide. . . . When I come to consider what is to happen when by reason of the elements acting on an old building, say, a chimney stack is blown down, is it possible for the tenant to say he is not liable to put that up because the collapse was due merely to age and the elements? I am astonished to hear that such a contention can be raised. So if a tenant under a repairing lease finds that a floor has become so rotten that it cannot be patched up, that it is in such a condition that it cannot bear the weight of human beings or of furniture upon it, can it be said that the tenant is exempt from the liability of replacing that floor and repairing it in the only way in which it can be repaired in order to make the house habitable merely because the state of the floor is due to time and the elements? I am entirely unable to follow that argument. *Proudfoot* v. *Hart* seems to lay

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*** A Paper read at the Surveyors' Institution on January 12.**

down a perfectly sound and intelligible proposition on this point, namely, that in such a case it is the duty of the tenant, if he cannot patch up the floor so as to make it a floor, to replace that which is no longer a floor by something which is a floor.

That being so, it seems to me that we are driven to ask in this particular case, and in every case of this kind, Is what has happened of such a nature that it can fairly be said that the character of the subject-matter of the demise, or part of the demise, in question has been changed? Is it something which goes to the whole, or substantially the whole, or is it simply an injury to a portion, a subsidiary portion, to use Buckley, L.J.'s, phrase, of the demised property? In this case the view taken by the Official Referee and the Divisional Court is the view which commends itself to me, that this portion of the wall, 24 feet in front, is merely a subsidiary portion of the demised premises, the restoration of this wall leaving the rest of the building, which goes back more than 100 feet, untouched. The restoration of this wall will not change the character or nature of the building, and I am unable to say that the question differs in any way from that which we should have had to consider if by reason of the elements and lapse of time, say, some rafters in the roof had become rotten, and a corner of the roof gave way so that the water came in.

Fletcher Moulton, L.J., said:—

. . . What is the meaning of keeping old premises in good condition? I can see no difficulty in deciding the meaning of that. It means that considering that they are old premises they must be kept in good condition as such premises. . . . But we must bear in mind that while the age and the nature of the building can qualify the meaning of the covenant, they never can relieve the lessee from his obligation. If he chooses to undertake to keep in good condition an old house he is bound to do it, whatever be the means necessary for him to employ in so doing. He can never say, "The house was old, so old that it relieved me from my covenant to keep it in good condition." If it was so old that to keep it in good condition would require replacement of part after part until the whole was replaced—if that was necessary—then by entering into a covenant that he would do it, he took on his own back the burden of doing it with all that this duty might entail.

Dealing with the covenant to "keep in good condition," the learned Judge pointed out that those words would have a different meaning according to the nature and age of the house.

Now, of one thing one can be certain; there is a breach of the covenant if the house no longer remains a house. It is quite clear that, however you qualify the meaning of the keeping of a house "in good condition," it implies that there is a house.

Buckley, L.J., said:—

"Repair" and "renew" are not words expressive of a clear contrast. Repair always involves renewal: renewal of a part—of a subordinate part. . . . Repair is restoration by renewal or replacement of subsidiary parts of a whole. Renewal, as distinguished from repair, is reconstruction of the entirety; meaning by the entirety not necessarily the whole but substantially the whole subject-matter under discussion. I agree that if repair of the whole subject-matter has become impossible, a covenant to repair does not carry an obligation to renew or replace. That has been affirmed by *Lister* v. *Lane* and *Wright* v. *Lawson*. But if that which I have said is accurate, it follows that the question of repair is in every case one of degree, and the test is whether the act to be done is one which in substance is the renewal or replacement of defective parts or the renewal or replacement of substantially the whole. . . .

(K) *Measure of Damages.*

The general rule is that where an action for non-repair is brought during the currency of a lease the measure of damages is limited to the depreciation in value of the reversion. (*Doe* v. *Rowlands* [1841], 9 C. & P., 734.)

But whilst this may be the general it is by no means the invariable rule.

In *Conquest* v. *Ebbetts* [1896], A. C., 490, Lord Herschell said:—

I do not think any hard-and-fast rule can be laid down as to the damages which may be recovered by the covenantee during the currency of a lease in respect of the breach of a covenant to keep the demised premises in repair. All the circumstances of the case must be taken into consideration, and the damages must be assessed at such a sum as reasonably represents the damage which the covenantee has sustained by the breach of covenant.

His Lordship then indicated his disagreement with the proposition "that whatever the circumstances and however long the term had to run the damages must necessarily be what it would cost to put the premises into repair," and proceeded:—

On the other hand, I think it would be equally wrong to hold that this could never be the measure of damages, whatever the circumstances and however nearly the term had expired.

The measure of damages for breach of a covenant to keep demised property in repair is not necessarily the same in the case of an underlease as in that of a direct lease with a freehold reversion.

Where the underlessee has notice that there is a superior landlord, the immediate lessor's liability over to that landlord must be taken into account, and the cost of putting the property into repair at the end of the term may properly be considered for that purpose. (*Ebbetts* v. *Conquest* [1895], 2 Ch., 377.)

(L) *Damages for Non-Repair at end of Term.*

Where the tenancy is ended the landlord is entitled to recover by way of damages "such a sum as will put the premises into the state of repair in which the tenant was bound to leave them." (*Joyner* v. *Weeks* [1891], 2 Q. B., 31.)

It is immaterial that the landlord intends to demolish the buildings (*Rawlings* v. *Morgan* [1865], 18 C. B., N.S., 776), or that he has sustained in fact, no damage at all by the breach (*Joyner* v. *Weeks* [1891], 2 Q. B., 31).

The landlord may also recover reasonable compensation for the loss sustained by him through having his house empty while it is being repaired. (*Per* Cave, J., in *Proudfoot* v. *Hart* [1890], 25 Q. B., 47; *Birch* v. *Clifford* [1891], 8 T. L. R., 103.)

(M) *Relief against Forfeiture.*

Where a tenant is under covenant to keep in repair and the lease contains a proviso empowering the landlord to re-enter on breach of such a covenant, regard must be had to the terms of the Conveyancing Acts which prescribe certain steps to be taken by the landlord before he can enforce his right of re-entry. Thus he must—

(*a*) Serve on the lessee a notice specifying the particular breach complained of, and

(*b*) if the breach is capable of remedy requiring the lessee to remedy the breach, and

(*c*) in any case requiring the lessee to make compensation in money for the breach, and

(*d*) the lessee fails within a reasonable time thereafter to remedy the breach, if it is capable of remedy, and to make reasonable compensation, in money, to the satisfaction of the lessor for the breach.

A mere general notice that "you have broken the covenants for repairing the inside and outside" of the demised houses is bad.

It "ought to be such a notice as to enable the tenant to understand with reasonable certainty what it is which he is required to do." . . . "The notice ought to be so distinct as to direct the attention of the tenant to the particular things of which the landlord complains so that the tenant may have an opportunity of remedying them before an action to enforce a forfeiture of the lease is brought against him." (*Fletcher* v. *Nokes* [1897], 1 Ch., 271.)

Whilst a notice containing insufficient particulars is bad, a notice is not invalidated *in toto* merely because the lessor fails to prove all the breaches alleged. (*Pannell* v. *City of London Brewery Company* [1901], 1 Ch., 496.)

But where a notice set out the general covenant to repair contained in a lease, and then set out two further special painting covenants which the lease did not contain at all, and annexed a schedule of work required to be done generally, some at least of which was not properly referable to the general covenant, the whole notice was held invalid. (*Guillemard* v. *Silverthorne* [1908], 99 L. T., 584.)

In the recent case of *Jolly* v. *Brown* (1913), 109 L. T., 210—to which our Secretary, Mr. Goddard, has very kindly drawn my attention—the landlord of six houses served upon the lessee a notice under the Conveyancing Act. The schedule of dilapidations attached to the notice was headed "Schedule of dilapidations allowed to accrue in and about the properties known as Nos. 35, 37, 39, 41, 43, and 45 Menotti Street, Bethnal Green," and dealt with the repairs alleged to be necessary under general headings, such as "roofs," "fronts and backs," "rooms and staircases generally," without (save in two or three instances) referring specifically to the repairs necessary in particular houses. The schedule concluded as follows: "Well and substantially repair, maintain and put the premises and appurtenances in thoroughly good repair and condition and note that the completion of the items mentioned in this schedule does not excuse the execution of other repairs if found necessary." The premises consisted of six small houses containing six rooms each and let to weekly tenants at 11*s.* a week each.

The learned Official Referee held that the notice was insufficient. The Divisional Court held that the decision of the learned Official Referee was wrong, and that th notice was sufficient to give the lessee the materials for ascertaining what breaches of covenant he was alleged to have committed with a view to remedying them, that being the extent of the landlord's obligation under Section 14 (1) of the Conveyancing and Law of Property Act, 1881.

This decision has just been affirmed by the Court of Appeal (Vaughan Williams, L.J., dissenting).

Where no expense or loss has been incurred it is not necessary to demand compensation. "The lessor need not, if he does not want any compensation, ask for it." (*Per* Lord Esher, M.R., in *Lock* v. *Pearce* [1893], 2 Ch., 271.)

By the Conveyancing Act of 1892 "a lessor shall be entitled to recover as a debt due to him from a lessee and in addition to damages (if any) all reasonable costs and expenses properly incurred by the lessor in the employment of a solicitor and surveyor or valuer or otherwise in reference to any breach giving rise to a right of re-entry or forfeiture which (*a*) at the request of the lessee is waived by the lessor by writing under his hand, or (*b*) from which the lessee is relieved under the provisions of the Conveyancing and Law of Property Act, 1881, or of this Act."

The costs and expenses referred to are recoverable only when (*a*) at the request of the lessee the lessor waives the breach by writing, or (*b*) when the lessee is relieved from the forfeiture by reason either of the Act of 1881 or of the Act of 1892. Therefore it follows that if the lessee remedies the breach within the reasonable time limited in the notice, no right of forfeiture arises, and no costs or expenses are recoverable. (*Nind* v. *Nineteenth Century Building Society* [1894], 2 Q. B., 226.) And *a fortiori* no costs or expenses are recoverable when the tenancy is ended and the claim is not to enforce a forfeiture, but merely to recover damages for breach of covenant to repair.

The Conveyancing Acts apply to all leases whether made before or after the said Acts, and have effect notwithstanding any stipulation to the contrary. (44 and 45 Vic., c. 41, s. 14, sub-s. 9.)

(N) *Landlord's Obligation under Express Contract.*

In the case of a covenant by the landlord three main points should be borne in mind:—

(1) That the principles of construction laid down wi reference to lessee's covenants apply equally to landlord's covenants. (*Torrens* v. *Walker* [1906], 2 Ch., 166.)

(2) That where the landlord's covenant refers to the interior of the premises notice of the alleged defect must be given to him before the tenant commences an action. (*Makin* v. *Watkinson* [1870], L. R., 6 Ex., 25.) No such notice would appear to be necessary where the liability of the landlord arises under the Housing, Town Planning, &c., Act, 1909, inasmuch as that Act gives the landlord power to enter and view.

(3) That where the landlord commits a breach of an express contract on his part to repair the interior of a house he is not liable (unless the defect amounts to a nuisance) for injury to a member of the tenant's fam (*Cavalier* v. *Pope* [1906], A. C., 428) or to a third person (*Cameron* v. *Young* [1908], A. C., 176).

VENTILATION OF SEWERS.

THE Main Drainage Committee of the London County Council have presented the following report:—

For a long time past correspondence has taken place between the Council and the Greenwich Metropolitan Borough Council with regard to smells issuing through the surface ventilators of the main sewers in that borough. The length of main sewers under the Council's control in Grenwich is approximately twelve miles and, for the proper ventilation thereof, provision was originally made at ninety-nine points, nearly all in the highway. Owing to complaints as many as sixty-one of these surface ventilators have been entirely closed, thirty have been sealed and connected to ventilating columns or stack pipes, and eight only, including two at penstock houses belonging to the Council, now remain open. Notwithstanding the efforts made by the Council to avoid inconvenience owing to the emanations, the borough council persisted in its demand for the closing of the surface ventilators, and a deputation from the borough council attended before us on February 20 1908 in support of its contention. It was then intimated that if the borough council would provide suitable sites, we should be prepared to recommend the Council to erect ventilating columns. In reply to this suggestion, the borough council furnished a list of five places where the owners would be prepared, upon payment, to allow the Council to erect stack pipes against the walls of houses, but we could not see our way to agree to this proposal. The sewers in Greenwich comprise amongst them some of the largest in London, and ventilation pipes, if provided, require to be of the most ample dimensions and to be erected in the most favourable positions. Our intention was that the borough council should provide sites for shafts on the highways, but this they refused to do on the ground of alleged serious obstruction and inconvenience to the public. The borough council subsequently complained to the Secretary of State for the Home Department and asked him to inquire, under the provisions of section 31 of the Metropolis Management Amendment Act, 1858, into what it stated to be the "failure of the London County Council to comply with its statutory obligations." This section is as follows:—

"It shall be lawful for one of her Majesty's principal Secretaries of State, at his discretion, on representation or complaint made to him of any nuisance committed in execution of any works, or in deodorising any sewage, or in disposing of any sewage or refuse from sewers, or in any other manner under this Act, to cause inquiry to be made into the matter represented or complained of to him, and to direct such prosecution or prosecutions, or to take such other proceedings as he may think fit, in order to secure the prevention or abatement of such nuisance as aforesaid."

Complaints, mostly during hot and dry seasons, are received from various parts of the county, and, in view of the action taken by the Greenwich Metropolitan Borough Council and its bearing on the whole main drainage system, we feel that the matter can no longer be considered from a purely local point of view.

This question is now a very old one, and has received a large amount of attention from the various authorities who have, at one time or another, had control of the main drainage system. Before the year 1850 the sewers of London were almost wholly ventilated by means of the gully gratings in the gutters at the edge of the foot pavements. These gratings were at times the medium of great offence to foot-passengers and to residents in the houses adjacent, and it became necessary to trap the gullies under the gratings. In the year 1849, Mr. Henry Austin, the consulting engineer of the Metropolitan Commissioners of Sewers, recommended that the trapping of the street gullies should only be proceeded with as other means of ventilation were provided, otherwise the sewers would be rendered dangerous, and Sir Joseph (then Mr.) Bazalgette was directed by the Commissioners to make a series of experiments as to ventilating sewers by means of shafts leading from the crown of the sewers to gratings in the centre of the road. These experiments showed that the new system was superior to the old, and it was gradually adopted as the means of ventilating the sewers throughout London.

During the term of office of the Metropolitan Board of Works particular attention was given to this subject. Expert advice was obtained as to the ventilation of the sewers and the deodorisation of the sewage. Many schemes were submitted to the Board, several of which were impracticable or were not generally applicable, while others were tried in various localities with a varying amount of success. Finally, on July 13, 1877, the Board instructed its Special Purposes and Sanitary Committee "to consider and report on all matters which relate to the ventilation of sewers and to act in all matters of administrative detail relating to that subject, which involve no alteration of principle laid down by the Board," and the report of the Committee on the subject was issued on January 12, 1886.

The Committee went exhaustively into the subject from all points of view. They placed themselves in communication with the City Commissioners of Sewers and the vestries and district boards in London with regard to results of the methods of ventilation adopted in connection with the local sewers, and further extended their inquiries into the methods adopted in the principal cities and towns in the

United Kingdom for dealing with sewer gases. The case is fully set out in the Committee's report which was published, and it is not necessary to repeat it at any length. We would, however, shortly refer to their conclusions and recommendations, many of which are still applicable.

Great stress was laid upon the necessity of flushing the sewers, especially during hot and dry weather, and attention called to the assistance which could be rendered by the flushing of house drains.

Next to the effectual cleansing of the sewers, the Committee stated that the most important safeguard against nuisance and danger to health was to be found in the dilution of the gases by a constant and plentiful supply of fresh air by means of effective ventilation. The report stated that the only methods of ventilating sewers that experience had shown to be practicable were:—

(*a*) By surface ventilation, that is to say, by shafts leading from the crown of the sewer to the centre of the road and covered at the road level by open gratings.

(*b*) By large separate shafts, factory chimney shafts and smaller shafts, in all of which fire or other heat is the motive power.

(*c*) By pipes or shafts without heat.

In their conclusions the Committee stated that the complaints against surface ventilators were due to the imperfect manner in which the system had been carried out, the ventilators being deficient both in size and number, and it was suggested that this deficiency should be remedied.

It was found that the amount of ventilation afforded by large special ventilating shafts was in no way commensurate with their cost and the provision of such shafts, with or without heat, or the connection of sewers with factory shafts could only be carried out in very exceptional circumstances. The use of pipes of large section and constructed with bends and without angles was approved in addition to, and not in substitution for, surface ventilators wherever consent can be obtained to such pipe ventilators being fixed.

The use of charcoal or other appliances for deodorising gases in sewer ventilators was found to be undesirable, as they did much harm by obstructing ventilation, were costly and troublesome, and quite unsuitable for use over a large system. A system of deodorisation by the use of chemicals during the summer months in the main sewers was advocated, and the local authorities were requested to adopt a similar system for local sewers, and to use their influence to induce householders to use suitable deodorising agents during periods of high temperature and drought.

Further recommendations were made that stringent measures should be taken for preventing road sweepings passing into the sewers and for preventing the discharge from manufactories and other places of improper substances, such as chemical refuse, trade filth, hot water or steam, and also that manufacturers and others discharging refuse into the sewers should be compelled to treat their waste water so that it should have no greater deoxidising power than average household sewage.

When in 1889 the Council succeeded the Metropolitan Board of Works this matter engaged its attention in turn. To minimise certain evils in the sewers, the Council, by the London County Council (General Powers) Act, 1894, obtained powers prohibiting the discharge knowingly into the sewers of any solid matter, mud or refuse, except such as is contained in ordinary house sewage, and also prohibiting the discharge of chemical and trade refuse and of waste steam, condensing or heated water or other liquid of a higher temperature than 110 degrees Fahrenheit. Owing to the risk of danger and injury to persons entering the sewers and to the structure of the sewers, the Council on December 20, 1898, made an order under the provisions of this Act prohibiting the discharge into any sewer, either directly or indirectly, of petroleum and its products or any liquid or substance liable to give off inflammable vapour. Notwithstanding the stringent precautions taken to carry out this order, some inflammable substances, principally petrol, are found in the sewers.

In the year 1898, in accordance with the instructions of the Main Drainage Committee, Sir Alexander Binnie, then the chief engineer to the Council, invited the engineers and surveyors of the various vestries and district boards in the county to a conference on the subject of the ventilation of sewers, with a view to some uniform system being adopted, if possible, for dealing with complaints of emanations from gratings connected with either local or main sewers. The discussion on the subject resulted in the following resolutions being passed, viz.:—

(1) That the closing of sewer ventilators in response to complaints increases the general evil, the diminution of which is to be attained by the multiplication of the ventilators at regular frequent intervals.

(2) That in connection with any interceptor hereafter fixed on a main house drain, it is advisable to carry up a ventilating pipe from the sewer side of the interceptor up the front, side or back of the house, to the satisfaction of the local sanitary authority, and that the outlet drain from the interceptor shall not be flap-trapped in sewer unless required by the local sanitary authority.

(3) That pipe ventilators up buildings, or otherwise, where possible should always be adopted, in addition to surface ventilation.

The second resolution did not meet with the general acceptance of the local authorities, and no further action was taken upon it.

Before proceeding further, it may be advisable to describe the system or systems at present in use for the ventilation of the London sewers. In the first place there are the surface ventilators in the centre of roads which were adopted by the Metropolitan Commissioners of Sewers, and which have been provided on all the main sewers constructed in recent years. In a very few special cases ventilating shafts of large dimensions have been built at considerable expense on the Council's sewers. On the north side there are two ventilating shafts 70 feet high above the ground line, one each in Stepney and Poplar, built in 1894 and 1900 respectively. These two shafts cost about £2,000, and were constructed on the advice of Sir Alexander Binnie, after serious complaints had been made of smells escaping from some of the main sewers in Limehouse. His opinion was that if one or two large brick shafts, say 4 feet in diameter, were erected at suitable points, this line of sewers would not be difficult to ventilate, as, unlike ordinary sewers, it was very deep and there were few connections with it. On the south side of the river there are three brick chimneys in use, all in Deptford, in two of which coke fires are always kept burning. There are, in addition, two wrought-iron chimneys specially constructed, both situated in Bermondsey, in one of which a coke fire is also always kept burning. The brick chimneys are about 30, 50 and 75 feet high respectively, and the wrought-iron chimneys average about 55 feet in height.

The use of pipe ventilators has also been tried to remove cause of complaint. Pipe ventilators are in two forms—*i.e.* ventilating columns which are erected on the public way, and ventilating stack pipes which are attached to houses. In the use of this method of ventilation, it is necessary to obtain permission of the local authority or of the owners of the premises as the case may be, and this consent is not always readily forthcoming.

The following table shows the present position of affairs with regard to ventilators under the Council's control:—

North side of the river.	*Open.*	*Closed.*
Surface ventilators	1,396	1,490
Ventilating columns	85	3
,, stack-pipes	76	—
Lamp ventilators	13	—
Brick chimneys	2	—
Total	1,572	1,493
South side of the river.	*Open.*	*Closed.*
Surface ventilators	554	481
Ventilating columns	119	—
,, stack-pipes ...	291	—
Lamp ventilators	5	—
Brick chimneys	3	—
Iron ,, ...	2	—
Mechanical apparatus ...	4	—
Total	978	481

When the Council came into office the districts included in the metropolitan main drainage system comprised the County of London, Hornsey, Acton (part) and Beckenham (part). The out-county districts now draining into the metropolitan system, in addition to those above-mentioned, are Chiswick (part), Acton, Willesden, Wood-green, Tottenham, West Ham and East Ham (part), Norwood (part), Penge and Mitcham (part), and the total area drained by the system is 95,099 acres (148¼ square miles), with a population of 5,334,731 (1911). The increase of buildings in these areas and in the suburban districts of the county itself has thrown greatly increased responsibilities upon the Council. In 1893, the first occasion on which reliable statistics were obtained, the quantity of sewage delivered at the outfalls was 67,583,250,000 gallons compared with

(*Continued on page* 129.)

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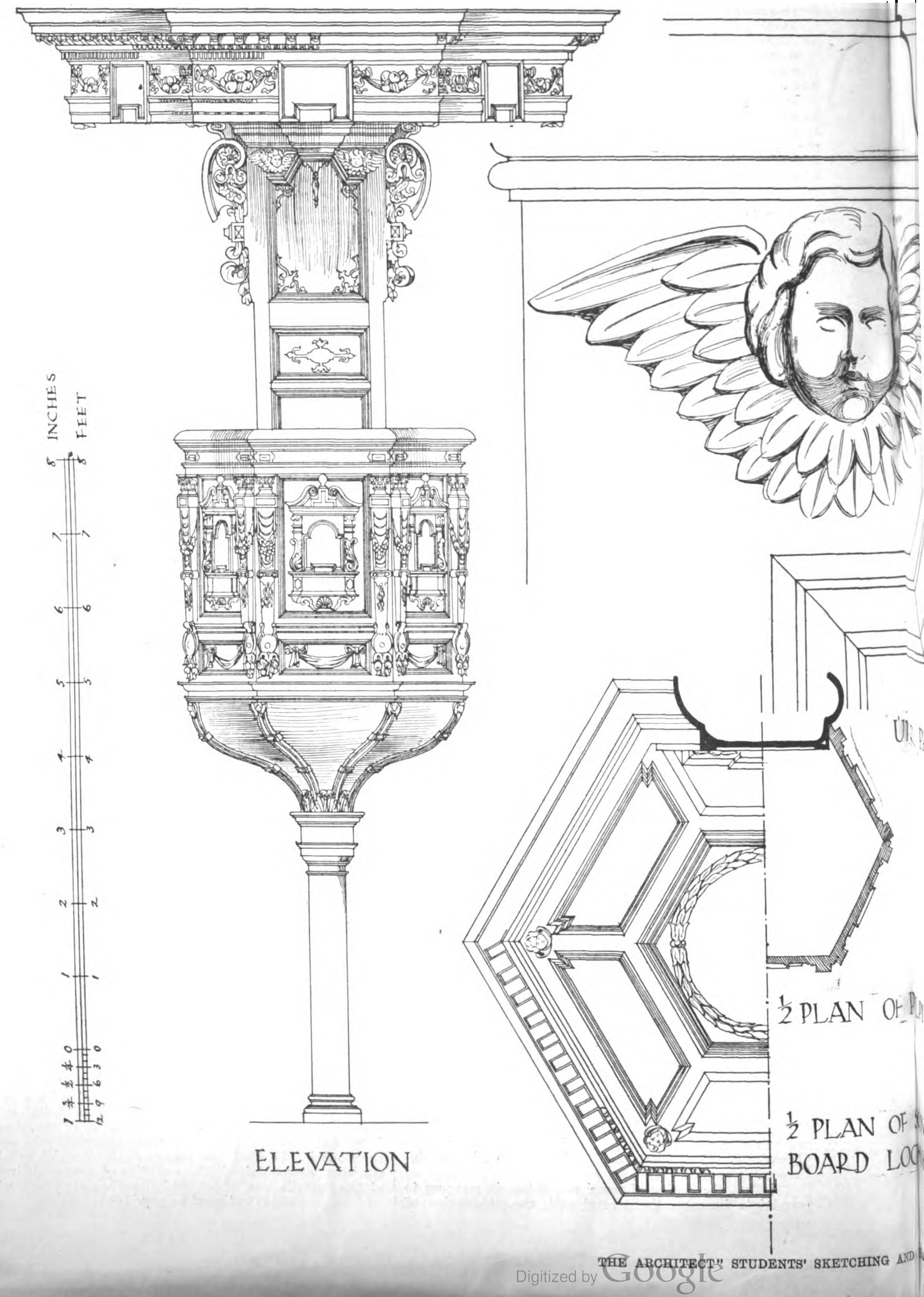
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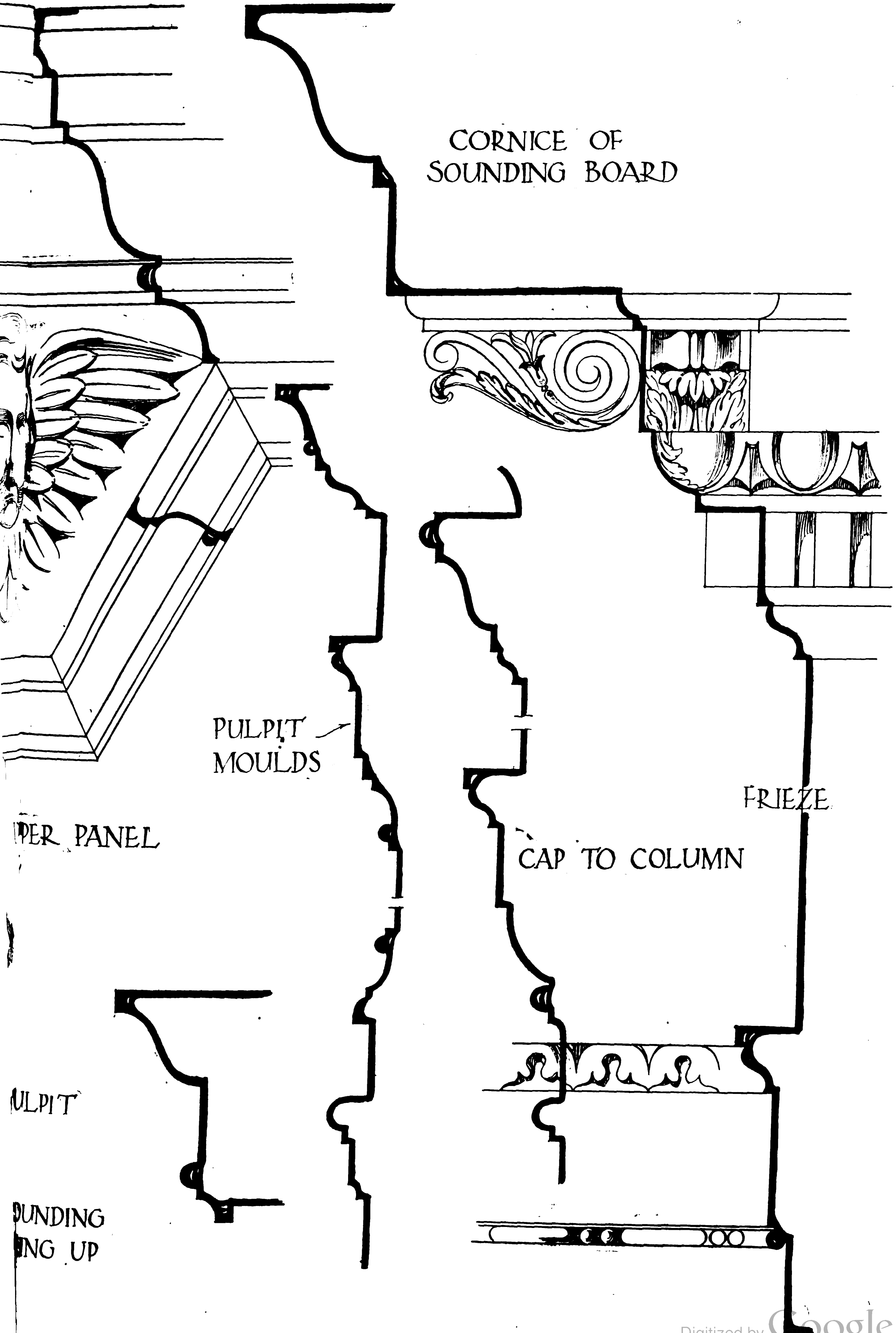
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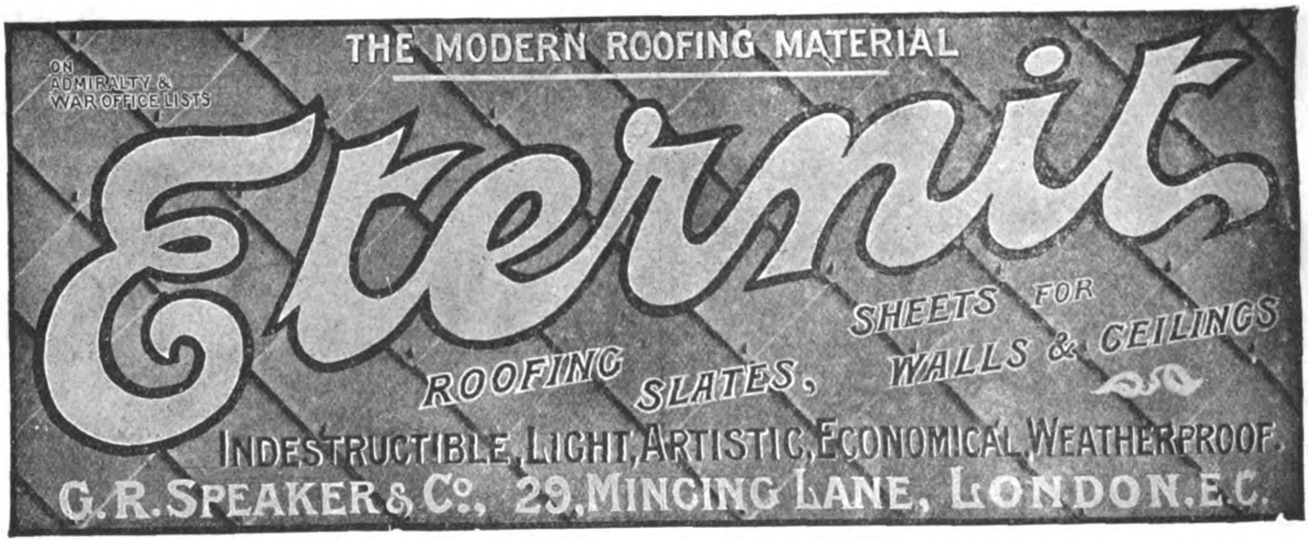
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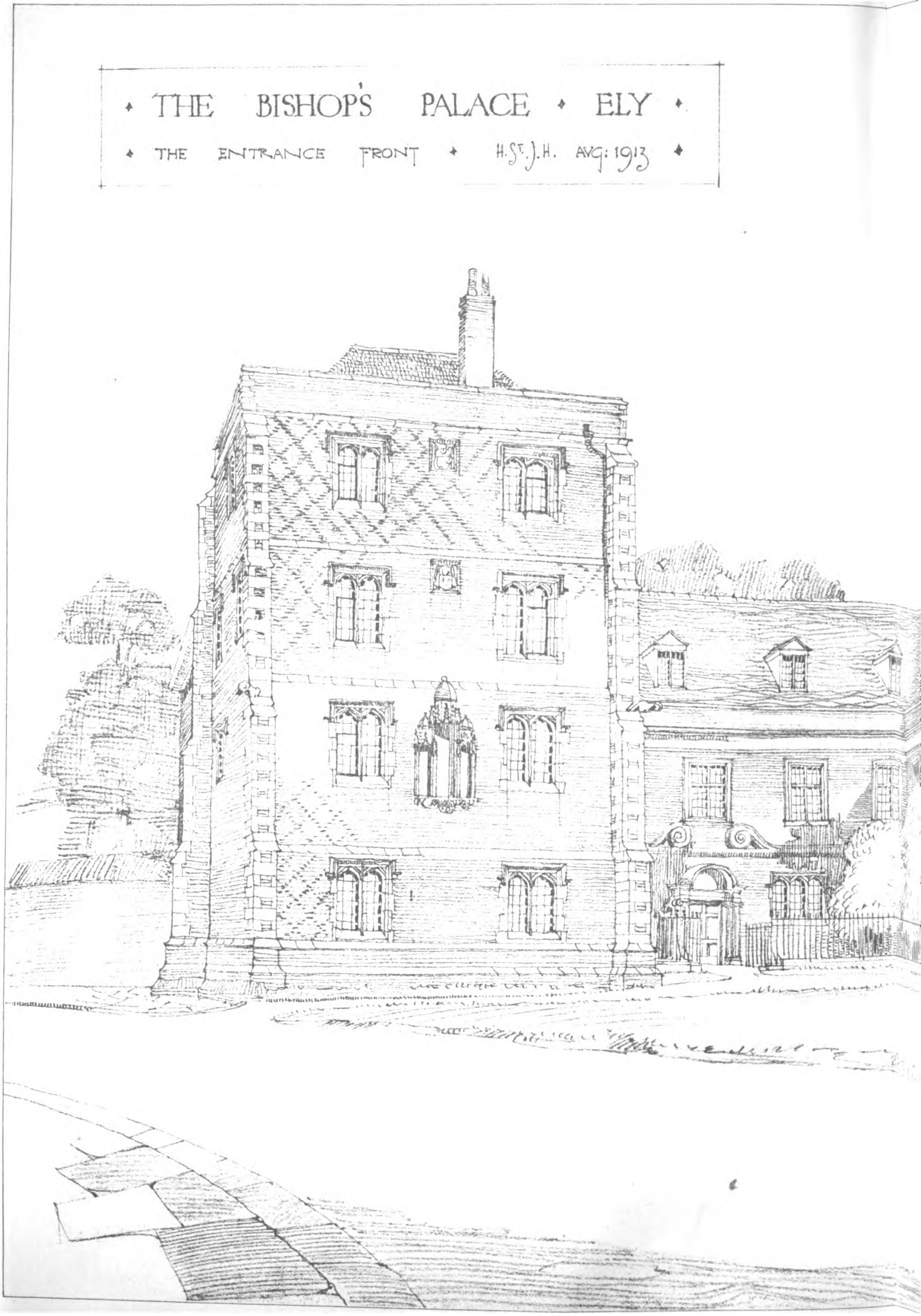
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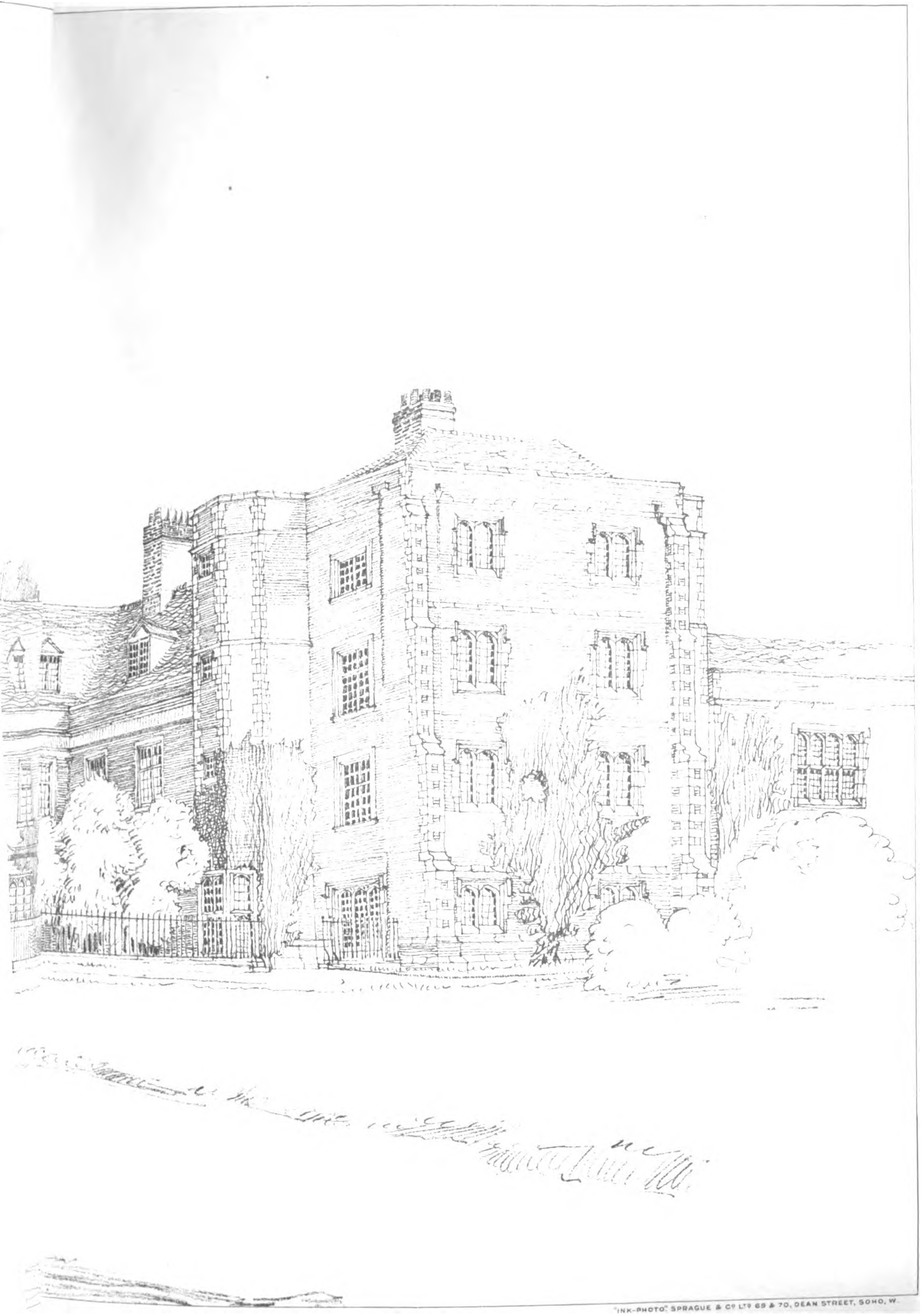

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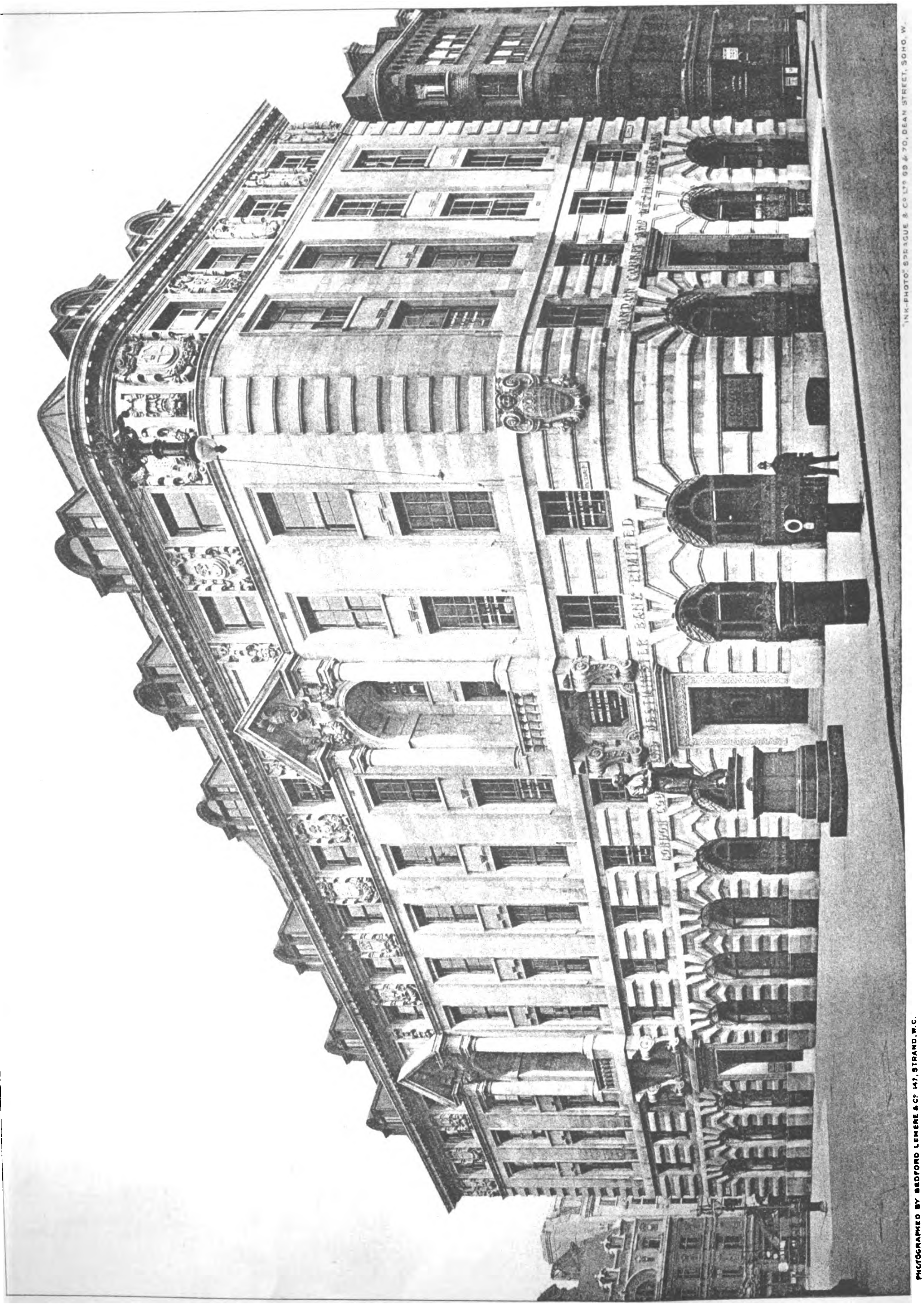

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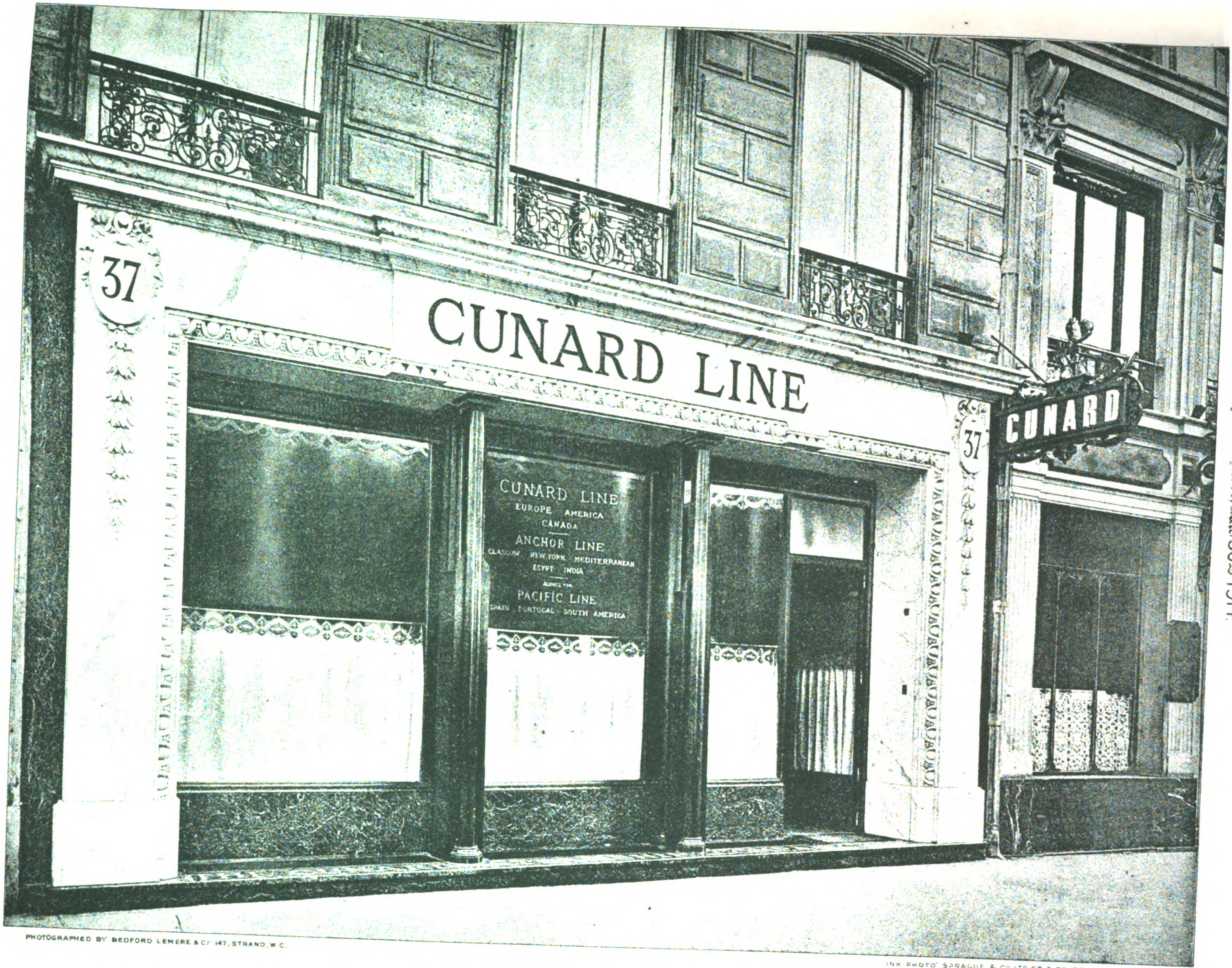
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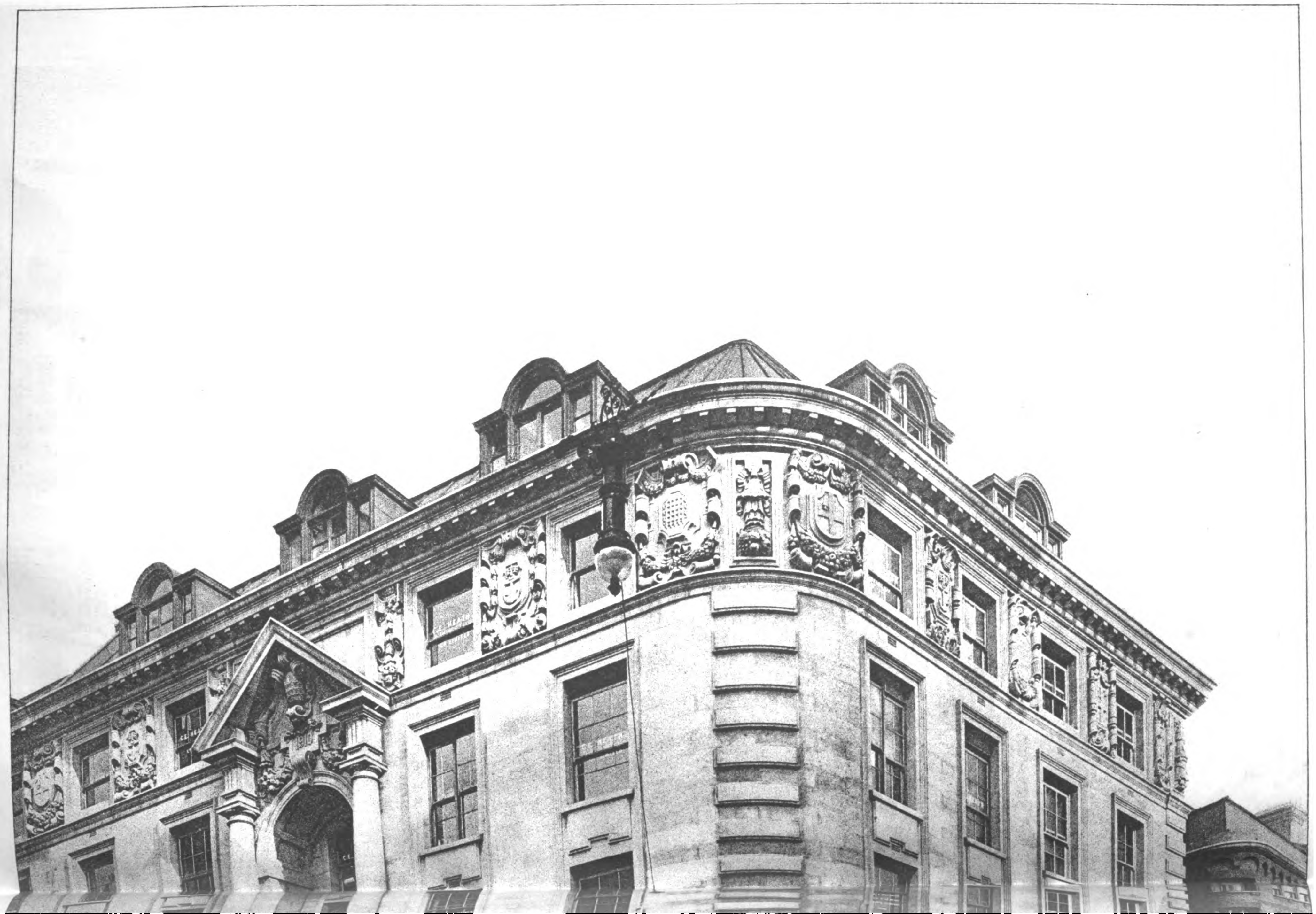
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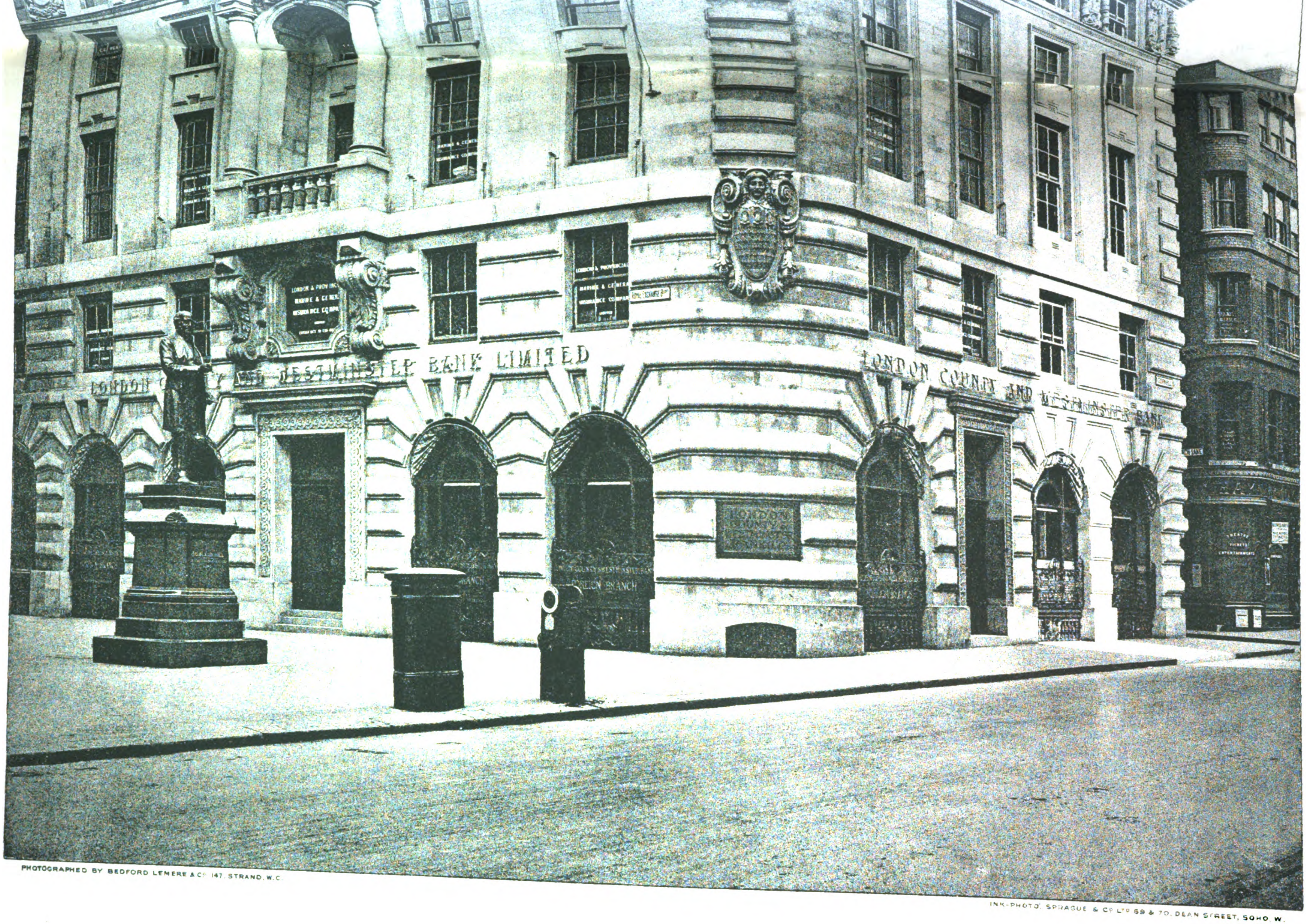
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111,776,471,861 gallons in 1912. Large though the increase of population has been, it is not proportionate to the increase in the quantity of sewage, and the large amount of trade refuse discharged into the sewers complicates the question of ventilation. To deal with the increased flow of sewage many miles of new sewers have been constructed during recent years.

In connection with the complaints of smell from the sewer ventilators, the alleged danger to public health has been repeatedly advanced, and this aspect of the question has throughout received careful attention. Numerous experiments have been conducted both in connection with the sewer air and the sewage. In 1892-3 two reports on "Sewer Air Investigations," by Mr. J. Parry Laws, F.I.C., were submitted to the Main Drainage Committee and were published. It is stated in the first of these reports that one of the positive results of the experiments showed that the micro-organisms in the sewer air are related to the micro-organisms in the air outside and not to the micro-organisms of the sewage. A later report on the "Result of Investigations of the Micro-Organisms of Sewage," by Mr. J. Parry Laws and Dr. F. W. Andrews, contains the following statement:—

"In the conclusions to Part I. of this report we endeavoured to show that sewer air has no power of taking up bacteria from the sewage with which it is in contact. A strong argument in favour of this view is the fact that the very organisms which are most abundant in sewage are precisely those which are absent from sewer air."

That an unpleasant smell may and does arise from the sewers is admitted, and indeed it is impossible to eliminate all smell in work of this nature. It is stated that the existence of odour is *prima facie* evidence of the presence of abnormal chemical substances in the air rising from the sewers, and that, when the odour is unpleasant, it is reasonable to infer that the sense of disgust or nausea produced is an inherited or acquired characteristic of a protective nature. On the other hand, it does not appear that, in numerous series of experiments, some of which were conducted for the Council, any toxic substance or group of substances, with the rare exception of sulphuretted hydrogen, has been isolated from such volumes of sewer air as have been submitted to examination. It may, however, be contended that this only shows that the quantities are minute, and not necessarily either absent or present only in physiologically negligible amounts.

The health of the men working in the sewers is a matter which comes under our immediate observation. In 1906-7 the Departmental Committee on Compensation for Industrial Diseases sat, and evidence relating to the health of the men employed in the main drainage service was given by the chief engineer of the Council (Mr. (now Sir) Maurice Fitzmaurice, C.M.G.) and Dr. R. J. (now Sir John) Collie, the Council's medical examiner. Statistics relating to the sickness, including accidents among the staff of the main drainage service for several years, were submitted. These statistics embraced the whole of the working staff then employed, and for comparative purposes were divided in three classes, *i.e.* (1) those employed on the sludge vessels; (2) those employed above ground; (3) those employed below ground. The last class comprises those men working in the sewers and in the precipitation channels at the outfalls. The figures showed very small difference, and the proportion of days' absence to the total working days did not in any case work out to 2 per cent. The evidence suggested that this staff, so far as they suffered from illnesses of any special type, were liable to those associated with damp rather than those due to specific micro-organisms present in sewage. There is a general belief that the presence of sewer air in houses is associated with conditions of anæmia and ill-health, though this belief can scarcely be said to rest on well authenticated facts or experimental evidence. On the whole, it cannot be said that danger to health due to sewer emanations is non-existent, but if such danger does exist it is probably very small, and we should hesitate to advise the expenditure of large sums of money to meet a point so problematical.

In connection with this matter there are other considerations besides that of inconvenience to the public owing to smells. The lives of the men working in the sewers and the safety of the sewers are involved. If the sewer emanations are injurious to health, there is no doubt but that the continued inhalation of sewer gases in unventilated sewers would be destructive of life. It is absolutely essential therefore that sufficient ventilation be provided to allow men to work in the sewers without danger of being overcome by these gases, and that the ventilation should be sufficient to allow an easy exit for air or gas when a sudden rainfall brings a large volume of water into the sewer; otherwise, not only is there risk of gratings being forced up in the street, but there is also risk of traps on the house drains becoming unsealed and damage being caused to the interceptors.

The problem, therefore, to be solved is first, to provide a sufficient number of inlets for fresh air, to properly distribute them, and to ensure that they will not act as outlets; and secondly, to provide outlets that will extract foul air without creating a nuisance, and so to distribute them that all parts of the sewer will be ventilated.

The closing of any particular surface ventilator intensifies the smell at adjacent gratings which are left open and leads to complaints which otherwise might not have been made. Were all the surface ventilator gratings unsealed doubtless a better condition of affairs would obtain, and such a course might receive support in some boroughs. We fear, however, that the difficulty of obtaining general support is too great for such a course to be advocated.

The suggestion previously put forward that every house-owner should provide a ventilating pipe on the sewer side of the interceptor on the house drain, or as an alternative, and partly for other reasons than ventilation, that the interceptor itself should be abolished, would undoubtedly go a long way towards the solution of the ventilation problem, as a system of shafts which would serve both as inlets and outlets would thereby be established. The question of the use of intercepting traps in house drains was considered by a Departmental Committee appointed on October 15, 1908, by the President of the Local Government Board. The report of this Committee, issued in 1912, sets out in detail the disadvantages and advantages of this system, but contains no definite recommendation, although the chief conclusion appears to be that the intercepting trap is not necessary. The matter is still under consideration, and we therefore can make no suggestion with regard thereto at the present time.

The Council has from time to time erected tall ventilating columns on the highways when permission has been obtained from the metropolitan borough council concerned. These columns allow the air from the sewers to escape, and a supply of fresh air finds its way into the sewers through surface gratings which must be retained for this purpose and, to a small degree, by way of house connections. The use of a large number of ventilating columns would diminish the emanations through the surface gratings, but under certain weather conditions the circulation of the air becomes reversed and the surface ventilators would act as outlets. The usual height of the columns put up by the Council is 42 feet, this being the greatest height which can safely be erected without support. This is lower than many buildings, and complaints would undoubtedly arise of smell entering the upper windows. The cost of erecting one of these columns has in the past varied from £80 to £100, and the wholesale erection of such columns would mean a very large expenditure. In order that the columns may be effective, they must be erected in the most suitable positions as nearly over the top of the sewer as possible. This points to their erection in the centre of the roads or on the footways, and we can hardly suppose that the erection of columns in many of the principal thoroughfares would long remain unchallenged.

As we have before pointed out in certain cases, use has been made of stack-pipes against houses. The cost of one of these is about £25, and apart from the difficulty of securing permission from property owners to attach them to houses, they are not very efficient. They can only be of small section, must be at some distance from the sewer—necessitating a length of connecting pipe—and in many cases have to be made with bends and elbows so as to clear projections on the building. All these things tend to impair their efficiency as ventilators.

The difficulty concerning emanations from sewers is not confined to London, and in many provincial towns the question has been under consideration. In Manchester in particular, the Corporation has conducted a costly series of experiments extending over a period of four or five years. The experiments were made with various mechanical contrivances, and the report of the Corporation, issued in 1906, stated that none of the systems under consideration could be recommended for use in the Manchester sewers. In view of these experiments, there appears to be little to be learned in London by further experiments on these lines.

The Council will realise that the problem which lies before it is one of extraordinary difficulty, and that there is at present no scheme for sewer ventilation which can be considered satisfactory from all points of view. We are unable

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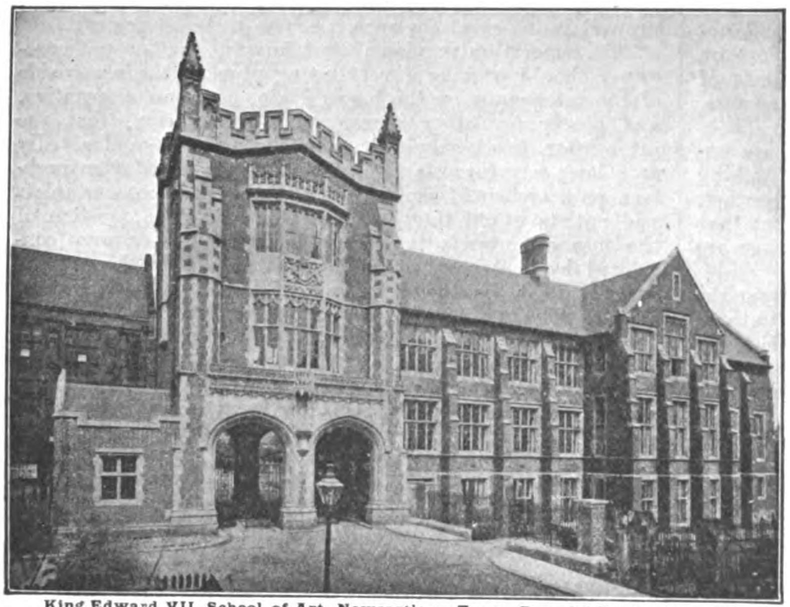

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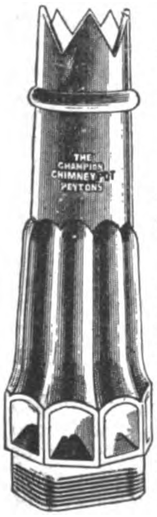

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from the facts which have been placed before us, and which we now submit, to advise any departure from the existing practice of considering each case of complaint on its merits, and, if it is possible, to remedy the defect. It may even be necessary, in the interests of the Council or its employees, to re-open some of the surface gratings which have been temporarily closed. We recommend:—

"That a copy of the foregoing report of the Main Drainage Committee with regard to the ventilation of sewers in London be forwarded to the Secretary of State for the Home Department."

BUILDING PROGRESS IN THE PROVINCES AND SUBURBS.

A LIST OF WORKS PROJECTED OR COMMENCED.

(N.B.—Local Authorities, architects, and others are invited to submit full particulars for insertion in this weekly list. Where districts are not entered against names of architects and builders the address is as a rule local.)

ENGLAND.

BUCKINGHAMSHIRE.

Beaconsfield.—Thirty-four working-class cottages. Mr. H. Sargeant, architect, Baring Road.

Marlow-on-Thames.—Borlase School Chapel (£1,250). Mr. W. Forsyth, F.R.I.B.A., architect, 309 Oxford Street, London, W. Messrs. W. & T. Sellman, contractors.

CHESHIRE.

Altrincham.—Council School, Manchester Road. Mr. H. Beswick, F.R.I.B.A., County architect, Newgate Street, Chester.

Ellesmere Port.—Cottages, Enfield Road: alterations for the Cheshire Public House Trust Company.

Macclesfield.—Nurses' Home, &c.: completion for the Board of Guardians. Messrs. Roylance & Co., Ltd., contractors, Waters Green.

CORNWALL.

Heamoor.—Bungalow, for Mr. A. C. Jenkin.

DERBYSHIRE.

Chesterfield.—Church, Derby Road (£3,000).

Derby.—Sunday School, for the Gordon Street Mission.

Marlpool.—All Saints' Clergy House and Sunday Schools (£2,000).

DEVON.

Buckland Brewer.—Two cottages, for Bideford R.D.C. (£500).

Exmouth.—R.C. Church, Raddon Stile Lane. Messrs. Scoles & Raymond, architects.

Hartland.—Four cottages (£1,000), for Bideford R.D.C.; also

Parkham.—Two cottages (£500); also

Woolsery.—Two cottages (£500).

DURHAM.

Bankhead.—House, for Mr. J. Fisher.

Leamside.—Nine houses, near Cocken Terrace, for Mr. T. Storey.

Newbottle.—House, Maidstone Terrace, for Messrs. Liddell Bros.

New Herrington.—Five houses, for Mr. G. Cairns.

Sunderland.—Parish Hall and Vicarage, St. Andrew's, Roker.

Washington.—Forty-seven houses, for Chester-le-Street R.D.C. Council surveyor.

ESSEX.

Chelmsford.—Council School, Bradford Street.

Dagenham.—Two houses, Bennett's Castle Lane, for the Ecclesiastical Commissioners.

Thaxted.—Hall for the Baptist community.

Upminster.—House, Hall Lane, for Messrs. W. P. Griggs & Co., Ltd.

GLOUCESTERSHIRE.

Bristol.—Sunday School, St. Michael and All Angels', Bishopston: extension (£2,000).

HAMPSHIRE.

Alton.—Cripples' Hospital: Queen Alexandra's Nurses' Home.

Emsworth.—Sewage Pumping Station.

Portsmouth.—Infectious Diseases Hospital, Milton: extension (£28,000). Borough engineer.

HERTFORDSHIRE.

Bishop Stortford.—Congregational Sunday School, Water Lane.

Hitchin.—Proposed Isolation Hospital (£6,000).

KENT.

Sevenoaks Weald.—Council School: Head teacher's house. Mr. W. H. Robinson, Education Committee's architect, Caxton House, Westminster, London, S.W.

LANCASHIRE

Atherton.—Cotton-spinning Mill (for 118,000 spindles), for the Laburnum Spinning Company.

Manchester.—Church, Gill Street, Moston (£8,650).

LEICESTERSHIRE.

Leicester.—Tuberculosis Sanatorium, Gilroes (£12,400).

LINCOLNSHIRE.

Bicker.—Cottages, for Boston R.D.C.

Crowland.—Wesleyan Church.

Kirton and Sutterton.—Cottages, for Boston R.D.C.

Stixwould.—House: additions, for Mr. W. Brummitt.

NORFOLK.

Cromer.—Cinema, Hans Place, for Mr. Troller.

NORTHAMPTONSHIRE.

Rushden.—Housing scheme. Council surveyor.

NORTHUMBERLAND.

Hexham.—Cinema Theatre, Battle Hill. Mr. G. R. Smith, A.R.I.B.A., architect, 67 King Street, South Shields.

Newcastle-on-Tyne.—Armstrong College: Hostel for women students (£4,000).

Seaton Delaval.—Drill Hall, for the Tynemouth R.G.A. Messrs. Graham & Hill, architects, 6 Eldon Square, Newcastle-on-Tyne; also

West Moor.—Drill Hall, for 5th Batt. Northumberland Fusiliers.

Willington Quay.—Works extension, for Messrs. R. Hood, Haggie & Son, Ltd.

NOTTINGHAMSHIRE.

Nottingham.—Booth Memorial Hall

Parish Hall and Boys' Brigade Headquarters, Alfred Street North (£5,000).

SOMERSET.

Bath.—St. Luke's Church Schools: additions (£1,500).

Bridgwater.—Hospital: additions and alterations. Messrs. Samson & Colthurst, A.R.I.B.A., architects, 51 High Street.

Yetminster.—Church Hall. Mr. Ponting, architect.

STAFFORDSHIRE.

Lichfield.—Union Offices, Trent Valley Road.

Stoke-on-Trent.—Wesleyan Mission: new headquarters, High Street (£12,000).

SUFFOLK.

Felixstowe.—Theatre, York and Hamilton Roads. Mr. H. R. Hooper, A.R.I.B.A., architect, Commercial Union Buildings, Princes Street, Ipswich.

Lowestoft.—Town Hall: additions and alterations (£900). Council surveyor.

SURREY.

Croydon.—Picture Palace, Addiscombe. Messrs. Grenall & Cole, architects, 11 King Street, Manchester.

Walton-on-Thames.—Central Council School, West Grove Estate (£7,000).

SUSSEX.

Bexhill-on-Sea.—Isolation Hospital, St. Mary's Road (£6,000). Council surveyor.

Midhurst.—Twenty cottages, off Station Road, for Lord Cowdray.

Pulborough.—Branch offices, for the London County and Westminster Bank. Messrs. Wheeler & Godman, R.I.B.A., architects, Bank Chambers, Horsham.

WARWICKSHIRE.

Birmingham.—Police Sub-Station, Selly Oak: alteration (£800).

Variety Theatre, Suffolk Street, for the Variety Theatres Controlling Company.

Leamington.—Royal Midland Counties Home for Incurables: addition (£7,500).

Little Heath.—Council School: enlargement (£6,750).

Nuneaton.—Girls' High School: enlargement (£1,500).

New station for L.N.W. Railway (£30,000).

WORCESTERSHIRE.

Dudley.—Training College: men's hostel (£8,500).

Evesham.—Business premises, High Street. Messrs. Dicks & Waldron, architects, 1 Market Place.

YORKSHIRE.

Bradley Wood.—Tuberculosis Sanatorium and Children's Tuberculosis Hospital.

Brighouse.—St. Paul's Sunday Schools (£1,700).

Cudworth.—Hotel, Pontefract Road, for Messrs. Whitworth, Son & Nephew.

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YORKSHIRE—*continued.*

Rotherham.—Y.M.C.A. premises. Mr. J. E. Knight, architect, 33 College Street.

Scarborough.—St. Columba Church (for 600 sittings) (£7,000).

South Kirkby.—Fifty-six houses, for the South Kirkby, Featherstone, and Hemsworth Collieries, Ltd. Messrs. Garside & Pennington, architects, Roper Gate, Pontefract (also at Castleford).

Thurlstone.—P.M. Church and School. Mr. J. Broadbent (of Shepley), contractor (£1,060).

York.—Workhouse: extension (£4,300).

WALES.

Cardiff.—St. Luke's Church, Canton: completion. Mr. G. E. Halliday, F.R.I.B.A., architect, 9 Quay Street.

Llanelly.—Public Hall and Institute, for the Tumble Public Hall and Institute Company, Ltd. Messrs. W. Griffiths & Son, architects, Falcon Chambers.

Mold Junction.—School: special subjects Centre. Mr. S. Evans, County architect.

Mostyn.—Houses, for Holywell R.D.C.

SCOTLAND.

Dunfermline.—Block of houses, Townhill Road, for Mr. R. Hannan.

Glasgow.—Erskine (new) Church, Landside.
Open-air School, Burnside.

Gourock.—Premises, corner of Bath Street and Kempock Place, for the National Bank of Scotland.

Greenock.—Sub-station, Port Glasgow, for the Greenock Corporation Electricity Department.

Leith.—Office buildings, Tower Place: addition, for the Dock Commission.
Motor Garage, 86 Tennant Street, for Mr. W. Sorley.

Methil.—Proposed new Parish church.

IRELAND.

Athlone.—Court House. Mr. A. E. Joyce and Mr. C. Mulvaney (County surveyors of Westmeath and Roscommon respectively).

Ballymoney (Co. Antrim).—Technical School. Messrs. Hobart & Heron, architects, 120 and 121 Scottish Provident Buildings, Donegall Square West, Belfast.

Newcastle (Co. Dublin).—Church. Mr. H. T. O'Rourke, architect, 23 Bachelor's Walk, Dublin.

PATENT SPECIFICATIONS PUBLISHED JANUARY 22, 1914.

Selected and abridged by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

No. 13,054. Jan. 3, 1913.—P. B. Jagger, Carlton Studios, Carlton Vale, Maida Vale, W. Method of and means for joining pipes, particularly of concrete.

3. Jan. 1, 1913.—E. E. Brown, Denvilles, Havant, Hants. Means for warming buildings.

89. Jan. 1, 1913.—Dated under International Convention Jan. 2, 1912. M. F. J. Veauvy, La Source, Honfleur (Seine Inferieure), France. Timber framework for buildings.

228. Jan. 3, 1913.—Allan McKechnie, 371 Earlsfield Road, Earlsfield, S.W. Paints.

1,458. March 18, 1913.—J. J. Ingham, Middle Asphalt Works, Valley Road, Bradford. Bituminous compositions.

2,271. Jan. 28, 1913.—Benedikt Rutti, Balsthal, Solothurn, Switzerland. Fasteners for French windows.

2,926. Feb. 4, 1913.—Robert Boyle, 64 Holborn Viaduct. Ventilating apparatus.

3,599. Feb. 12, 1913.—J. E. Beckett, 1 Alexandra Road, St. John's Road, N.W. Window-balancing devices and the like.

3,603. Feb. 12, 1913.—A. R. Thom, 5 Marchmont Terrace, Langside, Glasgow. Vacuum cleaning apparatus.

4,827. Feb. 25, 1913.—G. E. Montagnon, 83 Malpas Road, Brockley, and Frederick Atkinson, 49 Queen Victoria Street, E.C. Expanded metal sheets.

6,463. March 15, 1913.—Walter Kaempfe, Grossenhain, Saxony. Process for the manufacture of oil varnish substitutes from animal oils.

7,346. Sept. 29, 1913.—Thomas Midgeley, 12 Cross Bank Street, Todmorden, York. Expansible planks.

Any of the above specifications may be obtained from J. D. Roots & Co.

THE MAZDA "HALF-WATT" LAMP.

A VERY important development in incandescent electric-lamp manufacture was announced by the British Thomson-Houston Co., Ltd., last August. This announcement referred to the "Half-Watt" tungsten lamp, which was then exhibited for the first time in this country at the Company's London offices, Mazda House, 77 Upper Thames Street, E.C.

The Company now state that they have completely standardised the production of these lamps at their Rugby factory, and are in a position to accept orders for them.

Below is a brief tabulation of the chief features of the Mazda "Half-Watt" lamp, and a list of the sizes in which it is obtainable:—

Efficiency: ½-watt per candle, or 2 candles per watt.

Average Useful Life: 800 to 1,000 hours.

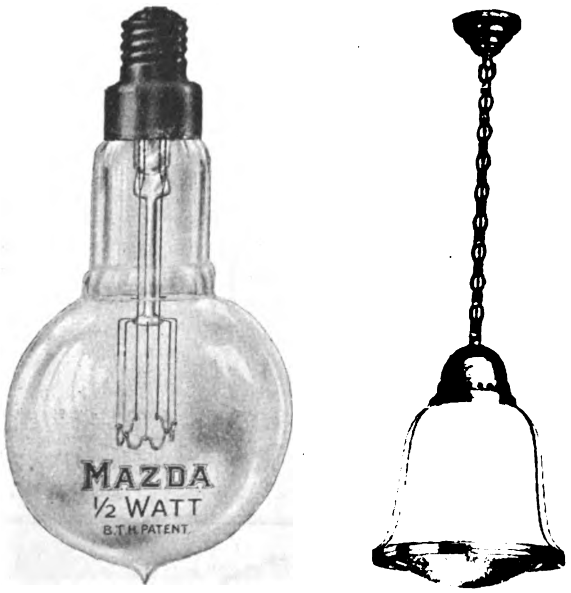
Quality of Light: Owing to the high temperature of the filament the light is remarkably white in colour, and approximates very closely to daylight.

Intrinsic Brilliancy: This is given as eight times as high as that of the ordinary tungsten lamp. For interior lighting this high intrinsic brilliancy renders it essential that Mazda "Half-Watt" lamps should be enclosed in diffusing spheres or bowls, in order that the light may be agreeably diffused and effectively distributed.

Sizes: The table below shows the voltages and sizes in which the Mazda "Half-Watt" lamp is available:—

Volts.	Watts.	Approx. British C.-P.
50–65	300	600
	500	1,000
100–130	500	1,000
	1,000	2,000
	1,500	3,000
200–260	1,000	2,000
	1,500	3,000

This advance in lamp efficiency was only rendered possible by the invention of the drawn-wire tungsten filament, which was also a Mazda development, and is covered by fundamental patents owned by the British Thomson-Houston Co., Ltd. These two developments, the drawn-wire filament and the "Half-Watt" lamp, are evidence that the name "Mazda" really is, as claimed, the embodiment of all that is latest and best in incandescent lamp manufacture.



THE MAZDA "HALF-WATT" LAMP.
Fitting for Use with Mazda "Half-Watt" Lamps in Shops, &c.

In connection with the Mazda "Half-Watt" lamp the British Thomson-Houston Co. have developed a range of special fittings. For outdoor purposes—the lighting of streets, shop fronts, and open spaces—some very effective weatherproof lanterns, fitted with reflectors and opalescent globes, have been designed.

For interior lighting the Company have designed a number of fittings equipped with their well-known Alba and Voluria glassware. The Mazda "Half-Watt" lamp is, of course, specially adapted to indirect and semi-indirect lighting, which systems of lighting were initiated and developed by the British Thomson-Houston Co. The new lamp is expected to very considerably increase the vogue of these forms of illumination.

Further information and prices of Mazda "Half-Watt" lamps and fittings will be found in the British Thomson-Houston Co.'s price list No. 11,000.

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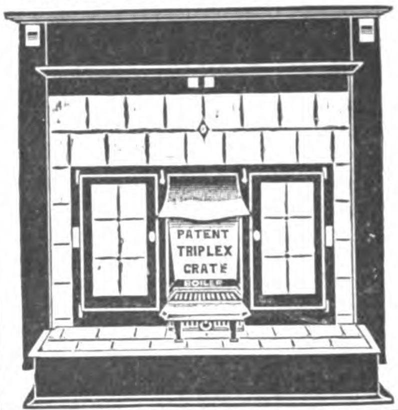

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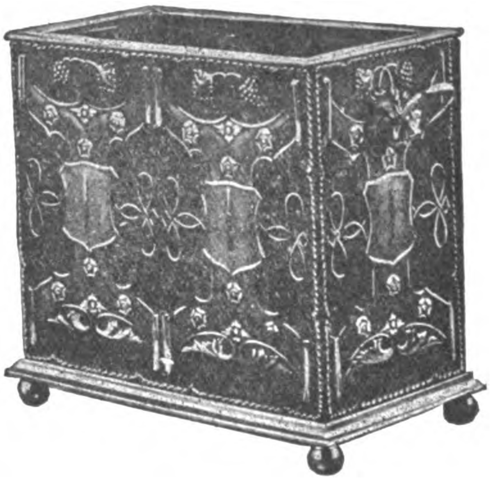

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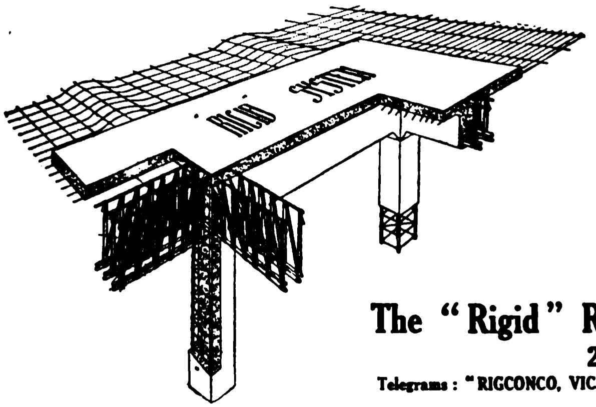

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THE ARCHITECT

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FORTHCOMING EVENTS.

Monday, February 9.

Royal Institute of British Architects : President's Address to Students and Presentation of Prizes, at 8 P.M.

Liverpool Architectural Society : First Members' Meeting, an Exhibition of Lantern Slides by Mr. J. Watson Cabré, at 6 P.M.

Surveyors' Institution : Paper, entitled "Notes on Value as Applied to Real Estate," by Mr. Frank W. Hunt, F.S.I., at 8 P.M.

Tuesday, February 10.

Royal Sanitary Institute : Paper, entitled "The King Edward VII. Welsh National Memorial Sanatorium, Pont-y-Wal, South Wales," by Mr. Edwin T. Hall, F.R.I.B.A., at 7.30 P.M.

Wednesday, February 11.

Northern Architectural Association : Paper on "Architectural Education," illustrated by Mr. Bradshaw's Prix de Rome and other drawings, by Professor Reilly, M.A., F.R.I.B.A., at 7.30 P.M.

Manchester Society of Architects : Paper, entitled "Sources of Architectural Inspiration," by Mr. L. B. Budden, M.A., A.R.I.B.A., at 6.30 P.M.

Thursday, February 12.

Society of Architects : Paper, entitled Buildings for Small Holdings," by Mr. A. Ainsworth Hunt, M.S.A., at 8 P.M.

THE WORK OF E. L. LUTYENS.

A ONE-MAN show is admittedly a severe test of the ability of an artist and particularly of the measure of advancement he is making, or has made, in his powers of conception and expression, since it inevitably shows along what lines his development has proceeded and whether that development is still in progress, or whether it is no longer expanding but has become stereotyped. In the case of many, we might almost say the majority, there comes a period when individuality has given place to mannerism. There is no longer any freshness of idea, but merely a wearisome reiteration of changes worked upon an old theme. In the volume* that has been produced by Mr. Lawrence Weaver describing the Houses and Gardens designed by Mr. E. L. Lutyens, we have what, in the case of an architect, corresponds to the one-man show of a gallery in the case of a painter. We have brought before us characteristic examples of the work of Mr. Lutyens from the commencement of his practice until the present time. It is evident that this work has not yet become stereotyped, nor need we perhaps scarcely expect it to be so, since Mr. Lutyens has attained the eminent position that he has reached at a comparatively early age.

It is not every architect who would be willing to allow his work to be illustrated in so complete and thorough a fashion as is done in the volume produced by Mr. Lawrence Weaver. Many decline to allow any of their work to be illustrated, on the ground that it may be copied by unskilful admirers, but Mr. Lutyens has no need or reason for taking such a view. One of his most striking characteristics is that he impresses on his work a personal quality that is unmistakable and that eludes the copyist. It is easy to follow his use of small bricks, crazy pavements, rough cast, whitewash, black walls and ceilings, and other experiments in the use of material, but it is another matter altogether to equal the handling which these materials are given by Mr. Lutyens. There is always in his work an element of unexpectedness, something that shows personality of imagination and that keen enjoyment of his work that is always present in the productions of a real artist. One can never imagine Mr. Lutyens being tired or bored with the solutions of the problems that have come to his hands in the designing of houses and gardens.

Perhaps one cause of the versatility and freshness displayed in the designs of Mr. Lutyens is the fact that he is untrammelled by too much schooling and education. There are few architects to-day who have had less training than Mr. Lutyens before he commenced to design charming houses at the early age of twenty-one. Mr. Weaver tells us that Mr. Lutyens' preparation for the profession of an architect consisted of two years' study at South Kensington, and a year in the office of Messrs. Ernest George & Peto. One might feel disposed to quote his productions as an example of the futility of the modern academic system of training architects.

Having before us the chronological series of buildings designed by Mr. Lutyens, it is interesting to notice that his earliest efforts aimed particularly at picturesqueness. We see, too, that at first the external form appears to have dominated the internal arrangement, that the elevations were designed before the plans. It is only after some years of development that plan and elevation are clearly conceived together in the imagination of the artist. The early designs also show a delight in tricks of planning, which later developed into interesting and charming conceptions of internal effect.

Throughout his whole career, and even in his earliest efforts, Mr. Lutyens appears to have realised the repose of the horizontal line. Even in his picturesque manner long, unbroken ridges are to be found as often as the opportunity allowed. This feeling inevitably led to an appreciation of the merits of classical regularity—we had almost written formality—but there is ever, in his most classical efforts, a sense of humour, a play of fancy that is almost whimsical, which entirely prevents any feeling of cold formality in Mr. Lutyens' designs, and always introduces that element of unexpectedness and freshness, to which we have already referred.

Mr. Lutyens is, of course, recognised as the chief apostle of the doctrine that a home consists of a house and a garden and is incomplete without this outdoor component, and garden design accordingly takes a great part in the illustrations of Mr. Lutyens' work that are placed before us in this book. As Mr. Weaver points out, this characteristic doubtless owes some of its force to the happy association of the young architect in an early period of his career with Miss Jekyll. Not only is Mr. Lutyens the chief apostle of architectural garden

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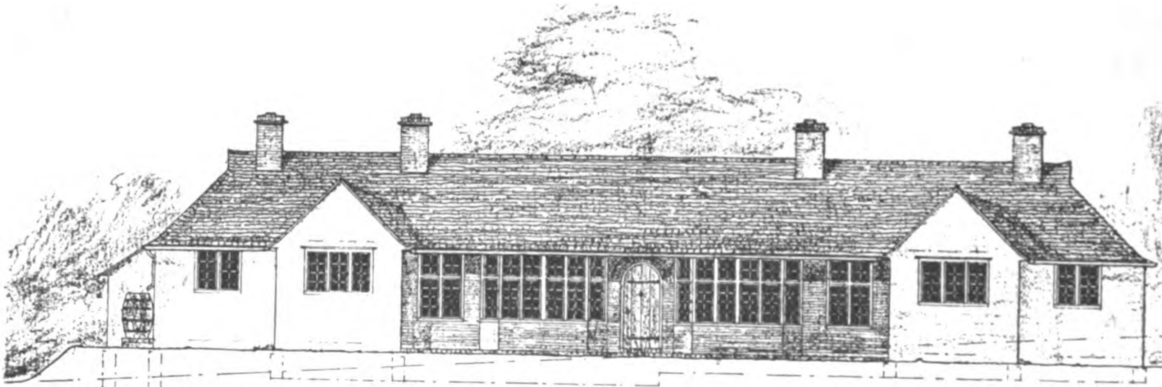
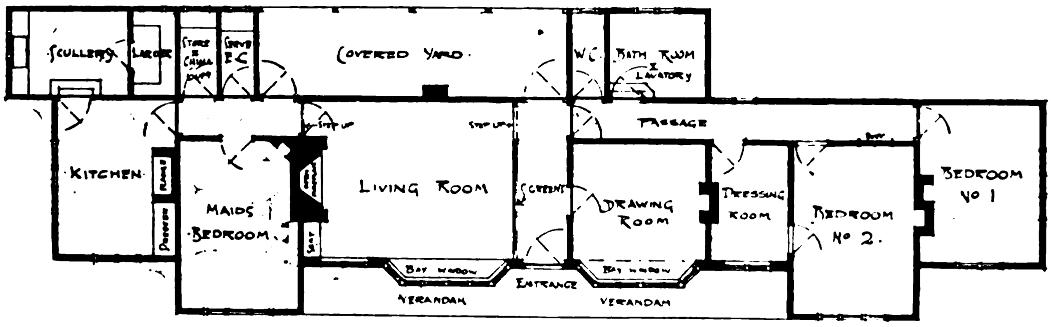
* *Houses and Gardens by E. L. Lutyens.* Described and criticised by Lawrence Weaver. (London: *Country Life*, 20 Tavistock Street, Covent Garden, W.C. George Newnes, Ltd., 8-11 Southampton Street, Strand, W.C. 25*s.* net.)



·FRONT · ELEVATION·



PLAN

A BUNGALOW AT ELLESBORO', BUCKS., FOR REV. A. F. G. FLETCHER.—Messrs. WEBB & SUTTON, Architects.

design but he is the protagonist of water as an element in a garden. The purist in hygiene would perhaps hardly approve of this universal employment of water so close to a house, and would talk of damp, rheumatism, and mosquitos.

Some of the most interesting of Mr. Lutyens' work is that connected with the treatment of old buildings, for which he has had to carry out repairs or enlargement, and one can well imagine the delight with which he attacked the problem of the combination of the two old half-timber houses of Great Dixter and Benenden. Lindisfarne Castle must also have been the occasion of infinite delight.

Mr. Lutyens is fortunate in having his work described by so enthusiastic an admirer and, on the whole, so able a critic as Mr. Lawrence Weaver. One might almost compare them to Dr. Johnson and Boswell, and it would be easy to imagine that the descriptions savour of fulsome flattery, only ostensibly modified by the admission of patent weaknesses in the idol's early career. It would scarcely be possible in reviewing the work of such a versatile artist and bold experimenter as Mr. Lutyens not to find that he has on occasion made mistakes, and we certainly cannot agree with Mr. Weaver in the praise that he bestows upon the external treatment of Heathcote, Ilkley, nor can we altogether unreservedly admire the whole of the work done at the Hampstead Garden Suburb. There is a restlessness and a superfluity of obvious endeavour about the exterior of Heathcote, which appear to us quite out of keeping with the experiment in Palladianism that was obviously the intention of Mr. Lutyens, and the exterior is, in our opinion, only saved from failure by the admirable treatment of the garden and accessories. The design is a remarkable example of the effect upon Mr. Lutyens' work of that absence of training that we have before remarked. It would scarcely be possible for any architect who had been trained after the model of the Ecole des Beaux-Arts to produce such a design as Heathcote. For the interior, which, unfortunately, is known to us only by photographs, we have nothing but praise and admiration. It need hardly be said that the exquisite manner in which modern architecture has been presented to us in the volumes of *Country Life* is maintained in the present volume and goes very far to produce in us that feeling of enthusiastic admiration which the presentment of Mr. Lutyens' creations here affords.

BUNGALOW AT ELLESBORO', BUCKS.

THIS building was erected in 1912 upon a hillside facing the Aylesbury Valley. A two-storeyed building was originally contemplated, but this type was abandoned owing to the very elevated position of the site, rendering a higher building very conspicuous. The walls are constructed of Messrs. Collier's 4½ inch hollow terra cotta building blocks, rough-casted on the exterior. The building cost £668 to erect.

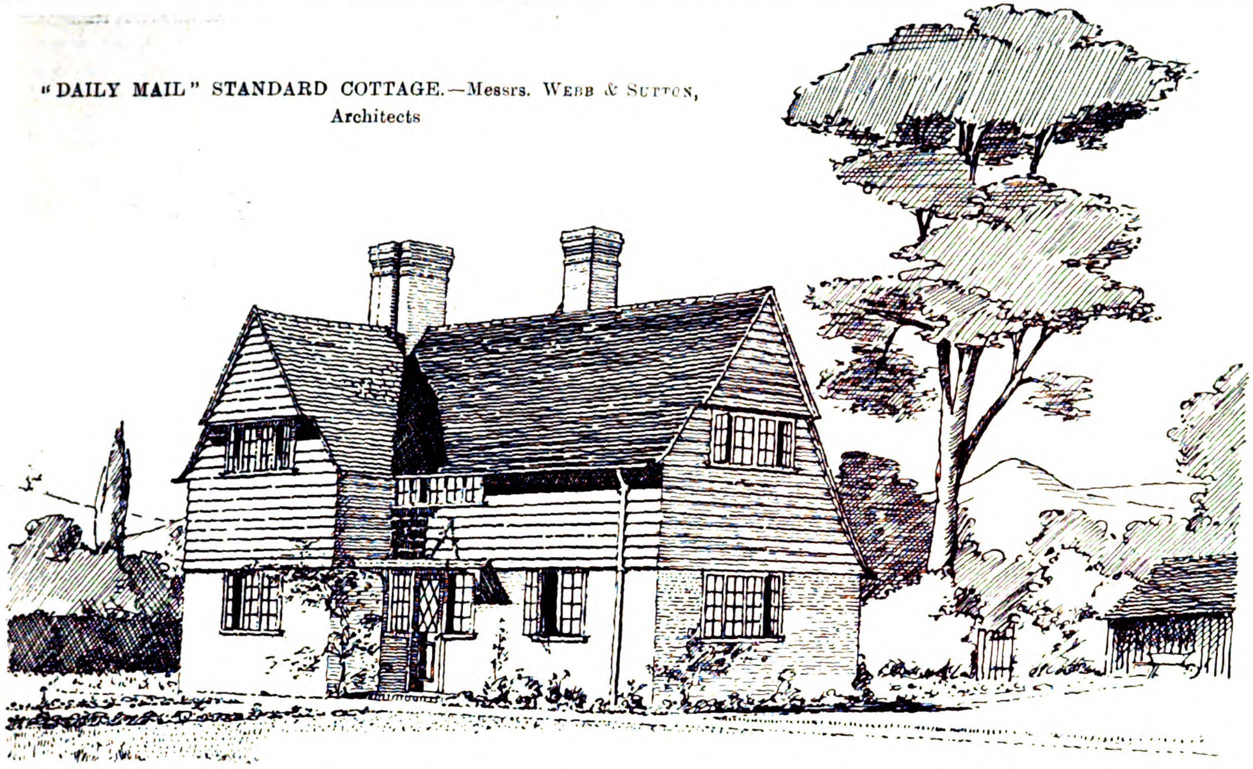
"DAILY MAIL" STANDARD COTTAGE.

THIS design was submitted in a competition, the objects of which were (to quote from the conditions): "To obtain really well designed and substantial cottages at cheaper rates than at present . . . containing suitable accommodation and offices for a family with three bedrooms."

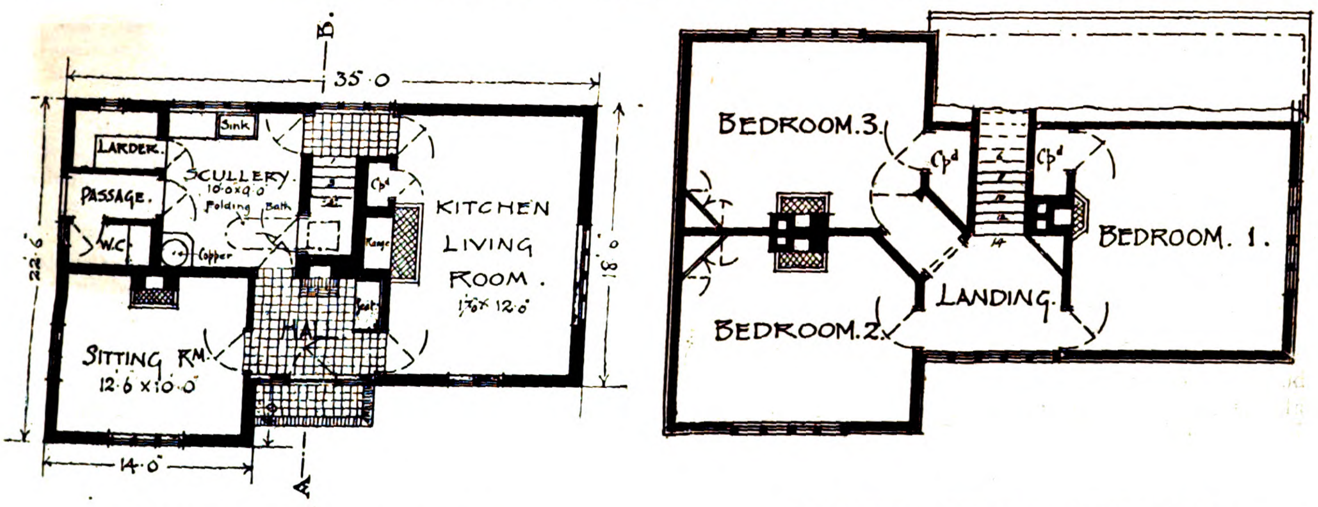
NOTES AND COMMENTS.

ARCHÆOLOGY in Ireland does not appear to be flourishing at present, for the Royal Society of Antiquaries of Ireland is forced to consider the advisability of discontinuing the quarterly publication of papers and having in its stead a yearly issue, whilst the number of members has suffered a serious diminution during the past year. A correspondent in the *Irish Times* suggests that the *Journal* of the Society should be made more attractive by the insertion of articles in a lighter vein than the "dry-as-dust" profound antiquarian discourses that now find a place in its pages. Doubtless this is an age that requires snippets, tit-bits, and cinemas, but has not the Irish character always been one that delights in effervescent gaiety? There must, we think, be some other reason for the present-day absence in that country of those who value membership of a Society of Antiquaries. An editorial comment speaks of the duty of certain individuals to support the Society, and says there are in the country many

"DAILY MAIL" STANDARD COTTAGE.—Messrs. Webb & Sutton, Architects



· PERSPECTIVE · VIEW · FROM · THE · SOUTH ·



· GROUND · FLOOR · PLAN ·

· ATTIC · FLOOR · PLAN ·

educated men and women who have very little to do. Such people are particularly common in the suburbs of Dublin. They ought to be able to devote time to the cultivation of the arts and of the semi-artistic sciences. Even if they do not care to give up much of their leisure, they might at least manage to subscribe a few shillings towards the publication of journals such as that of the Society of Antiquaries. It is the absolute duty of the kind of people who are not obliged to work for their living to support such institutions as the Society of Antiquaries. They need never even attend a meeting themselves. In a large number of cases, however, they would find that their duty soon became a pleasure.

From the *Carlisle Journal* we learn that Mr. Raymond E. Crowther, a member of the Carlisle and County Photographic Society, has made an important discovery in regard to the photographing of public buildings, churches, and architectural subjects generally, in which the windows are to form part of the picture. Hitherto photographers have found that if the exposure is given of sufficient length to bring out the details of the room, the details of the windows are lost and there is reversal of the image in the window itself. Backing of the plate has been adopted to prevent halation, but it does not prevent reversal.

Mr. Crowther has now discovered a chemical preparation in which the ordinary photographic plate is bathed, or the solution can be brushed on, before the exposure. After prolonged exposure the resultant negative, in which there is a window, will be found to retain all the details of the window curtains, lead lights, &c., and even the landscape itself is retained. Practical tests have been made on such bathed plates with satisfactory results.

Pinhole photography has the advantages that are claimed for Mr. Crowther's discovery, but the lengthy exposure required will render the new method, if reliable, a welcome addition to the photographer's resources.

The decoration of public buildings by art students is in every way commendable. It affords a legitimate ambition and impetus for the young artist to study mural decoration. It educates the public to comprehend that no building is complete without colour and opens their eyes to the fact that art does not mean only easel pictures. Work of this nature has a definite value in raising the standard among the advanced students of art. It brings them into touch with public life and gives to their studies a definite object, in so far as their work is placed for public appreciation.

Hence we welcome the fact that six decorative panels, the work of students of the Glasgow School of Art, have been unveiled in Possilpark District Library by Lord Provost Stevenson. About a year ago an arrangement was made between the Corporation and the management of the School of Art under which pupils of the school were to be afforded an opportunity of decorating a number of panels of the reading room of the library, the subjects and sketches to be approved by the Corporation.

For the work twenty students were at first selected, and they were asked to send in sketches. A number of students were then picked out and were asked to take part in a second competition. The final designs for the panels were done by three lady students and three men students. The first of these panels was by Miss Alma Assefrey. The subject chosen was "Astronomy." The sketch showed two figures, one representing ancient and the other modern astronomy. The figures were high above the earth, and behind their heads were seen constellations. Low down on the panel the mountain tops appeared. The second panel, which represented "Geography," was by Mr. Archibald M'Glashan, who was the Haldane student for the year. The design represented an old man, typical of the subject, sitting with a book open on his knee. At his back was a huge terrestrial globe, and on his right hand stood a female figure holding in her hand a map. Mr. Tom Gentleman was the designer of the third panel, which represented "Poetry." It showed two youthful figures—a man and a woman. The former was seated upon a bench with a scroll of poetry spread before him, and from this he was reading, while his companion was leaning in a listening attitude. The fourth panel, which was by Mr. Robertson Weir, depicted "Commerce." The figure to the left of the design was that of an Eastern merchant, and before him were displayed his wares consisting of goods from the Orient. Near by stood a female figure typifying the buying woman. The two were holding a rich silk fabric, and the merchant with his left arm outspread was exercising his persuasive gifts on an evidently willing buyer. These four panels were first commissioned, and afterwards two smaller ones were ordered. One of the latter was executed by Miss Josephine Cameron, and was entitled "Science." It showed a female figure hooded in black, symbolical of the mystery which attended her pursuit. In her hand she held a test tube and was in the act of conducting an experiment. Behind her was the caduceus of Minerva, the goddess of science. The other smaller panel was by Miss Helen Johnson. It represented the single figure of "Art" bearing in her arms a cast of the "Victory of Samothrace," the original of which was in the Louvre. All the figures in the panels were practically of life size.

A deputation from the association recently formed to press upon the public and the authorities the importance of more vigorous action towards the betterment of Manchester has been received by the Lord Mayor. The chief aim of the deputation was to set forth the need for wood or some other less noisy form of pavement than granite around the public elementary schools, but occasion was taken by one of the speakers to complain of the general character of Manchester streets.

The Lord Mayor would not admit that Manchester was conspicuous for its dirt and noise, but asserted that it really stood foremost among the great cities and towns of the kingdom in the matter of pavements and general cleanliness, and that the Education Committee and the Highways Committee were anxious to do much more than they had done in the direction advocated by the deputation, but when the time came for arranging the estimates the cry was for economy and "keep down the rates."

The thirty-seventh annual report of the Cockburn Association for preserving the amenity of Edinburgh and its neighbourhood at the outset refers to the successful efforts made to stop the construction of steps leading from the Mound to the United Free Assembly Hall. The Council also express satisfaction that Mr. Bruce Home's drawings have been acquired by the Town Council. Among the other paragraphs are the following:—

CHARLOTTE SQUARE.

Information having reached the secretary that the proprietors of No. 1 Charlotte Square proposed making alterations in their house which would involve throwing out a dormer window in the pyramid roof behind the sphinx, representations were at once made to them, and were most courteously received, with the result that the proposal was abandoned, and the north side of Charlotte Square retains its beautiful features unblemished.

HUNTLY HOUSE.

During April the above house was exposed for sale. Backed by very substantial offers of assistance, the Association put in an offer of £1,200. The owner is resident in Australia, and the Council regret to say that he refused their offer, and the possibility of saving this fine old house is accordingly indefinitely postponed.

COMPETITION NEWS.

BARNSLEY.—Members of the Society of Architects are notified that some of the conditions of Barnsley Town Hall competition are not in accordance with the regulations adopted by the Society, and they are requested to refrain from competing until the conditions have been amended.

ITALY.—H.M. Vice-Consul at Venice (Mr. G. Campbell) reports that an Italian company has arranged an international competition of plant for the construction of villa-flats at the Lido, Venice, at a total cost not exceeding £80,000. Prizes of £480, £320, and £200 will be awarded, and plans must be sent, not later than June 30, to the "Direzione della Compagnia Italiana dei Grandi Alberghi, S.M. del Giglio 2467," Venice, whence further particulars may be obtained. Some further particulars may be seen at the Commercial Intelligence Branch of the Board of Trade, 73 Basinghall Street, London, E.C.

MANCHESTER.—The Blackley Estate Sub-Committee have decided to obtain competitive plans for the erection of fifty semi-detached cottages on a portion of the estate bounded by Hill Lane, Foyer Road, Stockdale Road, and Mansfield Road. The houses will be let at rentals of 6*s.* 7*d.* to 8*s.* 6*d.* per week. It is proposed to offer premiums of £50 and £25 for the best two designs, payable only if the Corporation obtain a tender for the erection of the cottages at a cost not exceeding that estimated by the competitor.

ILLUSTRATIONS.

THE HALL OF THE WORSHIPFUL COMPANY OF GOLDSMITHS.

THE demolition of the old Post Office in St. Martin's-le-Grand has afforded an opportunity for an adequate view of the work of Philip Hardwick, to which reference is made in an article on "The Preservation of Architectural Masterpieces," on p. 148.

WATERLOO PLACE, LONDON.

THE rebuilding of the northern end of Waterloo Place includes on the east side the new offices of the North British and Mercantile Insurance Company and of the Bank of Montreal. This building has been carried out from the designs of Messrs. Thompson & Walford.

THE ARCHITECTURAL ASSOCIATION.

AN ordinary general meeting of the Architectural Association was held on Monday last, February 2, at 18 Tufton Street, Westminster, S.W. Mr. Maurice E. Webb, M.A., vice-president, occupied the chair.

It was announced that the third spring visit will take place on February 14, when a visit will be paid to Lansdowne House, by permission of the Rt. Hon. the Marquess of Lansdowne. The number of the party will be strictly reserved to members holding tickets, which may be obtained on application to the secretary. The tickets give full particulars as to time, &c.

Mr. L. H. Glencross was reinstated and Mr. J. H. Edgcumb was elected to the membership. The election was also announced of M. Defrasse, Architecte du Banque de France, and M. Godefroy, Architecte du Bureau des Postes et Telegraphes, as honorary members.

A vote of thanks was passed to Messrs. Blow & Billery for permitting a party of members of the Association to visit No. 9 Halkin Street on Saturday last, January 31.

Professor W. R. Lethaby, F.R.I.B.A., then read the following paper, entitled:—

Some Notes on Greek Architecture.

I have been in some doubt as to what I should address you on this evening. One moment I thought I should like to speak of "up-to-dation" architecture, and the cinema and tango styles. Then I have really wanted to write a paper on the teaching of architectural theory in France, and the movement of thought which underlies and goes behind the common routine of the schools.

It is possible that some of you suppose that the teaching of Viollet-le-Duc was a mere temporary disease—nonsense which left the great tradition of the studios unaffected. But it is not so in fact. Guadet, the late popular Professor at the Beaux-Arts, taught the all-sufficiency of noble structure more cleverly than even Choisy and the great master from whom they both derived their doctrine. Even the methods of drawing practised in the ateliers has been revolutionised by no other than Viollet-le-Duc. Take this witness from Solomon Reinach, who, I suppose, is the most widely learned man in Europe. In a paragraph on architectural drawing, published a month or two since, he said: "English architects have much to learn from ours, who happily perpetuate the tradition of Viollet-le-Duc." (*Revue Archéologique*, 1913, p. 266.)

We shall never become really like the French till we love clear ideas better than sounding words, and value insight more than bluff—blind man's bluff.

However, I have decided to avoid controversial topics, and I have fallen back on Greek archæology. I should explain that there will necessarily be some little repetition of what I have said before, but this is only in linking up what I hope is new.

In these notes I am going to talk on, and round about, three famous monuments which are preserved in the British Museum—the doorway of the "Treasury of Atreus" (so called), the sixth-century Ionic Temple at Ephesus, and the Mausoleum of Halicarnassus.

One of my objects in doing this is to commend to you each severally the idea of taking up the study of special buildings about which you shall decide to know all that may be known. Directly you go beyond the generalities of the comprehensive histories you will usually find it quite easy to make yourself a specialist on one selected building. Amongst those which I have seized as my very own are the three buildings which I have named, and the study has been very amusing. There is something of romance in noticing little points regarding these world-wonders which may perhaps never have been explained since the workmen left them. To give a little example, if I may. You will know that it has been much argued whether the sculptures of the Parthenon were painted. There is plenty of evidence that the backgrounds of the reliefs were painted blue and red, and that the architectural members had patterns, but all beyond that was uncertain. I made a careful search for traces, and at last found two eye-pupils which had been painted, one being that of the eye of Selene's great horse from the pediment, and another being the pupil of the eye of a horse on the frieze.

We have, as you know, in the British Museum the remarkable doorway of the so-called Treasury of Atreus at Mycenæ. It is the most complete specimen of pre-Hellenic or Ægean architecture in any museum. It may be dated about 1200 B.C. You will remember that it has columns flanking the opening which are larger above than below. Ægean columns were generally in wood, and it is entirely reasonable in wooden structures to make the posts bigger above, where other timbers are framed into them, and smaller below, where they rest on a stone base. I was interested last summer to see the same thinking applied to the wooden posts of Wiltshire cart-sheds. In the British Museum restoration it is suggested that certain red marble slabs decorated with bands of spirals cased the wall surfaces at the sides of the triangular relieving space above the lintel. I gave some reasons once before why these slabs must be accepted as the filling of the space itself, and I will now add two more. These slabs have dowel holes in their beds. They were thus pinned together to form a sort of screen, and they were not cramped to a wall behind them. Again, in Dörpfeld's restoration of tomb II. at Mycenæ, illustrated by Perrot and Chipiez, he shows the triangular relieving space filled with similar spiral-work. Whatever evidence he had, it is most unsafe to differ from the great German expert. I should like to suggest to one of you to make a revised restoration of our wonderful doorway. I may now mention a point which I think is imperfectly understood regarding the construction of vaulted tombs either round like the "Treasury of Atreus" or square like one recently discovered by Sir A. Evans in Crete. These tombs were built in excavations in the side of a hill or covered with a mound of earth. Now, the building of masonry which contracts in the form of a vault in a pit is quite different from the problem of doing it in the air. Not only have you all the abutment that is wanted, but by packing the space between the leaning masonry as it goes up and the side of the pit you can weight the tails of the stones so that they won't fall inwards. In the square stone-covered tomb in Crete described by Sir A. Evans the stones of the sloping roof were long and their beds actually declined outwards. When you consider the packing at the back you will see what a good expedient this was. Doubtless the same sloping beds were continued until the space became contracted enough to complete it with couples of leaning stones. Mr. Fyfe, I think, called these cantilever vaults—an excellent explanatory name. It should be realised that this doorway is no unrelated freak of design; it is a specimen of a type of which many examples have been found at Mycenæ, Tiryns, Orchomenos, Pylos, Knossos, and elsewhere. A painted chest found by the Italians in Crete shows a tomb door with spiral bands on the jambs and cornice and on the door itself.

Recent publications by the German Archæological Institute show remarkable results obtained by an extremely careful examination of the traces of painting on the plastered walls and floors at the Palace of Tiryns. The fragmentary evidence has been combined in a wonderful way, which should be a lesson to us in method and refined precision. The walls were painted in the brightest colours, with scenes like processions and the hunting of beasts, and with a great variety of pattern-work. In several cases the dadoes showed remarkably accurate and vigorous imitation of veined marble slab-work, and this imitation must show that polished coloured wall linings were already in use, for where the imitation is there also must the original have been. The doorway of the Treasury of Atreus shows similar liking for the juxtaposition of coloured stones, for, while the main structure was of a light greenish-grey, the triangular tympanum was filled with slabs of red marble ornamented with rows of spiral patterns. At tomb II. the cornice over the door was of "leek-green marble." The plastered floors at Tiryns were also painted; frequently they were divided up into squares something like a chess board with some simple subject in each. Some of these designs show an intention to make the floor recall the sea, and, as a whole, they are so much like later mosaic floors that it seems as if there must have been some link of connection.

Sir Arthur Evans found a great number of similar wall paintings at Knossos. Painting must have been the primary art in the pre-Hellenic age in Greece, and the earliest form was doubtless pottery painting, in which, at this great time, most exquisite works were executed.

The decoration of the doorway of the Treasury of Atreus is in bands of spirals variously disposed on the surface of the stonework, and there were other bands divided into alternate panel and vertical-strip arrangements. Both were derived from the painted pottery which is the natural source of such banded decoration, as also of the spiral formed by a twirl of the brush. The panel and vertical-strip decoration coalesced with a natural mode of construction by the use of alternate slabs and posts, and a great number of examples found in Crete show certainly that this was the origin of the metope and triglyph. First painted bands, then stone dadoes, with alternate borders, then metope and triglyph; thus was the Doric frieze developed. The sculptured Ionic frieze seems to have had a similar origin. In this connection two remarkable stones from Mycenæ, at the British Museum, which have not received the attention they deserve, must be mentioned. They are fragments of slabs which had oxen well carved on them. The reliefs covered two courses, which, together, were about 4 feet 6 inches high. A German scholar who showed that they belonged to a band of sculpture called it the "oxen-frieze," but the band was really an oxen dado. We must get it into our minds that the slab dado was perhaps the most characteristic feature in Ægean building work. It probably arose from the use of crude brick concurrently with easy access to gypsum, from which large slabs to protect the lower parts of the walls could be easily cut. Sir Arthur Evans describes an example found by him, where both sides of the lower part of a wall were protected by such slabs, which must have been fixed when it was built, for the slabs on each side of the wall were linked together with wooden ties having dovetail ends let into the top edges of the slabs.

Now, our slab fragments at the British Museum have dovetail indents, which show that they formed part of a similar dado. Further, the edges of the slabs were rebated, which suggests that they were arranged like metopes with thicker stones alternately. One of the oxen has incised lines on its neck and body, from which we can tell that it must have been painted with dappled colours, and Perrot mentions that he saw indications of colour on the plant which shows above this animal's back. Here, then, we have remnants of a fine architectural decoration, a dado of slabs sculptured with oxen and plants and painted.

The finest ornamental band was found in the portico of the great hall at Tiryns, and I cannot doubt that our oxen dado come from a similar palace hall at Mycenæ. Further, taken together with much other evidence, like delight in rosette decoration, it may not be doubted that the celebrated gypsum-slab dadoes of the Assyrian palaces derived from Ægean sources. The sculptured dado gradually crept up the wall and became a frieze.

Sir Arthur Evans, in an article dealing with the relations between Ægean and Greek architecture, has pointed out that the crudest sculptured Doric pediment known, that recently found at Corfu, is practically a repetition of an Ægean motive—a central object with two watching beasts. It may be observed, further, that this pedimental subject was sculptured in relief on large slabs which cased over the face of the tympanum. This carving on slab casings was, as we have seen, a typical Ægean method, and even at the Parthenon the sculpture of the gables was not set in front of ordinary masonry, but the field of the tympanum was first cased over with great slabs set vertically. So was tradition in building carried forward, so Greek art was a resumed and perfected Ægean art.

In the Ægean age it was customary to mark that which was sacred with what have been named "Horns of Consecration." I have no doubt that the very curious lyre-shaped finials, which we call acroteria, set on the apexes of the pediments of Greek temples, were survivals of these horns. Sir A. Evans has illustrated a terra-cotta sarcophagus having a cover like a roof, and on the points of it are crescents, and these are doubtless primitive acroteria.

Ægean art again illustrates quite clearly the origins of architectural mouldings. Just as the painted subject tended to become a sculptured relief, which was completed by painting, so the painted band of spirals led up to the carved bands of spirals of the doorway at Mycenæ. Further, I believe it will be found that a large class of mouldings arose as bands of hollows and projections imitating the painted bands which are so universal on early pottery. Relief sculpture, pattern work, and moulding are thus for the most part echoes of painting. Besides this imitative source for minor moulded work, there are three main conditions in structure for the larger mouldings and orders of mouldings. First, there is the recessing into a retiring series, as around a doorway; secondly, the projecting capping forming a protective shelter; thirdly, rounding as for a column and the great echinus of its capital. This conception of moulding as founded on certain large structural forms, with added minor shadings, should be helpful to the modern designer who considers principles.

In Ægean architecture we find all these modes of moulding already practised; and Greek architecture proper, of the early period at least, hardly produced anything new, although, of course, great advances were made in refined profiling.

The Ionic column must, I think, have been developed as a free-standing pillar. The wide-spreading foundation of its base suggests this, and some of the very earliest examples known were isolated pillars bearing sculptures, as those lately found at Delphi and Ægina. Then we find that Ionic pillars were from an early time used as goal-posts in the circus, and also to mark another goal—the grave. It is remarkable that in one or two Ægean works of art representing contests a pillar appears in the background.

The Ionic column, I do not doubt, was developed from such goal-posts. In the finished order the column has a base in three separate courses—a square block, a circular block, and a rounded or inverted bowl-shaped block, the torus.

It is now generally accepted that the Doric Order was developed from Ægean architecture. It has been said that the metope and triglyph frieze is an adaptation of Ægean dado construction. I have never, however, seen any really satisfactory explanation of the guttæ, or drops, beneath the triglyphs of the Doric frieze, and I venture to put forward one possibility which has lately occurred to me. In modern Switzerland it is customary to shield the ends of projecting beams with a piece of board nailed up against its end section. The bottom edge of this shield piece is cut into several notches, so that the water may the better form into drops and fall. Frequently these casing pieces have five or six such "drops" of a dove-tail form, just exactly like guttæ. Now, as much Greek building was in timber, and as like causes often bring forth like results, it seems to me quite possible that Greek guttæ originated in such a custom. As you will remember, Vitruvius says that triglyphs did represent the ends of wooden beams.

We now know enough of this Ægean architecture to see quite clearly that our gateway from Mycenæ is not an abnormal curiosity, but an example of a fine, highly developed, and widespread art, intermediate between the early architecture of Egypt and that of Greece. It is no rude stone monument, but a refined piece of true architecture. The great door is nearly 18 ft. high to the lintel and 30 ft. to the apex of the polished red marble tympanum above it. The eyes of the carved spirals were set with blue-glass studs, and bronze adornments were fixed to the lintel. The domed interior, which was nearly 50 ft. across and as much high, was thickly studded all over the surface with bronze rosettes or stars.

Leaving these origins, we must now jump over 600 or 700 years to the beginning of the great period of Greek architecture. The example is the temple built by Crœsus at Ephesus, the existing fragments of which are housed in the British Museum. It was being built about 560 B.C., and was a great Ionic structure of the same size on plan as the later temple. It had several remarkable features, such as curious Ionic capitals and groups of shallow mouldings on the bases, and, above all, sculptures on the lowest drums of its columns. I believe that these last are, in fact, a version of the Ægean sculptured dado. In the basement of the Museum are three or four broken fragments brought from the site of the temple of two sculptured oxen attached to solid blocks. Dr. Murray thought that they must have belonged to capitals, but six or seven years ago I came to the conclusion that they represented what I will call dado blocks to the antæ of the portico. The scale would allow them to range with the lowest drum of the columns, and the Assyrian bulls furnish an analogy for the combination with square blocks. It was rather a leap, however, from Nineveh to Ephesus, even though Nineveh did borrow its sculptured dadoes from pre-Hellenic art, and may have borrowed its bull-guarded doorways also. Quite recently, however, Professor Garstang, of Liverpool, has excavated a series of Hittite monuments in Asia Minor and the parts of North Syria which adjoin. In these we find that the sculptured dado is the principal feature. One of them is a portico with oxen on blocks at the antæ and sculptured bases for the columns. Here, then, I find full confirmation of my old theory as to the Ephesus bulls, and for the view that the sculptured dado was common to Asia Minor and Assyria. The tall bases of the columns sculptured with sphinxes are also interesting prototypes; but the lowest drums at Ephesus are best explained as having pieces of dado wrapped around them. One other carved stone at the British Museum which Dr. Murray assigned to square piers has curious slanting faces, and it must, I think, be a basis to the door-architrave ranging with the antæ dado. Here, then, in the singular and seemingly capricious work at Ephesus we again find only a link in a chain of custom reaching from the far past. Old architecture carried along in its deep current much which we have forgotten even to think about—a great body of ideas which we may perhaps suggest by the phrase "folklore." To return for a moment to the watching bulls. Now we have caught them in early Greek architecture we may harness with them four oxen which project over the doorway of this early fourth-century Heroön, at Trysa, in Asia Minor. The heads of bulls which still later were sculptured on the capitals of columns, of which a late example from Ephesus itself is known, carried on the same tradition. As in Assyria we found the bull door-guardian, so in Persia we find a version of the bull capital. Another fragment in the basement of the British Museum shows on the face an immense egg and tongue about 16 in. deep and wide, and on the return the trace of a volute. This stone is nothing else than the anta capital from the Crœsus temple, as is shown by comparison with many other anta capitals which have been discovered at Samos, Miletus, Ephesus itself, and Priene. In most of these, however, there are three rows of volutes on the return and three rows of enriched mouldings on the front face. The splendid anta capital of Priene at the British Museum is a specimen of this more elaborate variety. The fragment from Ephesus has high interest, as it must be the earliest Ionic anta capital which exists. I wish I might beg that many of the stones in the Museum basement might be put in the galleries, where we could examine them at leisure. The column bases and capitals of the archaic temple are also wonderfully interesting from the evolutionary point of view; the bases, with their multitude of shallow hollows and rolls, carry on the Ægean system of which we have spoken. The known capitals are of two types—one with volutes which have no central eye, others with a great wheel-like flower filling up the whole rounded space usually occupied by the volute. Such large rosettes in spirals were favourite motives in Ægean decoration, and later Ionic capitals frequently had small rosettes in place of the small eyes of the volutes. I am convinced that the Ionic capital as a whole derives from some undiscovered Ægean prototype.

The whole portico of this temple of Ephesus was a wonderful thing; it was not a mere single or double row of columns, but a double row of eight columns stood in front of an open columnar hall—a vast porch of columns. This arrangement is essentially Asiatic. The central opening was enormous—28 ft. 6 in. Its beam, as has been remarked by Mr. Dinsmore, was the greatest stone in Greek architecture. It is impossible to think that there was more than one of these; that would be an anti-climax. The back end of this temple must have had an extra column, as has been found to have been the case at Samos, and all the inner beams and ceilings of the porticoes must have been of wood.

I had intended to conclude with an account of the mausoleum, making use of recent writings on that wonderful monument, but my allowance of time must be nearly exhausted. You will know that there has been some controversy as to whether its thirty-six columns were disposed in two rows around it, giving a small plan, or in one row, giving a large plan. Mr. Stevenson supported the small-plan theory, which had been promulgated before the actual discoveries made on the site by Newton and Pullan. Since those discoveries no foreign writer has, I believe, followed the small-plan theory; and recent careful examination of the evidence by the American, Mr. Dinsmore, substantiates the large plan. Indeed, I cannot think that anyone now can read over the accounts given by the three explorers—Lieut. Smith, Sir Charles Newton, and Mr. Pullan—without being convinced that this is the only possible solution. One important outstanding matter is that of the spacing of the columns. I before accepted an interval of about 9 ft. 9 in., but I have come to think that a columniation of 10 ft. 6 in. is more probable. It is now known that the gutter fronts of the temples at Priene and Ephesus had three stones and three lions' head spouts to a bay. Again, Pullan stated that no lion's head at the mausoleum could have come over the axis of the angle column. But, on correcting the projection of the cornice, I find that the second head from the corner of the gutter would have been over the column. And this becomes the second reason why a similar agreement should be found at every columniation. The gutter stones are 42 in. long, and three of these would give a bay of 10 ft. 6 in. There are many other minor points which I will not now attempt to deal with, but if any student of the Architectural Association should feel a desire to make a restoration of the orders of the mausoleum, or of the two Ephesian temples, I should be delighted to be consulted and to put my views at his service. A student of the Beaux-Arts made a restoration of the mausoleum some twenty years ago; doubtless some other will soon come over to take up the magnificent order of the later temple of Ephesus, which is certainly the most splendid subject for an essay in restoration contained in any European museum. I wish we could do it ourselves before that happens.

DISCUSSION.

Mr. Gerald Horsley, in proposing a vote of thanks, remarked that Professor Lethaby was an old friend of the Association and always responded with great kindness to their wish—a very frequent one—to listen to him on a subject of his own choosing. They trusted soon to have an opportunity of hearing him again on one of the subjects he referred to in his introduction. The paper that night would help most of them to a better understanding of the splendid fragments of the monuments described, now housed in the British Museum. One of the benefits of listening to a man of Professor Lethaby's knowledge and research was the living interest he could impart to ancient work by tracing its origin and growth. With regard to the origin of triglyphs and metopes, one would like to ask whether the panel and strip decoration on ancient pottery was not derived from an early timber construction which they had always supposed to be the origin of the Doric triglyph and metope, and of details of the Doric entablature. It was illuminating to hear how Professor Lethaby had noticed in Switzerland the wooden shield at the end of projecting beams being notched, so as to allow the water to drip more evenly, and from this suggests an explanation of the guttæ, which seems a very probable one. Another interesting point in the paper was the reference to the frieze in ancient architecture, which Professor Lethaby appeared to trace to the sculptured dadoes in the palace halls of Mycenæ and Tiryns. One was also very glad to listen to an explanation of the acroteria—a feature in Greek art which had often puzzled students, and of which one would like to hear more. He would like heartily to echo Professor Lethaby's wish that some student would take up the restoration of the magnificent order of the later temple of Ephesus before any student abroad does it. The advice to students to make a thorough study of special buildings was very valuable; such study would bring a vast amount of pleasure as well as knowledge. He might conclude with a little story of Professor Lethaby. Not long ago, when at the South Kensington Museum, he met at lunch several professors and asked, "Where is Lethaby?" and was answered, "Oh! he never lunches, he is in the library." That incident showed how some things were done.

Mr. F. Winton Newman regretted that histories of architecture were not written side by side with a consideration of the social conditions. In that way students would acquire a better idea of the needs of the various peoples. The finest artistic work seems to have been attained by generations which had got beyond the mere satisfying of needs and necessities. The most perfect stage of architecture was reached along a road of tradition. At the present day architects were in a network of horrible necessities. The well-nigh perfect architecture of old days was also bound up with construction—one advancing at an equal pace with the other. All that was changed nowadays. Professor Lethaby, in his little book on architecture, which he called an "Introduction to the History and Theory of the Art of Building," had happily defined architecture as "a fine response to noble requirements."

Mr. Theodore Fyfe said the paper gave what they had come to expect from Professor Lethaby—namely, a new light on familiar things. It had, amongst other matters, emphasised the continuity of architectural history. It was certainly deplorable that no student had restored the order of the temple of Ephesus.

Mr. C. F. A. Voysey said he always felt that sculpture was not complete until it had been painted, for colour was as important to us as form. Professor Lethaby's paper was a most splendid argument in favour of evolving our architecture out of present-day conditions and requirements just as had been evolved that of old Greece. If they went to the Grecian temples to learn how to build they were going to conditions vastly different to their own. Classic architecture was the expression of an intellectual culture. Gothic expressed a spiritual culture. We of to-day lived in an age when there were both those cultures. It was therefore necessary to know and understand the spirituality of Gothic and to know and understand the intellectual force of Classic. They could only learn to do as the Greeks did by an intelligent study of Greek conditions.

Mr. W. G. Newton considered Professor Lethaby to be a standing refutation of the idea that an archæologist was a dry-as-dust person. His paper had entered a very eloquent plea against the national neglect of the British Museum—a building full of the most wonderful things. Personally he always felt it very refreshing to turn aside from the troubles of everyday life and to stand in the Museum among those grand old monuments. After all, these years they seemed to give spiritual as well as intellectual inspiration. It would be most helpful for the A.A. school authorities to follow out Professor Lethaby's idea and set the second year men to take the restoration of the temple of Ephesus as part of their work. He wished the lecturer had given them an architect's idea of an Homeric house, for the latter had so far only been explained by scholars who did not know a damp-course from a dripstone.

Mr. G. Leonard Elkington considered the paper to have been one of the most interesting for some years—even though Professor Lethaby had at times rocked the cradle of their infant thoughts rather rudely.

Mr. Maurice E. Webb, chairman, closed the discussion. A vote of thanks was passed with acclamation.

ROYAL ACADEMY LECTURES: ARCHITECTURE.—II.

The second of the course of four lectures delivered by Professor Edward S. Prior at the Royal Academy was given on Friday, the 30th ult. It dealt with

The Roman and Byzantine Contributions to Mediæval Art.*

Mr. Prior had already introduced the column, the arch, and the curved wall of Roman building as the commonplaces of Roman style, and therefore in necessary use for the first building of Christian churches. He had also laid stress on the decrepitude of the building instinct that grew from the decay of the Roman Empire—a decrepitude so deeply declared in the barbarian societies of Western Europe that from the year 300 to 1000 no architectural creation of style was achieved in Northern Italy, France, West Germany, or England—that is to say, in those areas which were to be the scene of the great Romanesque and Gothic expansion of the building art starting in the year 1000.

All the time, however, the triumphs of Byzantine art and architecture were developing in the East, and the Eastern development of style was sending offshoots into the West. Yet it was not from these, said Mr. Prior, but from the ancient Roman arts, that the mediæval regeneration of architecture came. Professor Lethaby well said: "All that we owe to the Romans in architecture may hardly be recounted. They absorbed all the traditions of antiquity and renewed them into modern shape."

It is certain that the early mediæval builders of West Europe were conscious of the legend of great Roman building, and acknowledged their indebtedness to it rather than to Byzantine art. Yet already in this Roman building of the late Empire, which the Middle Ages recognised as their exemplar, the nicety of classic design and all the delicacy of classic execution had certainly perished. Not only in the decorative handicrafts was there a clear hiatus between the Imperial and the Romance culture, but the building science manifestly decayed. Roman construction had depended on the science of its lime-making, and its mortars and cements were conspicuously effective. The Middle Ages lost the methods of cement manufacture, and all through the Romanesque and Gothic building mortar is bad. The mechanism of stone construction was little understood in this country, for instance. Saxon arch building, as at Sompting and Bradford-on-Avon, had lost its science. The dome of the mausoleum at Ravenna of Theodoric, the barbarian invader, is not built, but is just a great single block of stone. The identical story is told in the Merovingian and Carlovingian buildings.

The building craft of the Byzantines, in which the traditions of classic elegance and the science of classic building were still being exercised, failed to penetrate westward. Western architecture as a science required to grow directly from experiment again, with the help of the ruins of Roman building. Yet, while in practice, both on the æsthetic and on the constructive side, the classic forms had lost living development, yet the Roman expressions of building conditions were in one point leading architecture onwards. This advance was to be seen in the plan of the Christian church. In this the necessities of church-building did express themselves, so that we have to chronicle a series of advances and a continual development. The column, arch and apse, however barbarously conceived and inefficiently executed, were in existence for arrangements of the planning. And so building experiment, for some centuries, contented itself in re-arrangements of the Christian church-plan, experimenting in the accommodation necessary for church service.

To plan in mediæval days meant just to spread out the accommodation on an open site as was required. There was none of the present idea of fitting accommodation into set shapes within enclosing lines, or the necessity for developing a puzzle-fitting capacity. The mediæval ecclesiastic, when he planned his church, stated, or ordered, the accommodation as simply as a farmer of to-day might give the dimensions of a barn he wanted. No more was necessary, because all the other particulars for the church-building were already in the consciousness of both the ecclesiastic and the mason. The necessities of construction were, similarly with the methods of accommodation, fixed at any time and at any place. There could only be the smallest possibility of variation. The direction of that variation, be it noted, was always a practical one towards economy, simplifications of labour, or of treatment. Such variation grew immediately into practice, and were adopted universally as a matter of course.

This being so, the changes of plan which can be followed in the church-building of the centuries from the sixth to the twelfth express directly not the inventions or fancies of architects, but changes or developments in the faith of Christendom. The advance was made from simplicity to intricacy by additions which reflected the advance of observance, particularly the worship of the saints, and it was to provide for these that the simple oblong hall (or basilica) acquired projections of considerable complexity. The large aisled hall and narrow eastern apartment, with its single apse of the Roman basilican church, changed to the abbey plan, comprising (1) a nave and aisles, (2) a transept or crossing with its four great central arches, and (3) a presbytery or eastward extension, with, in some cases, two or more semi-circular apses radiating from the centre of the main circular building or apse.

A most important point is this development in the number of apsidal chapels. These provided a series of sanctuaries or sacred centres instead of the single sanctuary, and they were approached by the aisles which were continued round the presbytery. These sacred places were (1) the exhibition stations for the display of relics and (2) the altars dedicated to saints. The chevet plan of the Romanesque church was the final straightforward solution of the desire to increase their number.

The basilican plan—from whichever of the suggested Roman prototypes it was derived—spread widely, and numberless Christian churches all over the Roman Empire were built in this form—that is to say, they exhibited a building of colonnades of triumphal arches and eastern apses.

But though it was common all through the Christian extension of the Roman Empire, and continued in Rome and the parts of Italy immediately affected by Roman influences as the common form of a church, except in Rome the style and construction of these churches began at once to alter. Why was this? The answer is simple. Rome was able to supply columns for colonnades all through the Middle Ages. This was the easy way, at Rome. The convenience and common-sense of the Christian basilica was evident when columns were to be had for nothing. Where they were not to be had, arches took the place of entablatures as columns grew scarcer. When they were not to be had at all, piers took the place of columns—wide arches opened out instead of continuous colonnades. But with such a construction the basilican plan, which depended on colonnades for its area, was compromised. It was easier to get space by square planning than by ranges of colonnades. And this brings us to another plan of the Christian church.

By the side of the Western decadence of the building art a great creation of building style was being carried on in the East—that which is called Byzantine because of its development at Byzantium, which, as founded by Constantine, was the capital of the Eastern Empire. The Byzantine style had its rapid and wonderful consummation under Justinian in the middle of the sixth century, and its enduring monument is the church of Hagia Sophia, or Sant Sophia as it is usually called. Externally, the immense scale of its dome should be noted, and how it dominates the composition, also its external flatness. Internally, the character of the Byzantine dome is equally distinctive, its peculiarity being its ability to raise a circular dome on the four piers of a square plan. The Pantheon, which had been the greatest achievement of the Roman dome, was on the circular plan.

Byzantine building had two distinct periods—the great Justinian period of the sixth century, and then, after an interval, a later development of the ninth and tenth centuries, in which, as one marked peculiarity, the dome is seen set on drums rising above the abutting roofs. But we have to recognise the Eastern art as having influence on the Western in two quite distinct directions—as an architectural influence and as a decorative. The architectural and decorative influence of the Justinian period was undoubted at Ravenna in the church of San Vitale of the sixth century; and, again, that of the second development of Byzantine style at St. Mark's, Venice, of the eleventh century. But while there were these introductions on the east side of Italy, elsewhere the action of Byzantine builders is by no means clear. The actual craft of dome building cannot be satisfactorily traced from Italy into Western church-building. The most commonly quoted example is the dome building of St. Front, Perigueux, a church which was built towards the middle of the twelfth century, about fifty years after the planning of St. Mark's. Unfortunately, St. Front has been restored in such a manner that the original building is no longer genuine; its art is now completely lost. There exist, however, other examples, of which that of Solignac is the most genuine. These domes of Western France were at one time supposed to be due to the importation into France of Greek masons, but this view has been shown to be mistaken.

The square planning, however, like at St. Front's, where, instead of the aisled basilica, there are arrangements of square domed halls, this square planning of the church can certainly be classed as a direct introduction of motive from Byzantine architecture. It was not an introduction of masoncraft; its points did not lie in construction, not in the skill of Greek masons, but in the idea of covering the body of the church with a series of vaulted compartments. In the West of France domical roofs did in the twelfth century accompany the plan. But the significant and curious point is that the architecture of Europe, while absorbing the domical plan, rejected the dome itself.

Contemporary with Hagia Sophia had been another great domed church at Constantinople—that of Hagios Bacchus, "St. Sergius and Bacchus," as it is called. This has a great central domed hall, like Sant Sophia, with an aisle that made an encompassing square-planned passage, the circle being made out with recessed apses to fit the square.

There can be no question that this clever plan was adopted from Constantinople for the building of San Vitale (c. 530) at Ravenna, where the aisle is now managed for an octagon. In this Ravenna building we have a direct introduction of Byzantine plan and Byzantine masoncraft. But when Charlemagne at Aix-la-Chapelle (c. 800), 260 years after, took his plan from Ravenna, he had to bring workmen to build the dome. He could not introduce Byzantine style, because for his general work he had to rely on local masons. So it will be seen that the style of Aix-la-Chapelle has little trace of the Byzantine workmanship.

However, on Charlemagne's importation of the Byzantine domed plan, the dome kept its pre-eminence, and it is to be seen that at Aix-la-Chapelle, that is, in later Byzantine style, the dome was lifted above the circling aisle. This peculiarity was constant in the ninth and tenth century building of churches in the East—the lifted dome with a circle of windows in the drum.

Then, for Western building, the idea of the central lantern proceeded on a way of its own, rejecting the dome. Charlemagne's church had an extraordinary reputation, and we continually read of its being taken as the model of Western churches. But these copies by no means kept to the original. The central tower and spire had no place in the basilican church. But from Charlemagne's church onwards the central tower comes into the planning of the abbey church. So there came into the locality of experimenting construction a new idea, the possibility of building a tapering tower to dignify the sacred central part of the church externally and internally by means of a lantern, and to do this on the four piers of the crossing.

The central tower of Western cathedrals was the great achievement which marks the main stem of Romanesque style. It was particularly developed in the English building of great churches. English central spires, as at Salisbury, may be considered as the legitimate descendant of the dome of Sant Sophia, just as that had been of the domical Assyrian house.

Architecturally, the great building of the East influenced the West indirectly with ideas of plan rather than models of building. But when we turn to the decorative forms which make the peculiar distinction of its art, when we look at the Byzantine absorption of all the gorgeous motives of Oriental design, and then at its renewal of Greek dexterity in the crafts, we recognise the contribution of Byzantine art to have been almost boundless. In a general way, one can describe the most of mediæval sculpture, and almost the whole of mediæval painting, as based on the Byzantine crafts and not on the Roman.

It is to be observed, however, that this Byzantine decorative influence came in many ways—seldom by the importation of Greek workmen—generally by the commerce of Byzantine products which were the models of imitation and produced local crafts, which in various ways transferred the Greek ideas to the decoration of West European building.

Two chief and distinct currents of decorative motive from the Orient meet in Romanesque design, which may be called the South and the North European. Up to the eleventh century they ran in separate channels, but then blended together in the final great Gothic evolution. The Norse expression drew Byzantine culture by the Baltic route, the overland passage from the East, coarsening and materialising patterns in the vigour of a barbarian energy; the Carlovingian expression drew by the Mediterranean through Ravenna and Provence, and grew languid and nerveless in its efforts at elegance and refinement. Then suddenly, about the year 1000 or after, a new life was bred into its veins. It must be remembered that for some ten centuries the Northmen had been flooding down into West Europe. The Vikings were the last of those great migrations of barbarian hordes that swamped Europe.

To account for the course which the decoration of West European building took, the influence of the Sea Rovers, whose long ships ravaged all the sea-boards of West Europe and established Viking kingdoms in Normandy and Sicily, was one of the most strange that have occurred in the history of art. There was to come from it, not, as heretofore, the weakening and degradation of art production and the wiping out of culture, but within a few generations an extraordinary awakening of all the arts of design. Building at once began its upward experimenting and creating progress, and all the arts of life began to lose the decadent and indolent expression of decayed listlessness and appear striving after a natural and forceful rendering of motive.

FORDWICH, KENT.

By J. Harris Stone, M.A., F.L.S., F.C.S.

It is wonderful how anything old interests people nowadays, particularly if it has human associations. Thought is provoked, imagination is stirred, and we long to know who and what kind of men and women they were that lived, moved, and had their being when the ancient thing we are studying was in everyday use. To the thoughtful person a museum full of antiquities is redolent of fascinating suggestiveness. We are, of course, intensely interested by what we see, but these feelings are somewhat associated with others of annoyance that we cannot behold the various objects—now mutely, even pathetically, displayed on shelves and in glass cases—as they were formerly, surrounded by their actual animate and inanimate attendants. We should like the face of the warrior to look at us through the bars of that ancient helmet. What kind of man was he? What were his womenfolk like? How did he talk? What warfare made him don his armour? Were the fights he participated in petty feuds or historic battles? Did he end peacefully in bed or on the battlefield? So it is with each prehistoric cinerary urn, Egyptian mummy, mediæval utensil for toilette or cooking which the spade of the antiquary or the forgetfulness of generations has preserved for us. We are insatiable. We want to know all about it.

"Speak! for thou long enough hast acted dummy;
Thou hast a tongue, come, let us hear its tune;
Thou'rt standing on thy legs above ground, mummy!
Revisiting the glimpses of the moon.
Not like thin ghosts or disembodied creatures,
But with thy bones and flesh and limbs and features."

Of the prehistoric past we cannot hope to learn much.

Before written records were—on stone, plaster, parchment, or papyrus—the gloom is so great that only vain groping is available, speculation rampant.

But anything that helps us to realise how our ancestors, in more or less comparatively recent times, lived, and throws light upon their social surroundings cannot fail to engage our attention and be of more than passing interest. Life in the little communities of mediæval England was different to what it is now. Scandal, small talk, and petty annoyances were no doubt as prevalent as now, but there could have been no tale-telling over the tea-table (the advent of tea has much to answer for), and probably people thought more before they spoke, for it was not so easy then to move away and leave the mischief behind as it is in these days of trains and motors. Besides, there was always the scold's bridle and the ducking-stool ominously lurking in the background for ladies who misbehaved themselves, and curious and onerous responsibilities for would-be prosecutors, as we shall see from the history of Fordwich. There, at any rate, men as well as women had to be careful.

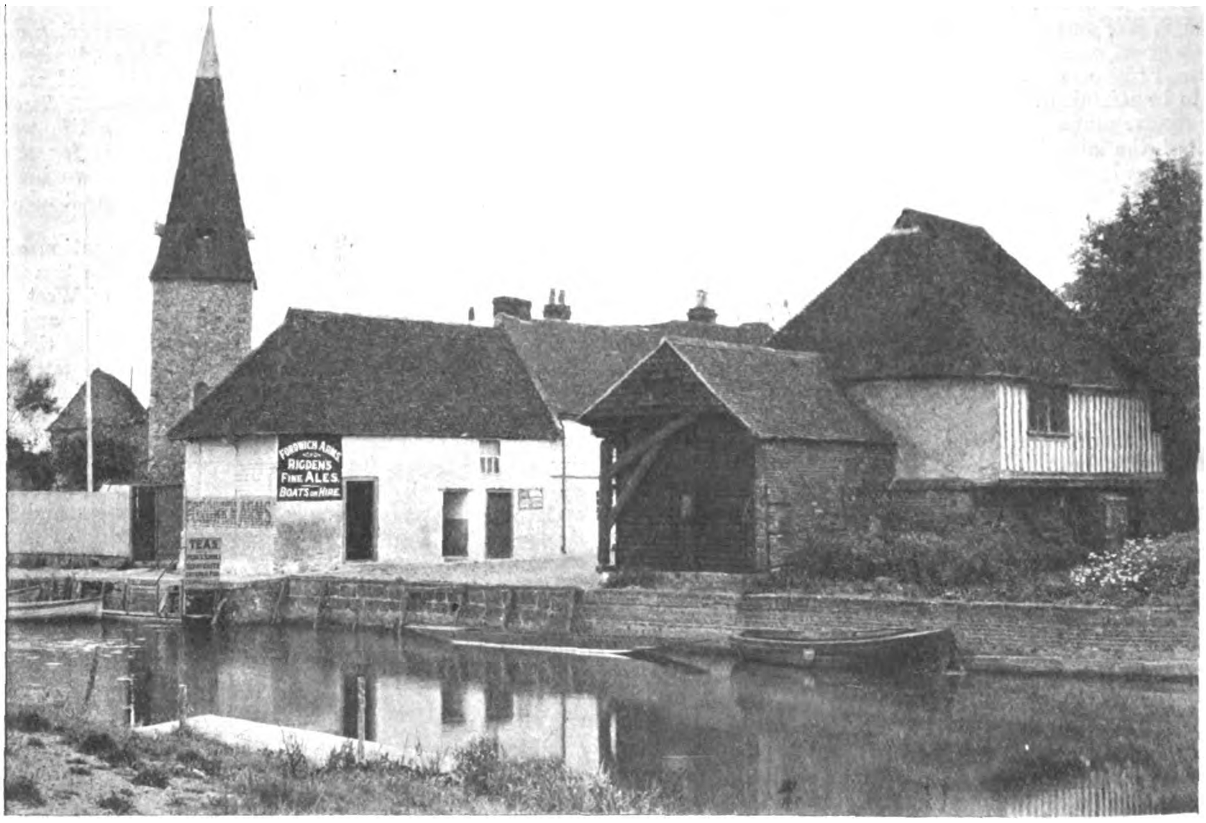
We can, now and again, from ancient records, traditional folk-stories, names of localities, and objects of domestic and public use, put together a fair, even if dim and blurred, picture of what mediæval life in rural England meant. We can discover many points of superiority over the life of to-day and also obtain knowledge of many arrangements, laws, and customs which, though they may now strike us as strange, harsh, and unnatural, were no doubt excellently planned for the management of the people of that time. At any rate, our present elaborate system of jurisprudence is to a large extent the natural outgrowth of the heterogeneous and curious conglomeration of laws, rules, and customs which our ancestors found necessary for the government and well-being of the communities in their time.

Fascinatingly interesting is therefore the old-time village of Fordwich, on the right bank of the Stour, about two and a half miles below Canterbury, because we are able from documents and other sources to reconstruct a good deal of its ancient life, customs, and habits. To us nowadays the social and municipal life of old-time Fordwich seem extraordinary.

The little village does not lie on the main highway which connects Canterbury with London, but is reached by a side road, which fact is probably the reason for so many interesting antiquities being still to be seen there. They have been forgotten, passed over, and buried in their rural solitude, and consequently have to be sought to be seen. The lover of things old and curious can revel in the past at this snugly tucked-away quaint spot.[1]

From Sturry the village is entered by an old brick bridge over the river Stour, from which a pretty view is obtained of the old town hall, crane, and church, with a little cluster of pleasure-boats nestling in their shade. This bridge belonged to the town, and a toll was taken of all carts and vehicles other than those belonging to inhabitants. The last tolls were fixed by the mayor and jurats in March 1564, and were in force till as recently as 1908, when the road was taken over by the Road Authority. Near this bridge stood the stocks until only a few years ago, but where they have gone to I know not—probably into the insatiable maw of iconoclastic oblivion.

The village to-day is small, even tiny—I doubt if it was ever large—it won't therefore take long to see all of it. It consists merely of a small picturesque cluster of antique houses and a church on the bank of a stream. Pause here, investigate and think, let your imagination have full play, and great will be your reward if the past civic history of this country has for you any interest at all.



COURT HOUSE, CRANE AND CHURCH, FORDWICH.

The population now is about 260[2] (occupying sixty-four houses), and the village is a corporate member of the Cinque Port of Sandwich, the acreage being 427.

The station of Sturry, on the South-Eastern and Chatham Railway, between Canterbury West and Minster Junction, is quite close to the village, just six minutes' walk. A sign-post gives the distance as half a mile. The pedestrian can walk from Canterbury, but as he will have to pass alongside the sewage farm, that mode of access is not pleasant if the wind blows off the fields of this latest sanitary abomination. Visitors at St. Margaret's Bay will find it an easy day's excursion to leave Martin Mill Station in the morning and proceed to Sturry by way of Sandwich and Minster Junction, returning in the afternoon *viâ* Canterbury.

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[1] "The town of Fordwich lies very low, close to the marshes, on the southern bank of the river Stour. It is but small and mean, consisting of about 30 houses and cottages. The only remains of antiquity, of its having belonged to the splendid abbey of St. Augustine for a great length of time past, was a lofty arched gateway, built of brick, at the entrance to their wharf here, lately pulled down, and a small length of flint wall close to the river."—Hasted's "Kent," vol. iii. p. 604 (1790).

[2] A former census gives 237, so Fordwich is one of those rare rural parishes showing an increase.

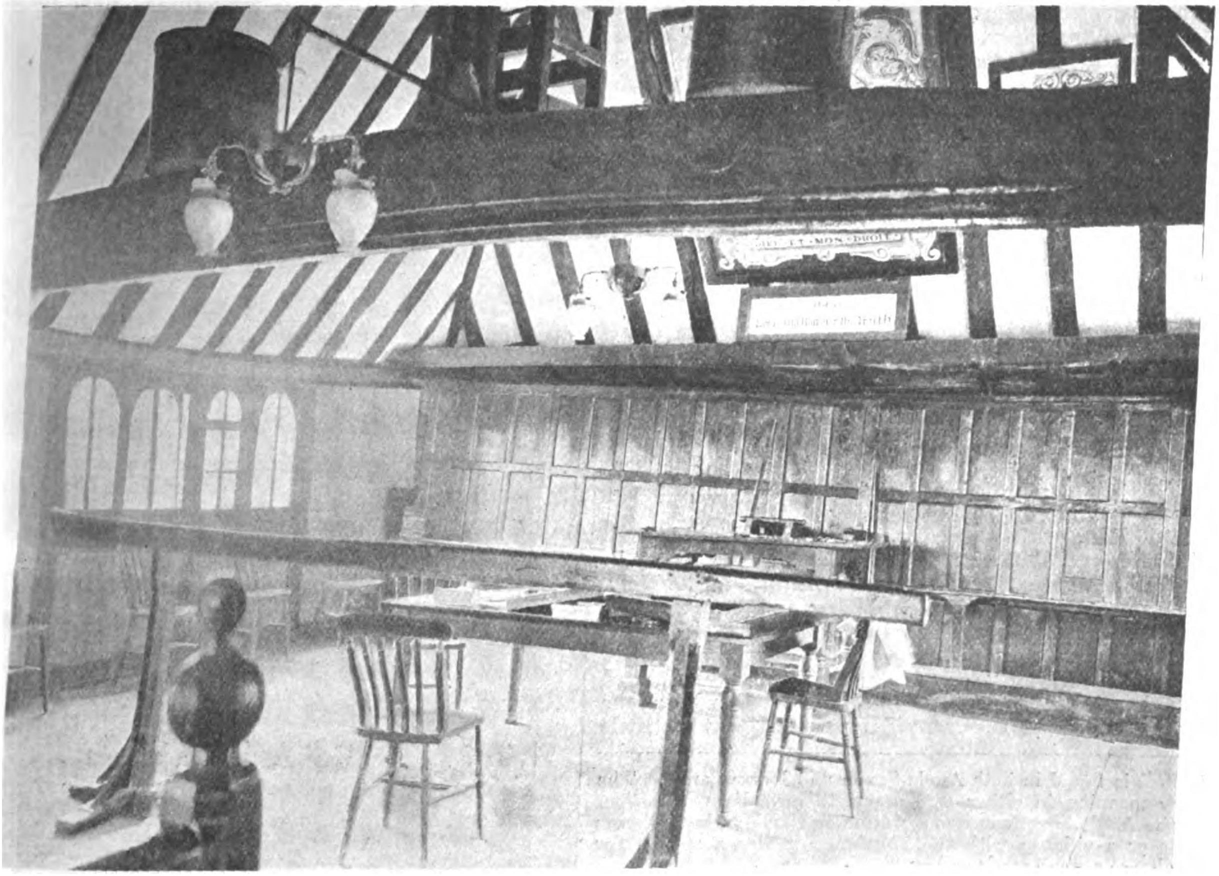
The tiny ancient court hall, opposite the "Fordwich Arms," contains the records of a municipal life of more than 600 years, and it is to-day exactly as it used to be centuries ago. A humble building of timber and plaster, the lower storey of unwrought stone patched with brickwork, and with the upper slightly projecting, has on the first floor a plain whitewashed apartment measuring only 31 ft. by 23 ft. 8 in. This is the ancient council chamber of Fordwich, to all intents and purposes a House of Commons and House of Lords rolled into one, where laws were not only made, but also administered. It was also a High Court of Justice, for many a poor wretch has there been condemned to death, and has had the sentence carried into execution immediately afterwards in the river laving the walls of the building. There one still sees the narrow bench for the accommodation of the twelve jurats,[3] with the Mayor's seat in the centre dignified with arms. In front stands a stout table of Elizabethan date (1580), on which repose, as memorials of the past, the constable's staves, a pair of antique heavy handcuffs, and other curiosities.[4]

A very substantial bar,[5] not a mere figure of speech, as it now is, before which the prisoners or litigants stood, occupies the centre of the tiny room, while a couple of ancient drums used by the press gangs[6] and a ducking-stool (really a rude, common-looking wooden chair with back) for the punishing of scolding wives and scandal-mongers, repose in safety on the massive beam running athwart the room beneath the low ceiling. The iron-bound muniment chest—a veritable "trunk" for it is made from the hollowed-out bole of a huge tree—on one side completes the furniture of this primitive apartment. In the corner is roughly partitioned off a tiny cupboard-like space called the jury-room, only 8 ft. 3 in. by 7 ft. 9 in., to which the twelve jurats retired to consider their verdicts. The smallness of this closet and its packed state when twelve men were crowded into it must certainly have been conducive to quickly returned verdicts in those days when it was used in the administration of the law. Above this closet is another even smaller, where the women who were ducked for naughtiness were placed to dry after their immersion in the adjoining river. On the ground floor is a low-ceilinged, tiny prison, of the same dimensions as the jury-room above, with a massive outer door in which a smaller strongly iron-bound spy-door has been made in the upper portion, and in it is an oblong raised plank bed. This must have been a truly terrible, even awful place of imprisonment, for the Custumal speaks of internment in the town gaol for a year and a day as a fair alternative penalty for the non-payment of a fine of sixty shillings. Better far than a year's incarceration in this dismal hole would be the more merciful ending in the neighbouring stream.

During the last century this prison closet—for that is all it is—was little used. In 1835 so seldom had his services been called into requisition that the gaoler was not aware that he had been removed from office and another person appointed in his place. Once, however, this ancient functionary related that he remembered the little cell being tenanted by a poor man who had been committed by the magistrates for three or four days for the heinous offence of "wishing to come on the parish."

A tiny piece of ground between the town hall and the adjacent wall of the house now used as a rectory is called the press yard, and was doubtless the exercise ground for prisoners immured in the stifling dungeon.

Behind the little court house or town hall, abutting on the river, is the crane house. The crane is a simple, rude



INTERIOR OF ANCIENT COURT HALL.

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[3] A jurat was a sworn officer or a magistrate or a member of a permanent jury. The word is now chiefly used as a title of office in the Channel Islands, where the jurats are judges and legislators chosen for life, Jersey and Guernsey having twelve each, and Alderney six.

[4] I discovered that there used to be in this collection a scold's bridle, but this has been taken to Canterbury, and is to be seen in a museum there—not the museum which contains the other Fordwich relics.

[5] One realises here the origin of the expression "Prisoner at the bar," not "Prisoner in the dock," as it now in fact is. The bar was before the dock, and to the bar—an actual bar as at Fordwich—were called counsel and litigants. The expression is even to this day used when a prisoner is put up for trial. "For the prisoner now stands at the bar of his deliverance and all persons, &c."

[6] Another explanation of the use of these drums is that they were beaten to summon the commonalty to see the immersion of a woman in the ducking-chair.—"Notes and Queries," 6th S. VIII. 143 (1883).

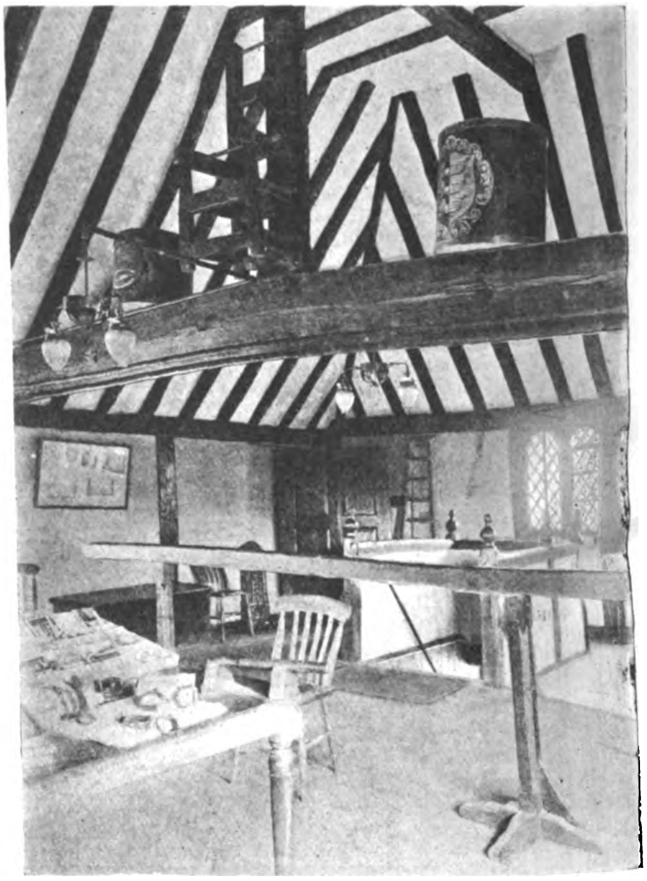
affair, with a rope and a huge running-block used for unlading cargo on the river side, and also for suspending the ducking-chair when a virago had to be punished.

The strange and extraordinarily ample privileges and powers of Fordwich were withdrawn in 1885 by the Unreformed Municipal Corporations Act of 1883. It was then one of the smallest and one of the oldest of these quaint Kentish self-governing municipalities. It seems always to have been a small place, and there is no evidence that it was ever very populous, which makes the extensive and comprehensive nature of its laws and regulations for its government even more remarkable. It was a "burgh" when the Domesday survey was made in 1085—therein termed *parvum burgum*. Its importance therefore must rather have been due to its position. Still, the wonderful corporate powers and privileges it possessed applied to the government of a mere village make an investigation of its past recorded history a matter of extreme interest. It is a striking example of one of the early and admirable forms of self-government which have made the Anglo-Saxon race famous and in the forefront of civilisation.

The name of the place may possibly be derived from *ford-wic*, and would mean the bay (*wic*) on the arm of the sea (*fiord*).[7] This was really the position of Fordwich many hundreds of years ago, when that part of Kent which we know as "The Isle of Thanet" was actually an island,[8] divided from the mainland by a channel, which, where it opened into the English Channel on the south, was four or five miles wide, and which, where it opened into the North Sea, was some three-eighths of a mile wide. This channel is now all dry land, partly the result of the changes in the coast line at the two ends of the channel and partly by reclamation. Into this channel flowed the Great and Little Stour at a place a short distance from Fordwich, known then, as now, as Stourmouth. The estuary of the Great Stour extended from Stourmouth to and beyond Fordwich, and was truly an arm of the sea. The jurisdiction of Fordwich extended as far as Stourmouth, and there is every reason to believe that the village did once occupy such a position. The position at the head of this arm of the sea was no doubt recognised by the Jutish settlers as an eligible one, and it was probably fortified at the ancient fiord, and became for all practical purposes the port of Canterbury. Here the early Kentish kings stationed collectors of Customs, who levied tolls on all imports landed at the town quay.

In 1055 Edward the Confessor, "for the good of his soul and in reverence of Christ, St. Austin, and the Saints," granted all his lands in the town of Fordwich to the Holy Minster of St. Augustine in Canterbury, and threatened to inflict "full doom on any man that should his gift out." This charter was accompanied by another bestowing upon the Abbot the right of "sac and soc"; that is, the right of jurisdiction in all causes criminal and civil within the liberty. In 1085 the Domesday Survey states that the little burgh contains seventy-three messuages, so that it was quite a mere village. Probably the town already enjoyed some sort of municipal organisation; the presiding officer in Saxon times would have been the Portreeve, and no doubt the over-lordship of the Abbot introduced a sort of dual control, which acted as a check upon the free action of the burgesses. The freemen never ceased to chafe against this lording over them until it was finally removed by the dissolution of the abbey in 1538. Even as early as the thirty-first of Henry II. (1184) the burgesses and monks were so seriously embroiled that resource had to be made to the King's Court. Eventually the ventilation of their grievances led the King to strengthen the hand of the freemen by the grant of the charter which stands at the head of their Custumal. Each of the Cinque Ports had its Custumal book, in which were enrolled the charters received from kings and the by-laws which gradually had been evolved by the citizens for their own protection and self-government. The Custumal, in short, in many respects resembles Acts of Parliament operating over the very prescribed unit of a small town—hamlet or village we should call it in these days of large towns. The powers, even of life and death, codified in the Custumal were surprisingly great.

The Custumal of Fordwich is a quarto volume bound in sheepskin, and is no doubt a transcription from an older copy. As the constantly used volume got worn out from use it would be recopied. But besides the laws which governed the town occasionally other matters found their way into this important volume. In the Mayor's accounts for 1572 there is an item "for fyxing and settinge in of the Gospell into the Customall Booke." Most probably the insertion of these chapters[9] from the New Testament in the Custumal Book was for the purpose of administering oaths, for in order to make an oath binding on the conscience of a witness it was formerly not necessary that it should be sworn upon the entire books of the Gospels—a portion selected from each being considered sufficient. Hence, most likely, arose our common expression "enough to swear by." The book, which is kept in the Canterbury Museum, contains 123 parchment pages, inscribed in a modern hand *Custumale Villæ de Forewico preciossimum*. Only seventy-three pages are occupied by the Custumal proper, the remainder being filled with miscellaneous matters, the volume having apparently been bound up in its present form during the second half of the sixteenth century. It is curious to note that the name of



INTERIOR OF ANCIENT COURT HALL.

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[7] *Wick* is found in both Anglo-Saxon and Norse names. The primary meaning in either case seems to have been *a station*. With the Anglo-Saxons it was a station or abode on land—hence a house or a village; with the Northmen it was a station for ships—hence a small creek or bay.

[8] "Venerable Bede gives us the following description of this island as it was in his time. There is, says he, on the east side of Kent, the Isle of Tanet, of a considerable bigness, that is according to the English way of reckoning, consisting of six hundred families, which the river Wantsume divides from the continent, which is about three furlongs broad, and passable over only in two places—viz. Sarre and Sandwich, and goes into the sea at both its heads" . . "Supposing a family or hide of land to consist of no more than sixty-four acres, the lowest that I ever saw it laid at by an author of credit, at that rate there will then have been 38,400 acres of land here, which is above double the number we have now, without the marshes. It is plain, indeed, that some of them were then dry, the course of the sea betwixt the island and the continent having for some time begun to fail, and the water therefore being called Want-sume, as much as to say, there *wants some water*." In a footnote to this is printed: "Mr. Baxter observes in his glossary that by the Jutes, or Danes, *Wand* is used for *water*, and *Sammam* to collect or gather together, so that *Wandsam* signifies a collection of waters, which is a good description enough of an estuary." . . . "Our countryman, John Twine, calls this estuary which divides this little island from the continent *Want-home*, instead of *Wantsume*, which he explains to mean *domesticus transitus*, or the *Home-passage*. To this day the Kentish men call a *Way* a *Went*, so that *Went-home* may signify such a Way. But he gives no authority but his own for this ferry, or passage over, from the continent to this little island, having such a name given to it."—Lewis's "Isle of Tenet in Kent," pp. 5-7. (London, 1736.)

[9] The chapters are St. Matthew, chap. 2; a part of St. Mark, chap. 1; a part of the first 14 verses of St. John, chap. 16. They are in English and follow Tyndale's version.

St. Thomas à Becket has been erased from the line of a Kalendar which contains it, opposite December 29, in accordance with the order issued by Henry VIII. The Custumal proper is written in Latin with the exception of one clause in Norman French, and appears to belong to the second half of the fifteenth century. It is divided into thirty-one clauses, each of which has an illuminated initial letter.[10] The book was formerly regarded with so much reverence that a crucifix of silver was placed upon it. But alas! even such sacred symbols have to give way to the necessities of the mundane moment, and we read in the "Book of Decrees" (1570), "The Crucifix of silver that did lately stand upon the Custumal Book is delivered to Thomas Contrey Jurat to be sold to the use of the Town of Fordwich." I wonder what has become of that crucifix, for such a sacred and also historic relic would no doubt be handed down from generation to generation. It is not likely to have been destroyed.

(To be continued.)

THE BRITISH SCHOOL AT ROME

The memorandum of advice which Mr. Blomfield has prepared for architectural students of the British School at Rome contains so much that is valuable for architectural students generally that we reproduce it verbatim:—

Memorandum for Architectural Students.

The students of the School will, by the nature of the case, have already passed through a fairly advanced course of training in architecture, and it will not be necessary to include in the course the technical studies necessary to the equipment of junior students. The object of the School of Rome should be to develop the systematic study of architecture in its widest sense; that is, as an art of great planning and fine construction, an art, not merely of detail, but of organic design. Although, therefore, the student must make careful studies of details, he should in doing so keep it constantly in mind that these details are only parts of a whole, whether it be of plan or construction, and that the object of his study of details is to enable him to get a complete and accurate grasp of that whole. Students of classical detail in the sixteenth century were content to fill their portfolios with beautifully drawn details of caps and column and friezes. The modern student must take a wider and more intelligent view; he must think of these things in their proper relationship to great architectural conceptions, and fill his mind with the latter.

The First Step.

A student who goes to Italy for the first time will probably feel rather bewildered at the enormous choice of subjects before him. He can hardly turn round a corner in Rome without finding something that he would like to draw and measure; but his time is limited, and it is important that he should not waste it on inferior subjects. He might well spend his first two or three weeks in looking round before settling down to any specific work, and he should look round, not at random, but under some guidance. The Director of the School anticipates the preparation of a brief "Guide to Italy for Students," with dated lists of monuments, grouped by towns, and it is possible that courses of lantern lectures may be arranged in the School. The student is strongly urged to avail himself of these whenever possible, and to consult the Director as to suitable monuments and as to the desirability of studying specific monuments that he may have selected by himself. The wide experience and knowledge of the Director and the Assistant Director will be at the disposal of students, who should on no account neglect to avail themselves of these advantages.

Students' Reading.

In addition to this, the student should supplement the information so acquired by his own reading. The time may be found in the autumn and winter evenings for courses of historical study on the Art of Rome and so much of its general history as is necessary to understand that art in relation to the life of Imperial Rome. Students of special aptitude for research may here and there carry their reading further, with a view to qualifying for the authoritative treatment of Roman art by a trained artist. There is room for such work; but this is not the object of the School of Architecture, and the students, as a rule, will not be able to do more than read with a view to understanding the historical meaning and position of the works of art that they study, rather than with any idea of exhausting the subject. The student should consult the Director as to this reading.

Choice of Subject of Study.

After acquainting himself with the range of subjects, the student will have to make his selection, and in order not to waste time and effort he will do well to ascertain whether his subject has been studied before, and whether it has been adequately dealt with. As a matter of fact, probably most of the subjects worth studying have already been drawn and measured, but this should stimulate the student, if he can, to correct and supplement the work of his predecessor. If fresh and important discoveries are made, the student may make it his business to make a careful study of these in detail, proceeding on the material collected to make his restoration. It is of vital importance that in all "restorations" the most careful and exact measurements of the "état actuel" should first be taken. This habit of exact survey is a valuable training in itself. Students sometimes shirk the labour of careful plotting and measurement, and prefer the sketch of some picturesque detail, however inaccurate, provided the effect is brilliant. This is a disastrous habit of mind, and leads to loose thought and careless and slip-shod design. The student in the Faculty of Architecture should recollect that he is to be an architect, that it is his business to get to the root of the matter, and that when he sacrifices accuracy to brilliant effects of draughtsmanship he is usurping the function of the painter. The architectural student must work systematically and consecutively if he is to get real benefit from the study of old buildings. In this sense, he must work with the rigorous method of the scholar and the man of science.

The Range of Subjects.

The question will at once arise, what kind of buildings should the student select. Should he limit his choice to the buildings of Imperial Rome? Should he include the buildings of the Renaissance? Should he even go further afield, and take in Gothic and Romanesque? All these are worth studying, but not all equally so under the specific condition of studentship at the School at Rome. The object of that school is to train architectural students to be really accomplished architects, men of high attainment, thoroughly grounded in all that makes the art. Any one of the subjects mentioned is so wide in its range that it would be impossible in the two or three years of studentship to master very much more than their rudiments, should they all be attempted. It will be necessary, therefore, for the purposes of training, to make a definite selection. In view of the fact that Rome has for centuries been the centre of study of Classic architecture (of course to be reinforced by study in Sicily, Greece, and, if possible, Asia Minor), and that the Renaissance is a modern version of Roman architecture given by some of the greatest artists in the world, it will be best to limit our selection to the Classical architecture as defined above, and as further interpreted by the great architects of the Renaissance. The study of such great architectural conceptions as the Pantheon, the Colosseum, and the Baths of Caracalla will be of first-rate educational value to the modern student. Scarcely less so will be the study of the great monuments of the Renaissance, St. Peter's and its Colonnade, the Farnese Palace, the Massimi, and many other admirable examples of what men of genius can do with the terminology of the past in expressing their own ideas.

This, however, will by no means exhaust the work that the student has to do. He must also improve himself in the power of design, and the time-honoured method of doing this will be the reconstruction of some ancient building on ascertained data; properly worked out this will give ample scope for his abilities both as a designer and draughtsman.

Restorations.

The necessity of conscientious accuracy in the survey of the monument as it is, I have already pointed out. The survey will provide his essential data to be supplemented by all such information as can be obtained from published writings as to the purpose of the building and out of these data he may build up a reconstruction of the entire monument as it originally existed, supplying by reasoned consideration of the existing data all that is now missing, and presenting the whole with careful regard to accuracy in its historical environment.

In regard to the latter point and to all archæological points lying outside the technical details which the student's own knowledge should enable him to understand, he should avail himself of the expert advice of the authorities in the School of Archæology. It will probably be desirable that the student should devote his first year to studies in Rome, his second and third to travels for stated periods and objects, and to the working out of the designs which the student will be expected to make during his studentship and to bring back with him on its completion. In regard to architecture, then, I take it the student on his arrival at the school will look about and consult with the directors as to the work he should study, whether ancient or relatively modern, and will devote himself at first to the improvement of his technique, supplemented by systematic reading, including some study of Italian, and from that he will proceed to further study, to travelling, and to the preparation of these finished designs and drawings which will be the visible results of his studentship, but throughout his course the student should avail himself to the full of opportunities of getting into touch with painters and sculptors, learning what he can of their respective arts, endeavouring to grasp their point of view, their aims and ideas, mastering so much of their technique as will enable him later to work in intelligent sympathy with the sister arts. It is one of the special privileges of the School at Rome that the three arts can meet here on common ground, and it is a privilege that should on no account be neglected. The architectural student should take his part in studying from the life as the foundation of fine draughtsmanship, and should acquaint himself with the rudiments at any rate of modelling.

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[10] The full text of the Fordwich Custumal is set out in Woodruff's "History of the Town and Port of Fordwich," to which book I am indebted for much information.

Relations with Painter and Sculptor Students.

I need not dwell on the charm of this comradeship with other artists. Students in the old Academy schools retain pleasant memories of their association with painters, sculptors, and architects, and of the place where, perhaps, they got their first glimpse of the actual meaning and mecanique of the work of artists. The students of the School of Rome will have far greater opportunities, opportunities that may be even too easy if you compare them with those of the far-distant days when the first batch of students of the French School at Rome took six weeks on the journey, doing the best they could on the modest pittances doled out by Colbert. Out of these humble beginnings, and after many vicissitudes, including even temporary extinction, has grown the world-famous School of the Villa Medici. It will rest largely with the energy and enthusiasm of its students whether our British School at Rome is to be a worthy rival of that school, and whether it will lay the foundations of a sound tradition of the arts in this country. For the ideal and ambition of the student should be nothing less than that. Each, as he returns after his training, should be in his way a centre of illumination, he should reinforce the ranks of that devoted minority who stand for high ideals in every branch of art.

THE PRESERVATION OF ARCHITECTURAL MASTERPIECES.

We have recently had in the Press a lively discussion on the necessity for a Ministry of Art. Various arguments were advanced on either side of the controversy, and those that were used against it particularly emphasise the hopelessness of any bureaucratic measures unless the public itself took sufficient interest in matters of art.

Yet there is another point which needs emphasis at this juncture. Our artists seem to forget that whatever may be the rôle of the Government or the public, it is the artists who are, in the nature of things, the first and principal guardians of social art, and, with a special force, this applies to that most social of all forms of art which is represented by the architects. Are the artists awake to this principle? The facts seem to voice against it. We have, for instance, the paradox of our art societies. Think of the number of persons interested and working in art who form all sorts of societies with the avowed object of furthering art. Well, they are not slow to learn to tread on the spot and look backward. Strange, however, as it is, it seems only natural, as after all conservatism is the very essence of every social organisation. But one other thing appears much less comprehensible. Granted that there is so much conservative spirit in our art societies, why not, one may ask, do the right thing? Why not concentrate the efforts on the *conservation* of the treasures of art which the past generations bequeathed to us? And, as regards architects in particular. If stirring the public on the question of architectural policy, so to speak, is an aim worthy of an organised effort, is not the awakening of the artistic conscience of the public over the vandalic treatment meted out to the great monuments of the past as much important and urgent?

The following two instances may be quoted here as an illustration for the need of continuous vigilance and active effort in this direction. They are taken at random simply because they happened to strike the eye of the writer of these lines. There can be little doubt that other instances, and much more striking too, could easily be found.

To quote the first instance. Consider the present state of that important public building, the New (London) Corn Exchange in Mark Lane. One generally passes this building without taking much notice of it. Squeezed between other houses in a narrow street which hardly allows of a general view of the edifice, it opens to the passer-by only the sight of its basement, the columns sunk nearly into the pavement and the dinginess of its paint. It is only when one stops at a distance to get a sight of the building as a whole that one realises its great beauty. But not only the beauty. The neglect and carelessness with which the building is treated by its present owners and occupiers seem hardly less conspicuous and striking. One thing in particular seems little short of vandalism. The magnificent front, consisting of a central Doric portico and two immediately adjoining wings, is wantonly marred by the state of the left wing, which is painted light yellow against the dark grey paint of the rest of the building, and displays a number of ugly signboards stating the wares of a restaurant. Could anyone imagine a corner of the Royal Exchange painted differently from the rest of the front? And yet the Corn Exchange Company seem to take a similar thing as quite natural. And natural it must appear to them considering that they do not even know who is the architect of the building. Their archives, at any rate, do not contain a single reference to him—a fact really remarkable, particularly when compared with the strong feeling held by the original builders on the external appearance of the building. In their prospectuses announcing the formation of a company for building the New Corn Exchange (1825), they thus expressed themselves regarding the old building: "In this age of improvement it is a disgrace to the metropolis and calls for immediate remedy," and they offered such in the erection "of a commodious and handsome Exchange."

Perhaps it will not be out of place to say that the New Corn Exchange was built in 1828 by George Smith, F.R.I.B.A., in collaboration with A. B. Clayton. George Smith was born in 1783, and during the greater part of his life occupied the position of surveyor of the southern division of the City of London. He held similar posts to the Mercers' and Coopers' Companies. The suburban towns contain a number of his creations. In London he built the new stone tower and entrance to the Royal Exchange, the old Gresham College, the London Bridge Railway Station (the first railway station in London), and several other buildings. The new Corn Exchange, a noble specimen of the Roman style, was undoubtedly one of his best creations. It has obviously suffered from the raising of the pavement and the cutting through of a side entrance, as the original perspective elevation of the building still preserved to our time shows it to much greater advantage. It will be a veritable crime if no one takes care to restore to the building its past beauty. It is a duty of the existing architectural societies to take immediate steps to this effect.

But it is not only in protecting monuments of the past that they could prove of immense service to art and the public. Many old buildings are kept in comparatively good state. What they often particularly suffer from is the indiscriminate building up of surrounding sites, carried not only without any care for the general ensemble, but sometimes with an utter disregard of the old erections. Perhaps it will not be within the power of any architectural society to restore to the great creations of art their apposite surroundings, but one thing they certainly could do—*i.e.* whenever alterations are proposed in the near neighbourhood of artistic buildings to advance publicly and unremittingly the interests of the latter, so that they shall appear to the best possible advantage.

A case in point is presented to us by the alterations carried out on the site of the old General Post Office. When the old building was pulled down the Londoner was startled to find that it suddenly revealed to him a building of fascinating beauty—the Hall of the Goldsmiths' Company. But for the demolition of the old Post Office very few would ever know what a masterpiece of architecture was hidden in a narrow and unremarkable side street. Now that we have discovered this wonderful edifice we do not wish to be deprived of it. This is really a matter of immediate public concern. Amongst the many great buildings of the Metropolis, few are so intrinsically beautiful as this admirable creation of Philip Hardwick. Executed in one of the happiest and richest styles of Palladio, it charms the eye with the fullness of its proportions, the extreme simplicity of its cubic form and the living sumptuousness of its columns, so feminine in their outlines and so speaking in their ripeness. Can the Londoner afford, we may ask, to have this grand erection blocked out from his sight? Whatever therefore the Government may build on the site in front, it is the duty of all interested in architecture to secure as unobstructed a view of the Hall for the eternal enjoyment of the public as is within their power.

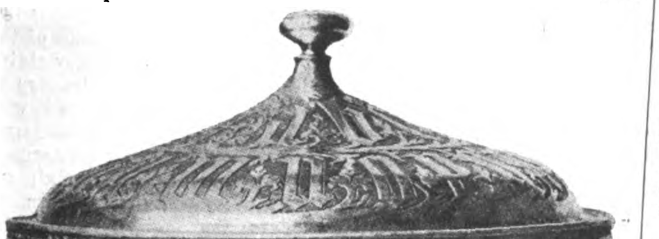
With the above two instances, we may conclude our plea for an active effort in this neglected sphere of artistic culture—the *preservation* of works of art.

We are now witnessing a revival of interest in classicism, and this will possibly enable us to see how valuable are the monuments bequeathed to us by the generations of Classic architects, and how much beauty is embodied even in the creations of the beginning of the nineteenth century, which we have been so much accustomed to regard with a spirit of patronising superiority. That this attitude has hardly been warranted becomes clearer every day.

IMPORTANT GIFT TO THE VICTORIA AND ALBERT MUSEUM.

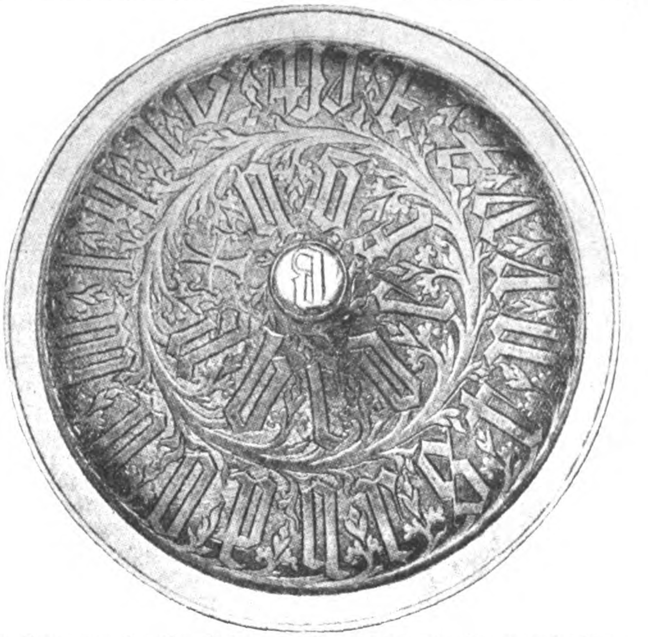
By a generous act of private munificence the Victoria and Albert Museum has just come into possession of one of the most beautiful existing examples of a Mediæval English craftsman's work, the silver-gilt covered bowl formerly at Studley Royal Church, near Ripon. Mr. Harvey Hadden, the donor of this splendid gift to the nation, has for some time past shown his interest in the building up of a worthy representation of English silversmiths' work in the Museum, and by the donation of this superb object he has endowed the collection with an example of which the importance can hardly be overestimated.

The form, proportions, and decoration of the Studley bowl are alike admirable, and illustrate to the full that instinct for beauty possessed by our English craftsmen of the Gothic period, which to us of a more mechanical age seems inspired. Its most remarkable feature is the chased and engraved decoration with which the surface is covered, consisting of leafy wreaths that form, both on bowl and cover, what has been happily termed "a sort of tree of knowledge," inasmuch as they bear on short stalks the characters of a black-letter alphabet, preceded by a cross and concluded by a group of contractions used in Mediæval Latin manuscripts. From the character of the design and of the lettering it is evident that the bowl dates from the latter part of the fourteenth century. It is interesting to know that by a will of not more than fifty years later, preserved at York, John Morton, Esq., of that city, bequeathed in 1431 to his cousin Robert Gaytenby, "unum collok pece argenti cum scriptura A B C in cooperculo (*i.e.* a silver bowl with the A B C inscribed on the cover), apparently a bowl of a similar kind. It is clear from the description of it that this other Yorkshire bowl was a piece of domestic and not ecclesiastical plate, and there is no reason to suggest any different origin for the Studley bowl.



The bowl was examined and discussed four years ago by the Society of Antiquaries, and is fully described and illustrated in Mr. Jackson's "History of English Plate."

A faculty for the sale of the bowl for the sum of £3,000 was granted about a year ago, and at that time was the subject of some discussion. By the decision of the Chancellor of the Diocese the power to sell was made conditional on the object being acquired for the national collection at the Victoria and Albert Museum, a condition which goes far to meet the claims of objectors, and one which it may be earnestly hoped will be observed as a precedent for any similar case in the future. It remains to be stated that the acquisition of the bowl was rendered possible by the kindness of another friend of the Museum, Mr. C. J. Jackson, F.S.A., who with the utmost readiness advanced the sum required during the interval which has elapsed, and by whose intervention at the outset the proposal now happily accomplished took shape.



Mr. Harvey Hadden's splendid generosity in enriching the national collection with so magnificent an object will be fully appreciated by every lover of English art; perhaps it is not too much to hope that his stimulating example may be the means of prompting similar action on the part of others who are concerned for the preservation in this country of the still existing relics of old English craftsmanship.

LONDON COUNTY COUNCIL.

County Hall and Building Lock-out.

At the meeting of the L.C.C. on Tuesday last Mr. J. D. Gilbert asked the Chairman of the Establishment Committee (1) whether the committee had considered the delay in the building of the new County Hall caused by the lock-out in the building trade; (2) did they propose to take any action; (3) was it proposed to bring up any report to the Council?

Mr. J. Salmon replied that his committee had considered the question, but it was thought no action could usefully be taken at the present juncture. There was no intention at present to submit a report to the Council.

Replying to a similar question addressed by Mr. Gilbert to the Chairman of the General Purposes Committee, Major Gray stated that the chief officers of the departments concerned had been instructed to report to the committee on the position in which the Council had been placed by the building trade dispute. He hoped the reports would be before the committee at their next meeting, after which a report would doubtless be submitted to the Council.

Town Planning in London.

Mr. Gautrey asked the Chairman of the Building Acts Committee (1) whether his attention had been drawn to a recent statement by the President of the Local Government Board as to the steps taken by various provincial local authorities in connection with town planning; (2) when it

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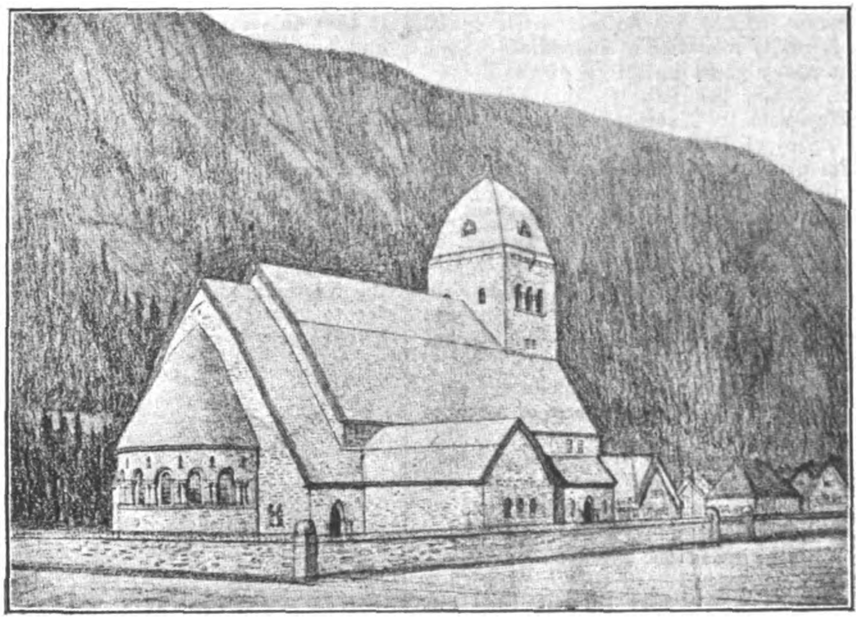

[From *Arkitektur og Dekorativ Kunst.*

PREMIATED COMPETITION DESIGN FOR CHURCH, by Mr. Nordhagen, Architect.

might be expected that the London County Council would move definitely through its Building Act Committee; and (3) when it was expected that the first scheme would be prepared for submission to the Council?

Mr. Andrew Taylor (Chairman of the Committee) replied that according to a memorandum of the Local Government Board 175 local authorities had considered the question of town planning, of which fifty had made application to the Board. The remaining 125 had given preliminary notices in respect of seventeen schemes, or were known to have the matter under consideration. Among those the County Council should certainly be included. The valuer of the Council had been in touch with several agents for large estates in the South-east of London, and the question of the presentation of a preliminary report to the committee would shortly be discussed. As there were a number of preliminary steps which must be taken before a scheme could be submitted to the Council, it was at present impossible to give an absolute date for the bringing up of a scheme.

NORTHERN ARCHITECTURAL ASSOCIATION.

At a meeting of the above Association in their rooms at 6 Higham Place, Newcastle-on-Tyne, on January 14, the following paper was read by Mr. Crossland on

The Making of Gardens.

My first task on rising to address you this evening is to apologise, if not for my own existence, at least for my presence here this evening instead of the gentleman you expected to hear. My chief, Mr. Thomas H. Mawson, Hon. A.R.I.B.A., is at the present time on his way to Athens, calling at the island of Corfu on his way, in response to commands received by telegram from his Majesty the King of the Hellenes; and, though these commands do not come from our own beloved Sovereign, still, the wishes of a King are not to be ignored, and so he has sent me here to-night as his deputy, with instructions to offer to you his sincere apologies for his absence and to explain the circumstances which made it unavoidable.

To proceed now to our subject for this evening, "The Making of Gardens." It is first necessary to examine something of the state of garden making to-day, and what it has been in the past; and when we do this we immediately find that while other branches of applied art have advanced during the last hundred years, there is no doubt that, but for the Renaissance which most of us see the beginnings of in the newer gardens, there has been a steady deterioration from the days when Tudor and early Renaissance houses were surrounded with those magnificent parterres, some of which remain to this day, examples—and I am sorry to say neglected examples—for our guidance which it would be impossible for us to surpass.

I have here a plan of a garden taken from a book about 100 years old which illustrates very well what I mean. It shows one of those arrangements beloved of Capability Brown and his followers, and in which they took as their golden rule the assertion that "Nature abhors a straight line," and, blind to every other consideration, reduced this one-sided assertion to an absurdity. Terrace walls and formal parterres were destroyed because they broke this rule, and everything was arranged in as higgledy-piggledy a manner as possible, under the impression that thereby would the picturesque in its highest form be reached. Needless to say, the opposite was the result.

Now let us compare this state of things with a view of the garden front at Blickling Hall, and in a moment we see how mistaken they were. Here we have a beautiful early Renaissance garden, prim and neat, and yet entirely without affectation in any of its parts. What a pity, we feel the instant we look at it, that the broad expansiveness of its treatment should give place to the utter lack of arrangement of the so-called landscape garden, that instead of the stately acroliths we should have the wretched plaster statue seeming almost to shiver in its scanty classical drapery as the green drip from the trees falls upon it and covers it with dirty streaks, that instead of the charmingly detailed tazzae and vases we see here we should have the stock patterns of the terra cotta maker executed in blood-red material, and that instead of the bold masses of rampant colour in the old fashioned herbaceous borders we should have sickly exotics and bizarre carpet bedding.

How has this state of things come about? How is it that we have turned our back on all this delightful precedent in garden design and descended to such puerilities? It is not so in other lands, as this view of Ashbourne in Pennsylvania will show. Although it is a new garden leaving much to be desired in the way of that clothing of greenery without which our work must always fail, still it shows a broad grasp of the main principles of our art, while we in this country seem to have lost grip with the subject to a very large extent.

The reason for this is that we have neglected the main basic principles underlying garden design, and have tried to do our work without understanding those fundamental rules on which it is based.

I propose, therefore, this evening, first of all to examine the chief of these principles, and, secondly, to show how they may be applied to concrete examples, and then, thirdly, if we have time, to examine drawings or photographs of special types of gardens requiring special treatment rather out of the ordinary, but illustrating again the application of the same principles.

Now, the first main principle of garden design, which is equally a principle of your own great branch of applied art, is that beauty should be inherent and not superimposed. I think I cannot illustrate what I mean by this much better than by using an instance which I have employed many times before. Take a racing yacht in full sail. Here we

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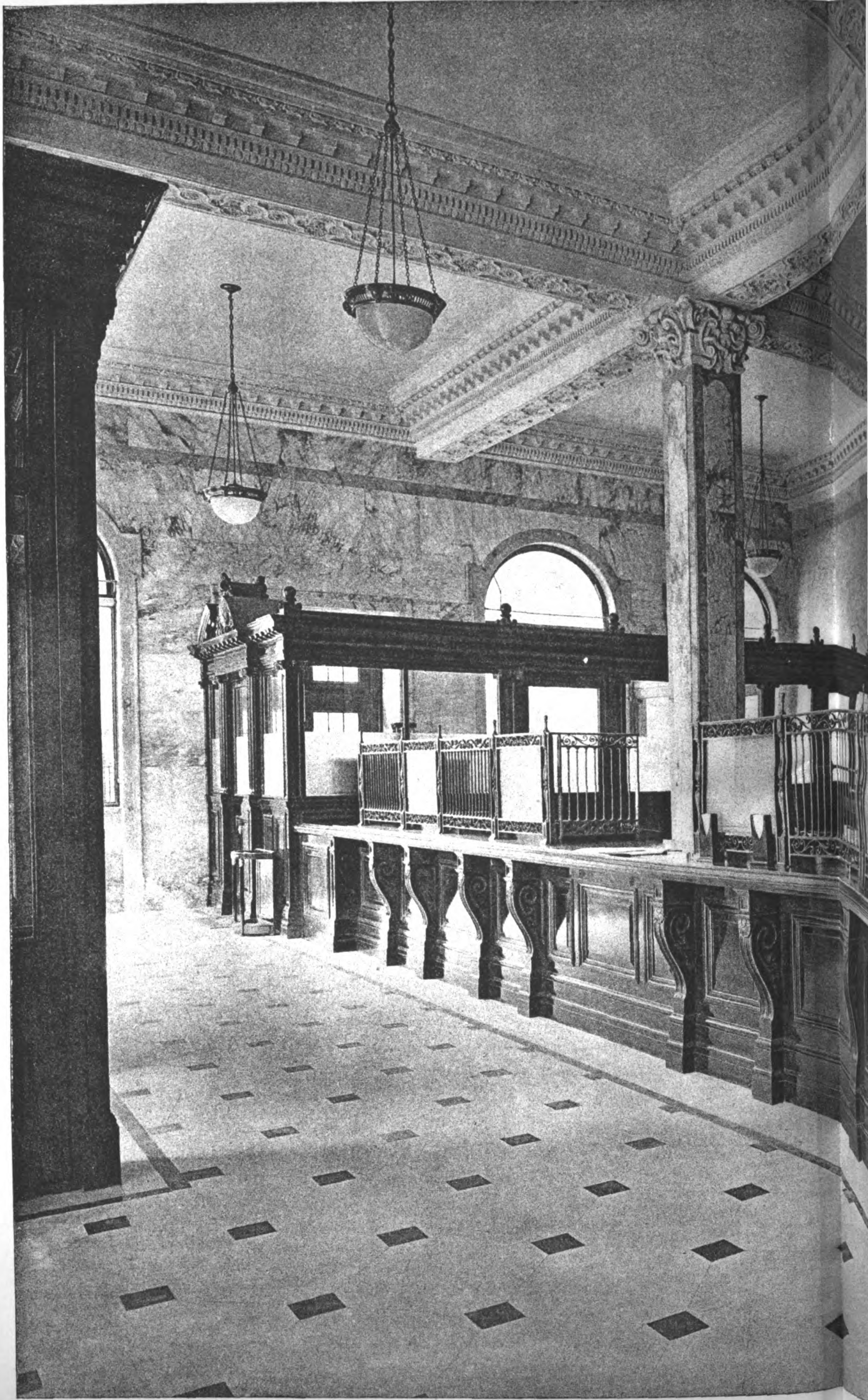

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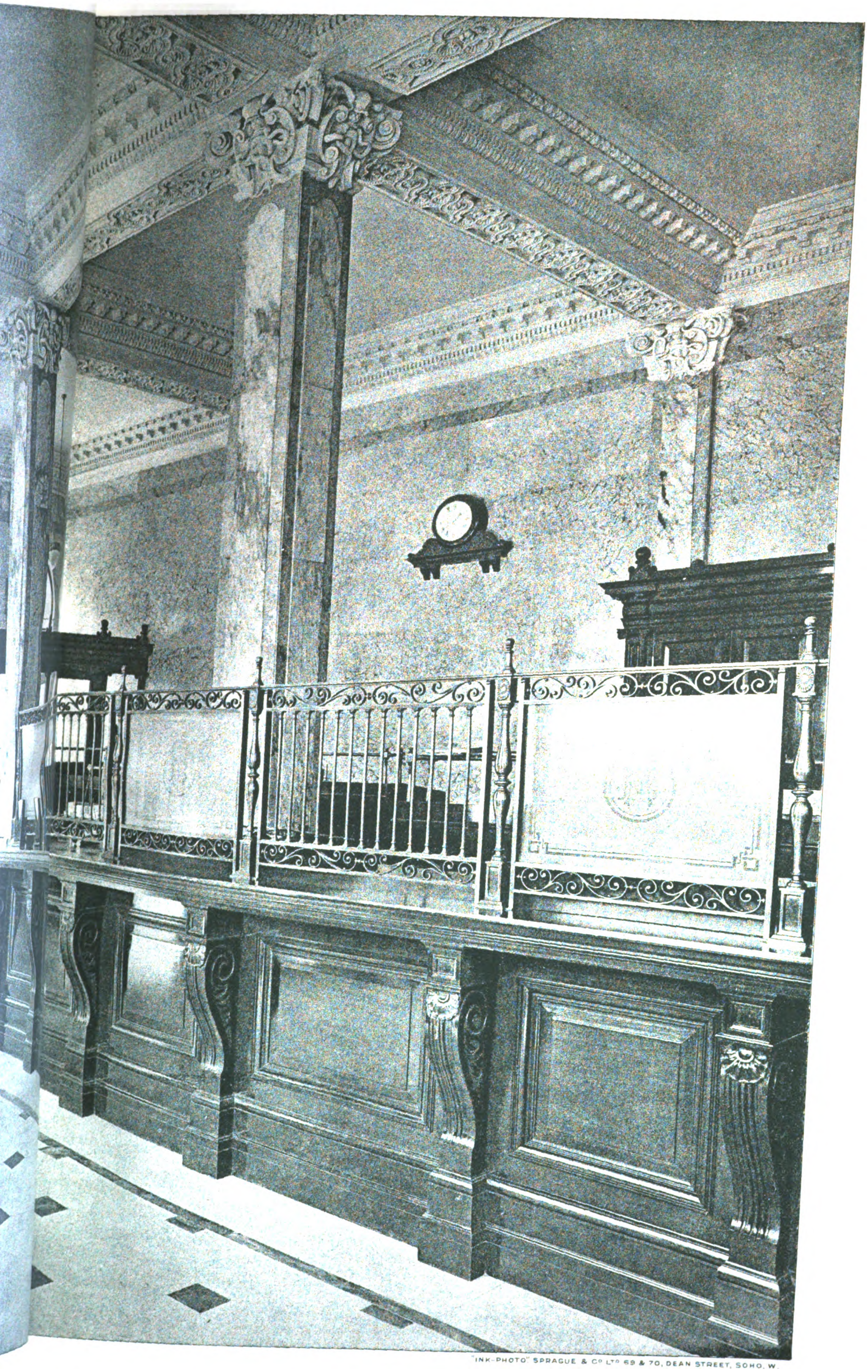

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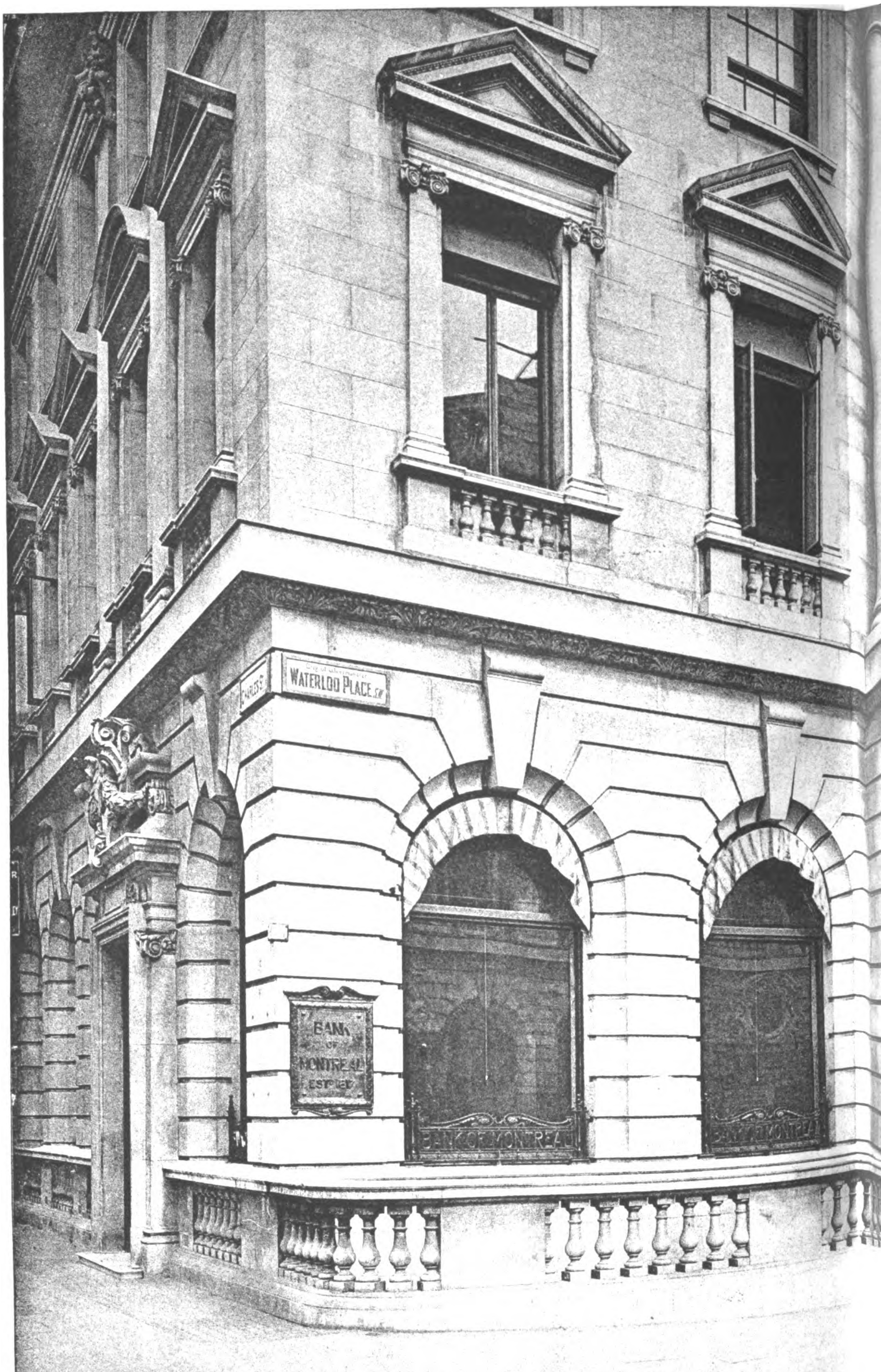
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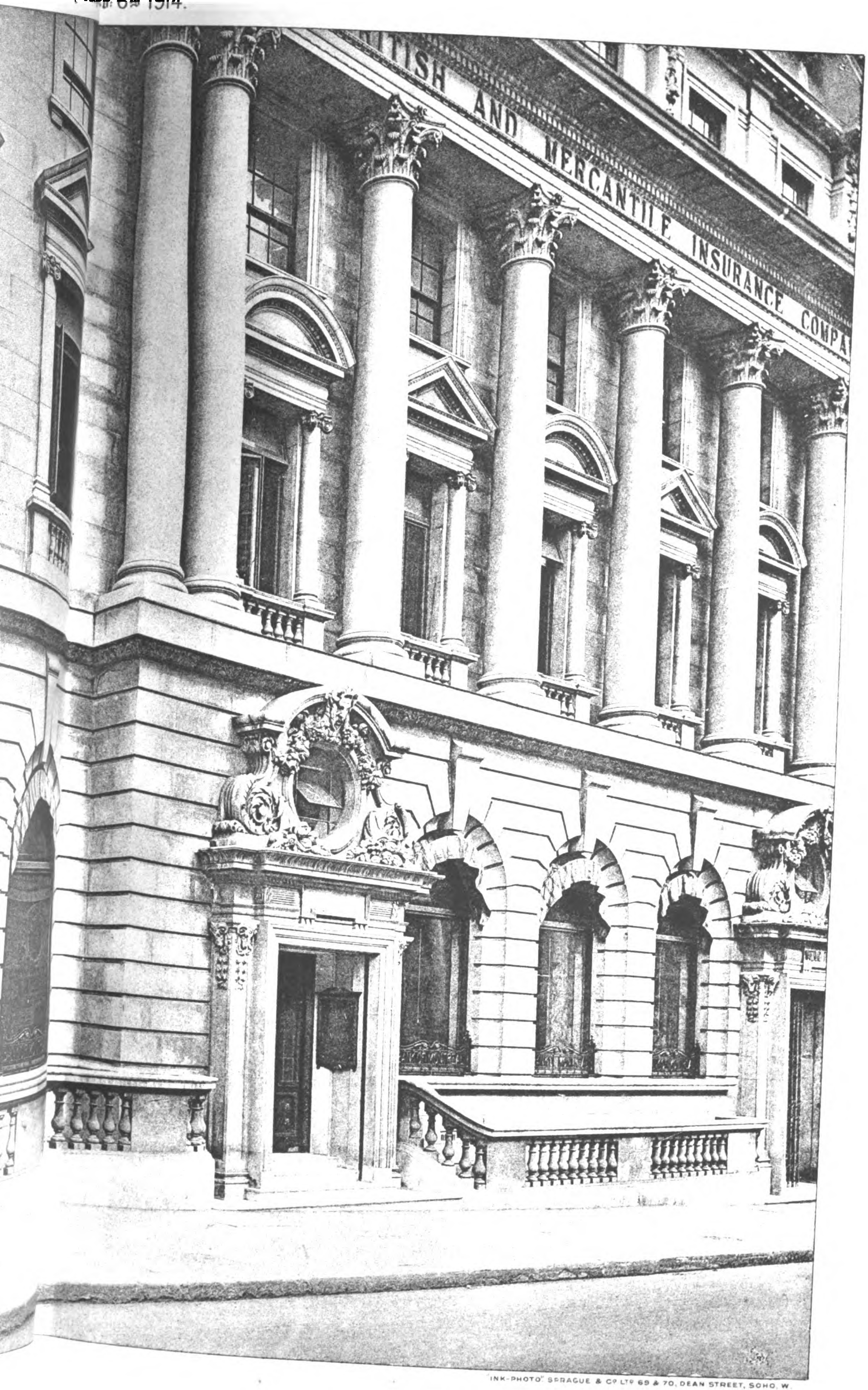
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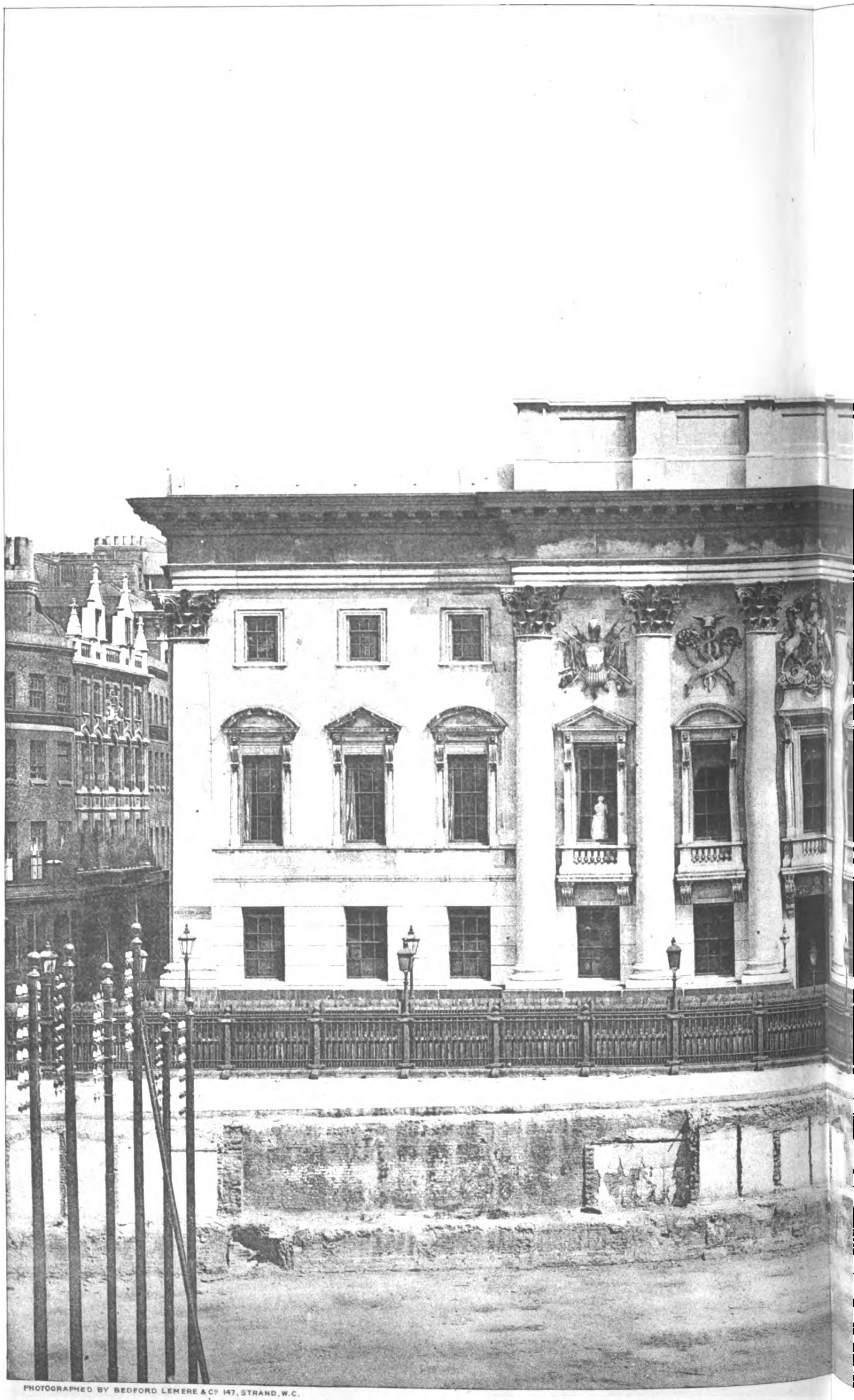

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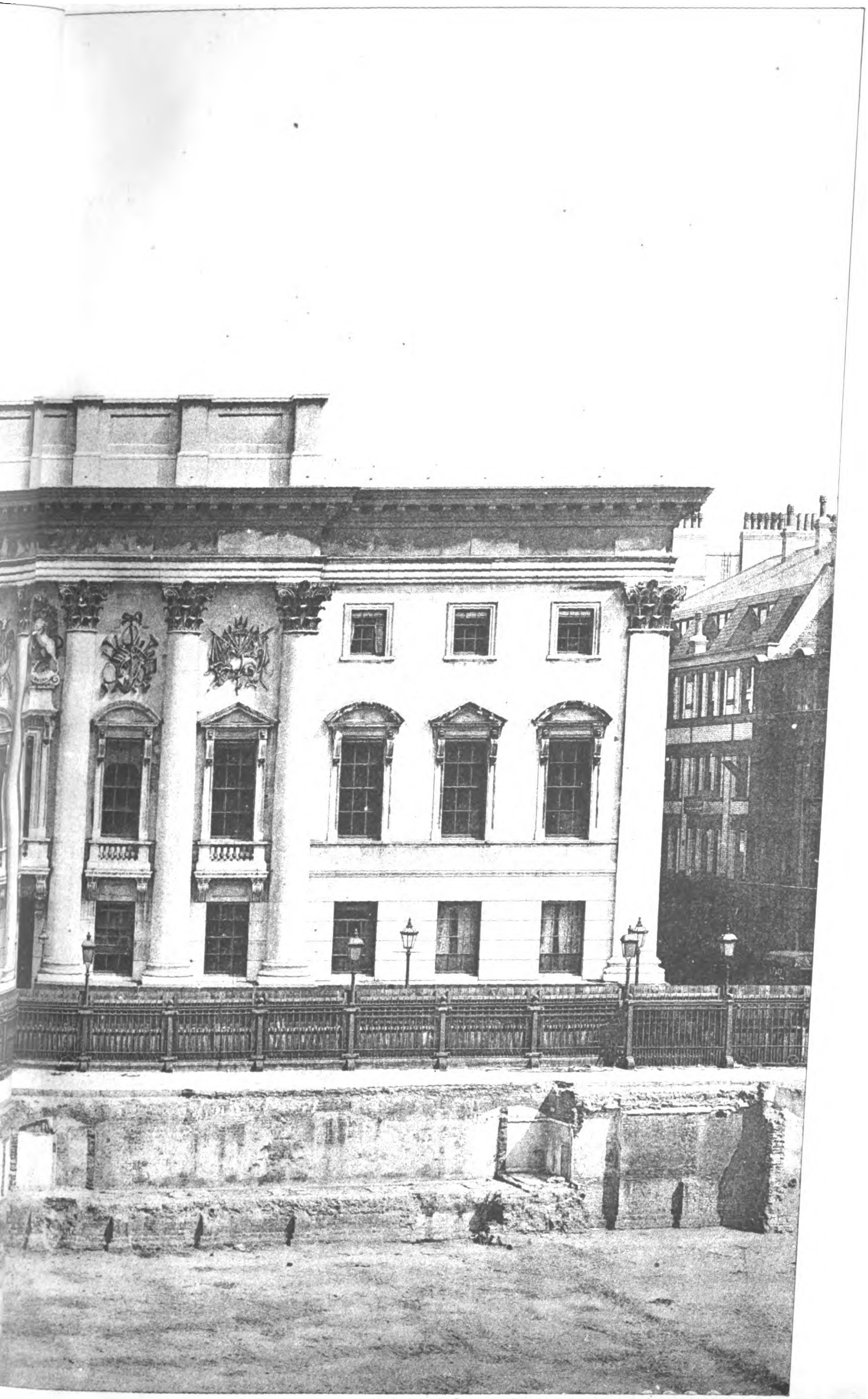

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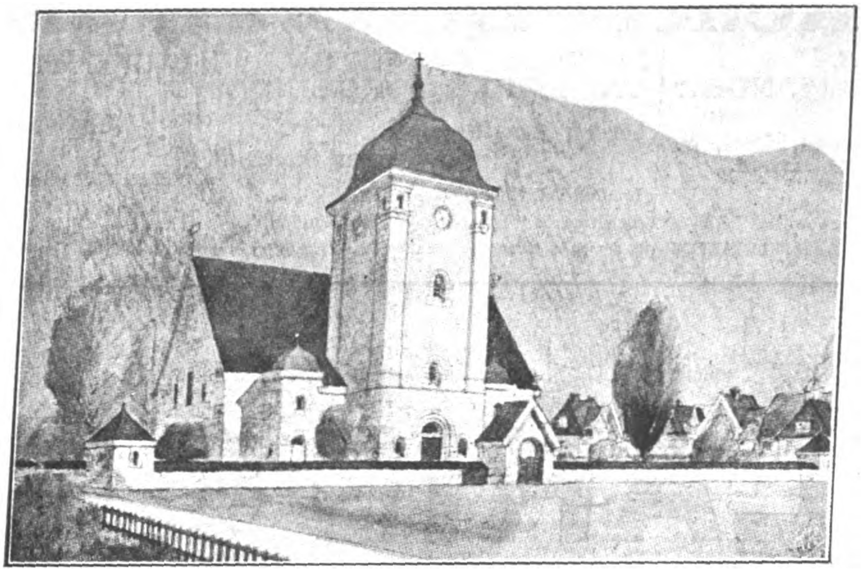

[From *Arkitektur og Dekorativ Kunst.*

PREMIATED COMPETITION DESIGN FOR CHURCH, by Messrs. Berner & Berner, Architects.

have one of the most beautiful things that the mind and hand of man has ever produced, and yet, when we come to think of it, the designer of this had no thought of beauty in his mind, and did not allow the question of artistic effect to influence his design in the slightest. Every line of the hull, every yard of rope, and every square inch of canvas is designed for one purpose and one purpose only, and that is to produce a machine which would go through the water at the greatest possible speed consistent with the greatest amount of safety, and it is merely because this utilitarian purpose is served so well that the result is so beautiful. For 6,000 years the sailing boat has been going through an evolutionary process, and it is because it has got so far in that process and has got so near perfection—as near perfection, perhaps, as human ingenuity can bring anything—that it is so beautiful; in other words, its beauty is inherent, and not superimposed. It is the same throughout Nature. There is nothing in Nature which does not serve, first and foremost, a utilitarian purpose, and it is because it performs that purpose so well and so efficiently that it is beautiful.

Let us take another instance. Here is a photograph of some very early motor-cars. Now, I am far from saying that the average motor-car is a thing of beauty and a joy for ever, but I do say this, that if you compare in your minds the view I have here with a modern motor-car I am sure you will agree with me that, as this purely modern mechanical contrivance approaches mechanical perfection, so it approaches beauty, and this is the spirit in which we must design our gardens. Everything must be produced with an eye to an obvious *raison d'etre,* or it will fail in its first intention of beauty.

The second main basic principle of garden design which I would lay before you is the avoidance of incongruity. It is one of the difficulties of garden design that almost invariably the designer has to adapt himself to pre-existing conditions, so that unless he is a man well versed in every style of architecture and of great versatility he will be much hampered in carrying out his work. Here is an example of what I mean.

It is a perspective view of the new terraces and lawns designed to surround the Elizabethan residence purchased by the Right Honourable Cecil Rhodes just before his unfortunate death. The broad principles of the design are by my principal, and the architectural details by Mr. Mallows, working in collaboration with him. In this instance it was necessary to adapt the garden to the Elizabethan house, and I am sure you will agree with me that my principal and Mr. Mallows in collaboration have done this remarkably well. In the second instance I wish to show you we have Lees Court, the ancestral home of Earl Sondes. Before my principal went there this grand example of the work of Inigo Jones was surrounded by uneven lawns broken up by beds of black rhododendrons and other shrubs in an untidy manner and with nothing to suggest any kind of a base for the house itself to sit upon. As will be seen from the photograph, by the formation of a sunk garden it has been found possible to get sufficient fall to allow of a balustraded terrace, on which the house now stands, and which gives it a dignified base, and instead of the clumps of rhododendrons, unbroken stretches of grass have been arranged with flower-beds on either side so grouped as to keep in countenance the severely plain classical treatment of the house, and so that the eye is led up a vista to it along unbroken stretches of lawn.

One other example—a view of the top terrace at Dunchurch Lodge—must suffice for this part of my subject. It again shows a very different set of conditions to be met. In this case the house and everything on the site is modern, the residence itself being by Mr. Gilbert Fraser, F.R.I.B.A., and I think you will agree with me that the house and its surroundings harmonise perfectly.

The third and final principle of garden design which I would mention this evening is the inclusion of all existing assets instead, as is usual, their destruction to make room for something which happens to be fashionable at the time. In other words, we should adapt ourselves and our designs to the site instead of trying to adapt the site to our preconceptions of what a garden should be. In Loudon's "Encyclopædia of Gardening" there is an instance quoted of a professor of landscape gardening who about 120 years ago would tour the country and bring back with him commissions for garden designs for perhaps 100 to 150 sites, and these would all be drawn out in his office on the same plan adapted only so far as the shape of the site made necessary—a policy which, one would think, would bring its own condemnation, and yet this man had quite an extensive *clientèle.*

As an illustration of what I mean, here we have a view of the formal canal at Kearsney Court. Of course all the trees shown on the photograph existed before the canal was made, and yet how well they fall into their places as a part of the formal composition. Nothing really could be better. Here, again, is another instance: some old gate piers at Farfield House, which at one time marked the extent of the garden. These having been extended, they now stand as a dividing point between two different portions of the grounds, and I think that you will agree with me as you look at the photograph that my principal has incorporated the old and the new in a very highly successful manner, and so that there is no sense of incongruity in passing from one to the other.

Mr. Crossland then proceeded to illustrate these three fundamental principles of garden design by a series of varied and beautiful photographs of works done by his principals, Messrs. Thomas H. Mawson & Sons, introduc-

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ing problems of almost every kind which would be met with in everyday practice, and most of which had a direct bearing on the placing or architecture of the residence, so illustrating the intimate relationship in which the arts of domestic architecture and garden architecture must stand to one another.

LEEDS AND YORKSHIRE ARCHITECTURAL SOCIETY.

A GENERAL meeting of the above was held on Thursday, January 29, at the Leeds Institute, Cookridge Street, Mr. A. E. Kirk (the President) in the chair.

After the adoption of the minutes of the previous meeting Mr. Roger Oldham gave a paper under the title of

"ENGLISH HOUSES AND ENGLISH WEATHER."

In pointing out the influence of climatic conditions on the characteristics of the various nationalities, the lecturer spoke of the East, with its philosophical unchanging colour; the faultless beauty of Greece, the strength of Rome, the mediæval pageantry of Italy, the mannered stateliness of France, the trim neatness of the Netherlands and the homeliness of England, the great similarity of Holland to the Fens of Lincolnshire and district, with their big, ever-changing skies, their flat, restful landscapes and general simplicity which produced many artists and poets, all imbued with the great feeling of homeliness so well portrayed in their works.

Allusions to the future of architectural development to suit the ever-changing requirements of modern invention produced some humorous suggestions.

A series of slides shown after the lecture emphasised the various points of argument; amongst others were many excellent engravings and pictures of both Dutch and English artists.

In a spirited discussion which followed, Mr. Smithson proposed, and Mr. Hoffman Wood seconded, a hearty vote of thanks, which was unanimously expressed to the lecturer.

R.I.B.A. EXAMINATIONS.

STUDENTS' APPROVED DESIGNS.

THE Board of Architectural Education of the Royal Institute of British Architects announce that the designs submitted by the following students who are qualifying for the final examination have been approved:—

Subject XII (a).—Design for a Lighthouse.—Messrs. F. A. Addey, W. B. Binnie, G. W. Callander, L. E. Carreras, A. E. Davidson, E. C. Davies, H. Dicksee, H. Bagenal, A. S. Burnett, J. Carey, G. A. Cosser, G. Davidson, H. F. Davies, R. A. Duncan, L. A. Elsworth, J. D. Grant, S. B. Howard, H. B. Leigh, E. C. Preston, N. S. Robinson, H. M. Whitehead, A. J. Wood, N. B. Weekes, J. C. Fowell, A. F. Hooper, G. A. Langdell, E. H. Philp, A. W. Robertson, A. Silcock, F. Williamson, and R. S. Wallace.

Subject XII. (b).—Design for a Golf Club-house.—Messrs. P. J. Adams, H. Andrew, F. A. Darley, J. Blackford, R. Cawkwell, C. C. Cheek, J. A. Clarke, A. L. Dotto, V. Dyson, J. C. Farrer, L. S. Ford, H. T. Goodwin, G. L. Head, H. N. Jepson, J. B. Matthews, D. J. Moss, C. Rowntree, T. A. Sanders, W. E. W. Terrell, R. A. Threadgold, H. S. Triscott, J. D. Watt, J. F. Wilson, C. R. Wright, W. Allison, A. M. Barrowcliff, C. H. Aslin, B. F. Brueton, H. L. Charles, C. J. K. Clark, H. E. Crossland, J. Dickinson, G. M. Eaton, E. Fincham, S. C. Garrett, G. H. Gray, T. T. Jenkins, H. M. Luyken, R. Lone, A. E. Maxwell, W. F. Pennington, S. Rubery, L. H. Shattock, S. G. Soper, A. Thorpe, J. C. P. Toothill, D. W. Walker, P. Whitehead, and Miss Mary Shewen.

THE CONCRETE INSTITUTE.

AN ordinary general meeting of this Institute was held at Denison House, Westminster, on Thursday, January 29, when the following reports were submitted by Mr. S. Bylander as Vice-Chairman of the Reinforced Concrete Practice Standing Committee of the Concrete Institute:—

(1) Draft report of the Joint Committee of Representatives of the Quantity Surveyors' Association, the Quantity Surveyor Members of the Concrete Institute, and the Reinforced Concrete Practice Standing Committee of the Concrete Institute on a "Standard Method of Measurement for Reinforced Concrete."

(2) Draft report of the Reinforced Concrete Practice Standing Committee of the Concrete Institute on a suggested "Tabulated Form for Preparing Quantities for Reinforced Concrete."

The reports were submitted in the draft form in order that criticisms might be received before the final reports were issued.

The first-named report gave a number of headings consisting of a list of parts of construction, classified under the three main headings of

(*a*) Concrete;
(*b*) Centering, shuttering, &c.;
(*c*) Reinforcement;

the unit of measurement to be employed for each being set out together with the manner of measurement. Generally it was proposed that the work on each floor should be kept separate, stating the height from the ground to the several floors. The concrete, centering, and reinforcement for each floor should be kept together. No reinforcement should be deducted from the concrete; otherwise all measurements to be net unless stated, and notwithstanding any trade custom to the contrary.

With a view to simplification and convenience, it was proposed that the units of measurement throughout should be the foot and the cwt. This basis is not departed from by the recommendation that centering for large areas should be measured "per square," for that conforms to the decimal system, being merely a decimal multiple of the foot.

The report also included a suggestion for the manner in which, in cases in which the working details were not complete, engineers should indicate (by drawings), for the guidance of their surveyors when preparing the quantities, the thicknesses and weights of reinforcements. The following took part in the discussion: Mr. S. Bylander (Vice-Chairman of Reinforced Concrete Practice Committee), Mr. George Corderoy, Assoc.Inst.C.E., F.S.I., Mr. F. W. Harrison, F.S.I., M.Q.S.A., Mr. G. C. Workman, M.S.E., Member of Council C.I., Mr. Alan Paull, F.S.I., M.Q.S.A., Mr. F. E. Wentworth-Sheilds, M.Inst.C.E., Vice-President C.I., Mr. P. F. Gleed, F.S.I., M.Q.S.A., Mr. W. E. Davis, M.Q.S.A., Mr. G. M. Nicholson, F.S.I., Mr. A. Alban H. Scott, M.S.A., Member of Council C.I., Mr. R. Graham Keevil, A.M.I.Mech.E., M.C.I., Mr. E. Fiander Etchells, F.Phys.Soc., A.M.I.Mech.E., Chairman of Science Standing Committee C.I., Mr. Percival M. Fraser, A.R.I.B.A., M.C.I., Mr. Joseph Aylott, M.Q.S.A., Mr. T. H. Carless, President Q.S.A., M.C.I., Mr. A. G. Cross, F.S.I., Hon. Secretary Q.S.A., and Mr. E. P. Wells, J.P., President Concrete Institute.

The reports now revert to the committee for reconsideration. Final reports will be issued in due course.

The next meeting of the Concrete Institute will take place on Thursday, February 12, at 7.30 P.M., when a discussion will take place upon Mr. Percival M. Fraser's paper entitled "Factory Construction," which was read at the meeting on January 8, and of which an abstract appeared in our issue of January 16.

THE SOCIETY OF ENGINEERS.

AT a meeting of the Society of Engineers (Incorporated), held on Monday, February 2, the premiums awarded for papers published during 1913 were presented, and the President for 1914, Mr. H. C. H. Shenton, delivered his Presidential address, which he opened by referring to the need for better organisation of the engineering profession and the consideration that the Society was giving to the subject with a view to promoting the well-being of the engineer. They were not arrogating to themselves a right that belonged equally to other engineering societies, but were endeavouring genuinely to increase the interests of engineers in a movement for the advantage of the profession, and the Society was willing to support well-considered efforts that others might make in this direction. He therefore urged that all engineers, whether members of the Society or not, should give any assistance they could by bringing to the notice of the Council matters pertaining to the organisation and betterment of the profession, and by friendly co-operation when possible.

An enormous amount of public money was wasted annually in connection with engineering works that were designed and carried out by untrained or inadequately trained men, and it was necessary in the public interest that engineers should combine in an endeavour to prevent en-

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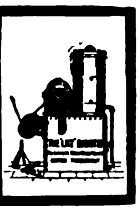

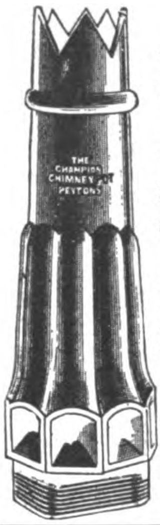
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gineering works being entrusted to those who were not competent to advise properly on such matters.

It appeared, moreover, that anyone might pose as an authority and write a text-book for the use of students, a proceeding that was grossly unfair to the learner and a probable source of error for the unwary. Some text-books that were published were little more than advertisements for some one type of apparatus or process, and in effect were misleading because they entirely ignored other equally useful machines or methods. Some form of censorship seemed desirable for books that were to be placed in the hands of engineering students.

The system that now obtained, by which complete designs for works could be obtained free of charge from manufacturing firms, was not only unfair to the manufacturer and to the consulting engineer, but to the public, who eventually had to pay for the designs that were made but never used.

The address concluded with a detailed reference to recent developments in connection with water supply and sewage disposal.

THE CAMBERWELL SCHOOL OF ARTS AND CRAFTS.

WE have visited with interest the progressive South London Technical School—the Camberwell School of Arts and Crafts—and in the light of the examples of work displayed in the halls of the South London Art Gallery we have endeavoured to realise the benefits accruing to the earnest student. It would be easier to enumerate the subjects not included in the curriculum of the school; easier still would it have been a short time ago, ere bricklaying, masonry, and carpentry were eliminated. There is, however, so much left that the most grasping should be prevented from feeling any sense of grievance against the London County Council.

But without dwelling upon the attendance rolls of 170 for day courses and 700 for evening courses, or upon the *locus in quo*, with its several blocks designed by Mr. M. B. Adams, Messrs. Ernest George & Peto, and the recent £20,000 addition by Mr. W. E. Riley, or further upon the daily routine of study, we will enter a few notes upon the work on exhibition.

A few of the classes are reserved for those engaged in the particular trade, and merely supplement the workshop practice. These include bookbinding, artistic typography, cabinet making, plastering, plumbing, and house painting. In the first two mentioned we noticed some very good specimens of work, amongst the typography being one sample of a prospectus for one of Mr. B. T. Batsford's publications. In the plastering the exhibits show capable production, with a feeling for character, a Gothic foliated capital by Mr. H. Wood being executed with spirit.

The lead-work display, though small, was interesting, the marks of the tools being not too pronounced, much to our satisfaction, as we do not approve the modern affectation for emphasis in that respect. In this section we were particularly pleased with Mr. Bridge's leaf-design panel, with the school monogram in the centre. The house painting and decorating display proved less satisfactory, for in the main the marbling and graining were too violent; but Mr. P. Slark and Mr. Spinks showed some good stencil friezes, and the latter also an excellent panel design.

The representative architectural drawings were by no means inspiring, whether we regarded triumphal arches, entrance lodges, fountains, or clock towers, but we approved Mr. Albert Stokes' design for chancel screen and pulpit. It is no use for a student to design a house and then to work out the cost fancifully at so much (or, rather, so little) a foot cube. In this way it is easy to label a £900 building at a value of £500 or £600.

The stained-glass cartoons shown were nothing out of the way; some of the crayon life-studies were very praiseworthy, but the studies in oil-colour were mostly crude, and, as we think, the one really poor display in the whole exhibition, though we must make exceptions of F. M. Curd's study of an old man's head and F. C. Medworth's nun's head; Mr. Medworth was one of those whose crayon studies from the nude were worthy of note.

The nature studies show good and careful work, but (as we think) the most satisfactory section was the display of lettering, which exhibited none of the affectation of distorted and impressionist "design" so much in vogue a short time ago. E. Hall showed a sketch for a decorative lunette, exhibiting a knowledge of composition and "space-filling" together with a harmonious colour-scheme.

In general, the book illustrations were poor, one of the exceptions being the work of D. Hollom. The exercises in design showed most fruitful labours, and, as far as a mere man may judge, the dressmaking display was good in character.

The wood-carving did not greatly appeal to us, nor was the cabinet work anything to dwell upon, though this is not said in dispraise. Silversmithing and enamelling were other sections displayed, but we cannot find space to enlarge further upon an exhibition which proved very interesting on a first visit, and which certainly calls for renewed inspection.

FIERCE FIRE AT BLYTH AND FIRE PREVENTION.

IN these days, when architects and builders are inundated with fire-prevention appliances and materials, it is interesting and important to hear of a material which has recently done excellent service in actually preventing the spread of a fierce outbreak of fire.

Our Newcastle contemporaries recorded the particulars of an outbreak of fire at a confectionery works at Blyth on January 19. These works were in two portions. The old building, in which fireproof materials had not been employed, was completely gutted. The new building adjoining, and communicating with the other by two large openings made for the purpose of loading and unloading of wagons, had been recently erected, and all the ceilings of this had been formed by nailing "Poilite" sheets only $\frac{5}{32}$ inches thick direct to the wood joists, nothing whatever of a fireproof nature being present between the sheets and the wood flooring above.

The fire extended with great fierceness through the openings to the ground floor of the new buildings and completely destroyed their contents. All the published accounts show that the fire was confined to the ground floor of the new building entirely by the presence of "Poilite" on the ceiling. This is confirmed by Captain Naisbitt, chief of the Council Fire Brigade, who writes as follows:—

"Had the ceiling of the ground floor in the large new building not been lined with these sheets, I am firmly of opinion that, in spite of our efforts, nothing could have saved the whole of this building from being involved."

He adds:—

"I consider that the facts cannot be too widely known in the interests of property owners generally."

The owner of the works, Mr. James Marshall, writes in the same strain.

It is only fair to add that these "Poilite" sheets are manufactured solely by Bell's United Asbestos Co., Ltd., at their Asbestos and "Poilite" Factory, near London.

BUILDING PROGRESS IN THE PROVINCES AND SUBURBS.

A LIST OF WORKS PROJECTED OR COMMENCED.

(N.B.—Local Authorities, architects, and others are invited to submit full particulars for insertion in this weekly list. Where districts are not entered against names of architects and builders the address is as a rule local.)

ENGLAND.

BERKSHIRE.

Letcombe Regis.—Six working-class cottages, for Wantage R.D.C.

Reading.—"Crown" Hotel, Caversham Bridge. Mr. J. Haslam, architect, 156 Friar Street.

CAMBRIDGESHIRE.

Cambridge.—Children's Homes, Ross Street, for the Board of Guardians. Mr. S. French, architect, Llandaff Chambers, Regent Street.

CHESHIRE.

Birkenhead.—Central Fire Station, Manor Road, Liscard (£5,900).

CORNWALL.

St. Dennis.—Workmen's dwellings.

CUMBERLAND.

Penrith.—Boys' Council School (for 312 places).

Wigton.—C.E. Voluntary School.

DERBYSHIRE.

Chesterfield.—Tuberculosis Dispensary. Messrs. W. H. Hard, architects, Paradise Street, Birmingham.

Derby.—Workhouse Infirmary: male block extension for sixteen beds.

High Peak.—Isolation Hospital: extension.

DEVON.

Combe Martin.—"King's Arms" Hotel: alterations. Mr. B. W. Oliver, A.R.I.B.A., architect, Bridge End, Barnstaple.

THE GREAT FIRE AT BLYTH

"Poilite" (Asbestos-Cement) Ceilings.

BRITISH MAKE.

REMARKABLE TESTIMONY.

From the "NEWCASTLE DAILY JOURNAL," January 20.

"In the building a considerable amount of damage was done, and, but for the fact that an asbestos ceiling had been put in between the ground floor and the first storey, in all probability it, too, would have shared the fate of the older premises."

From the "NEWCASTLE EVENING MAIL," January 19.

"Fortunately for the safety of this new building, it has been fitted with fireproof ceilings."

From CAPTAIN NAISBITT, Chief of the Urban District Council Fire Brigade.

Messrs. Bell's United Asbestos Co., Ltd., Blyth : January 23, 1914.
Dean Street, Newcastle.

Gentlemen,—With reference to the fire which occurred at Mr. James Marshall's Northumbria Confectionery Works in this town on Monday last, it is a great pleasure to me to be able to testify to the satisfactory manner in which your Asbestos Cement Sheets behaved under the very severe test to which they were put.

Had the ceiling of the ground floor in the large new building not been lined with these sheets, I am firmly of opinion that, in spite of all our efforts, nothing could have saved the whole of this building from being involved.

The flames from the old premises, which were completely gutted, extended throughout the whole length of the ground floor, which is about fifty feet long, and the heat was so intense that many of the windows were melted, and the door at the extreme end was badly burnt.

On examination after the fire the sheets were found to be intact, and the floor joists to which they were nailed, as also the wood flooring above, appeared to be undamaged.

You may make use of this letter in any way you think fit, as I consider that the above facts cannot be too widely known in the interests of property owners generally.

Yours truly,
(Signed) FRED NAISBITT, Captain U.D.C. Fire Brigade.

From Mr. MARSHALL, Owner of the Bulidings.

Northumbria Confectionery Works, Blyth :
Messrs. Bell's United Asbestos Co., Ltd., January 23, 1914.
30/32 Dean Street, Newcastle-on-Tyne.

Dear Sirs,—In reply to your query, I am glad to express my entire approval at the way in which your "Poilite" Sheets acted in connection with the recent fire at my premises.

It is my opinion that the presence of these sheets enabled the firemen to confine the fire to the ground floor of my large new premises, thus saving them from being burnt down, as was the case with the adjoining older premises.

I readily give my permission for you to publish this letter if you desire.

Yours faithfully,
(Signed) JAMES MARSHALL.

It should be noted that the fireproof ceiling to which reference is made in the foregoing consisted of "Poilite" Sheets only 5-32" thick, nailed direct to wood, nothing whatever of a fireproof nature being present between the sheets and the wood flooring above.

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Devon—*continued.*

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Torquay.—Technical Institute (£11,000).

Durham.

Brandon and Collierley.—Council Schools.

Coxhoe.—Six houses, for Sleetley Lime Company.

Darlington.—Church, Corporation Road. Messrs. Clark & Moscrop, FF.R.I.B.A., architects, Feethams.

Hartlepool.—Elementary Council School, Throston.

Shildon.—Council School (£13,850).

Stanley.—Council School for 250 places (£3,800).

Girls' Council School (for 650 places) and Domestic Science Centre, West Stanley.

Ushaw Moor.—House and shop, for Mr. R. J. Dixon.

Essex.

Chadwell Heath.—Council School: addition (£3,750).

Chesterford.—Four cottages, for Saffron Walden R.D.C.; also

Clavering.—Six cottages; also

Debden.—Six cottages.

Dunmow Downs.—Council School: additional 250 places.

Hadstock and Hempstead.—Six cottages each, for Saffron Walden R.D.C.; also

Langley.—Eight cottages.

Plaistow.—Baptist Tabernacle, Barking Road (£30,000).

Romford.—Council School, Salisbury Road: addition (£640).

West Thurrock.—Fourteen pairs of cottages, for the Parish Council (£5,670).

Infants' Council School.

Hampshire.

Hythe and Milton.—Council Schools.

Portsmouth.—Proposed Manual Training Centre, Stanhope Road.

Sholing.—Boys' Council School, Middle Road (£5,950).

Girls' and Infants' Council School, Station Road (£9,550).

Hertfordshire.

Buntingford.—Catholic Church.

Isle of Wight.

Cowes.—Royal Naval College, Osborne: Cadets' Quarters.

Kent.

Dover.—The "Guildhall" Hotel, Bench Street: alterations. Mr. F. C. Hayward, architect.

Gravesend.—R.C. Church, Northfleet.

Hildenborough.—Workmen's cottages, for Tonbridge R.D.C.

Lancashire

Atherton.—Seven cottages, Wigan Road, for Mr. D. Owen.

Liverpool.—R.C. Church of St. Paul, West Derby (£5,500). Messrs. Pugin & Pugin, architects, 51 North John Street. Messrs. Marr & Son, contractors, Lodge Lane.

Whitefield.—Fifty-eight working-class dwellings (£14,000).

Leicestershire.

Leicester.—Tuberculosis Sanatorium (£12,350).

Lincolnshire.

Spalding.—Hippodrome, St. Thomas' Road, for the Spalding Hippodrome Company.

Norfolk.

Downham Market.—Workhouse: Isolation Wards. Mr. Ashby, architect.

Tunstead.—Parish Church: restoration (£1,200).

Northamptonshire.

Irthlingborough.—House, Addington Road, for the Garage Company; also

Four houses, Finedon Road.

House, Finedon Road, for Mr. Maddock.

Northumberland.

Ashington.—Council School for 1,050 places.

Oxfordshire.

Eye and Dunsden.—Council School; additional fifty places (£800).

Oxford.—Presbyterian Church.

Shropshire.

Wellington.—Twenty-two workmen's houses (£3,800).

House, Sutherland Road, for Mr. J. Bayley.

Offices, Orleton Lane, for Messrs. Andison & Co.

Somerset.

Bath.—"The Old Bank": rebuilding, for the Union of London and Smiths Bank, Ltd. Messrs. Dunn, Watson & Curtis Green, FFF.R.I.B.A., architects, 35 Lincoln's Inn Fields, W.C.

Staffordshire.

Brierley Hill.—Council School, Quarry Bank: proposed alterations and improvements.

Burton-on-Trent.—Picture Palace, High Street. Messrs. Naylor & Sale, FF.R.I.B.A., architects, Smiths Bank Chambers, Market Place, Derby.

Bushbury.—Cottages, for Sir Richard Paget.

Cannock.—Isolation Hospital.

Working-class houses.

Proposed Council School.

Kidsgrove.—Proposed Boys' Council School and Special Subjects Centre, Heathcote Street.

Newcastle-under-Lyme.—Elementary School, off Friarswood Road.

Norton-in-the-Moors.—Proposed Mining and Handicraft Centre.

Smethwick.—Secondary Schools.

Stafford.—County Council Offices: proposed extension, Martin Street. County architect.

General Infirmary: new laundry. Mr. H. T. Sandy, architect, 22 Greengate Street.

Stoke-on-Trent.—Eight houses, Hartshill, for Messrs. Jones & Hilton.

Tamworth.—Cemetery Chapel.

Wolstanton.—Council Offices (£6,000). Council surveyor.

Wolverhampton.—Council School, Walsall Street: additional 350 places.

Warwickshire.

Birmingham.—Suite of Baths, George Arthur Road, Saltley (£19,300).

Nuneaton.—Children's Homes, for the Board of Guardians: addition for thirty children (£1,500). Mr. E. E. Shepherd, architect, New Bridge Street.

Worcestershire.

Droitwich.—Police Court, &c. County architect.

Yorkshire.

Batley.—Police Station. Council surveyor.

Filey.—Golf Clubhouse.

Hull.—Social Institute, for Messrs. Reckitt & Sons, Ltd.

Leeds.—Children's Hospital, for the Board of Guardians.

Mexborough.—Public Baths (£6,000).

Osbaldwick.—Wesleyan Chapel: alterations and new Sunday School.

Rotherham.—Proposed Technical School.

Y.M.C.A. premises.

Stanley.—Two houses, First Avenue, Newton, for Mr. R. C. M. Currie.

House, Aberford Road, for Mr. J. Leadbeater.

House, Potovens Lane, Wrenthorpe, for Mr. G. Lockwood.

Picture House, Lee Mount, Lake Lock, for Mr. J. W. Johnson.

Yeadon.—Gas Works: retort house. Messrs. G. & G. H. Foggitt, A.R.C.A., architects.

York.—Picture House, Spurriergate, for the York Cinema Company.

WALES.

Abercynon.—"Royal Oak" Inn: rebuilding. Mr. C. M. Davies, architect, 112 High Street, Merthyr.

Barry.—Working-class houses. Council surveyor.

Llanelly.—Market: shops and offices, Stepney Street (£5,000). Council surveyor.

Sully.—Works, for the Anchor Patent Fuel Company.

Swansea.—St. Joseph's School, Convent Street: proposed extension.

Council School, Danygraig.

Tycroes.—St. Edmund's Church. Mr. W. D. Jenkins, A.R.I.B.A., architect, George Street, Llandilo. Mr. J. Evans, contractor, Maesyderi, Ammanford.

SCOTLAND.

Dumbarton.—Houses, shops, &c., High Street, for Trustees of James Thomson.

Edinburgh.—Business premises, Bread Street: additions, for St. Cuthbert's Co-operative Association.

United Services Club premises, Queensferry Street: heightening.

Four employees' houses, Liberton Road, Braid Hills (£1,250). Mr. J. A. Williamson, A.R.I.B.A., City architect, Public Works Office.

Glasgow.—Eight houses, Milncroft, for the Incorporated Glasgow Old Men's Friendly Society and Old Women's Home (£1,600).

Kirkintilloch.—Public Baths.—Burgh surveyor.

Plean.—Parish Church: proposed additions and alterations (£2,300).

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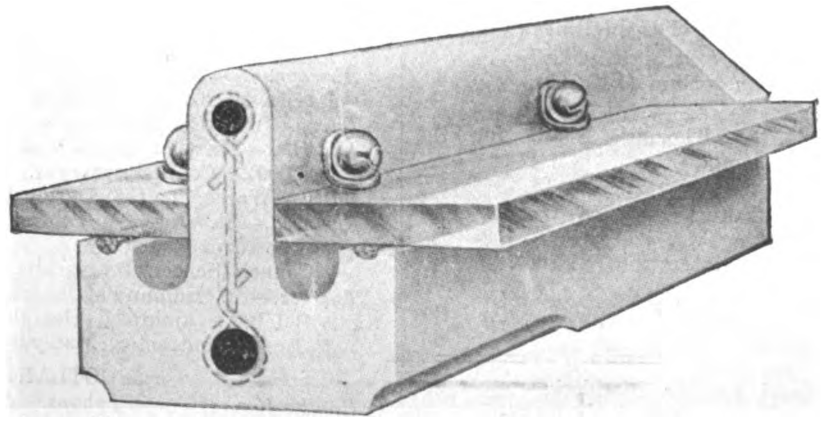

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THE ARCHITECT

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FORTHCOMING EVENTS.

Friday, February 13.

Leicester and Leicestershire Architectural Society : Paper entitled "The Place and Function of Iron in Architecture," by Rev. E. I. Fripp, B.A., at 8 P.M.

Illuminating Engineering Society : Annual Dinner.

Saturday, February 14.

Architectural Association : Visit to Lansdowne House.

Monday, February 16.

Architectural Association : Paper entitled "The Serious Art of Thomas Rowlandson," by Professor Selwyn Image, M.A, at 8 P.M.

Garden Cities and Town Planning Association : Annual Meeting at Carpenters' Hall, at 4 P.M.

Tuesday, February 17.

Nottingham and Derby Architectural Society : Paper entitled "A Tour in Provence," by Mr. E. H. Heazell, Licentiate R.I.B.A., at 8 P.M.

Illuminating Engineering Society : Discussion on "The Lighting of Studios and Art Galleries," to be opened by Professor Silvanus P. Thompson, at 8 P.M.

Wednesday, February 18.

Royal Society of Arts : Paper entitled "The Preservation of Wood," by Mr. A. J. Wallis-Taylor, at 8 P.M.

London Master Builders' Association : Annual Dinner.

Thursday, February 19.

Leeds and Yorkshire Architectural Society : Paper entitled "Some Contrasts between English and Continental Towns and Town Life," by Mr. Patrick Abercrombie, M.A., at 6.30 P.M.

LONDON COUNTY COUNCIL SCHOOL COMPETITION.

Although as far back as April 22, 1913, the London County Council approved the principle of an open competition for obtaining designs for the erection of two public elementary schools, it is only now that the matter has so far advanced as to permit of the publication of the proposed conditions of competition. The object of the competition is that the Council may have an opportunity of comparing the cost of different types of buildings, and of ascertaining what possibility there may be of adopting new methods of treatment with regard to school planning. It is evident, therefore, that the Council do not desire that the precedent followed by the successful competitor in the competition held some years ago should be followed on this occasion. It may be remembered that the winning design of that time very closely followed the arrangement of plan evolved by the School Board for London.

In the present case the instructions to architects submitting designs intimate that competitors are not to hold themselves bound in any way by the design or details of existing London County Council schools, except in so far as is specifically set forth in the instructions. Architects, therefore, have an opportunity of introducing new types of school, and are free to adopt any form of materials, bearing in mind that economy is of great importance.

The designs must, however, be prepared in strict conformity with the building regulations for planning and fitting up public elementary schools issued by the Board of Education, the London County Council General Powers Act, 1909, as to steel work and reinforced concrete, and the regulations made by the London County Council under the said Act; the London Building Act, 1894, and the by-laws enforced thereunder; the by-laws made by the London County Council under the Public Health (London) Act, 1891, and the Metropolis Management Act, 1855, Section 202. These Acts, by-laws and regulations necessarily limit the freedom of choice of architects, both in construction and material.

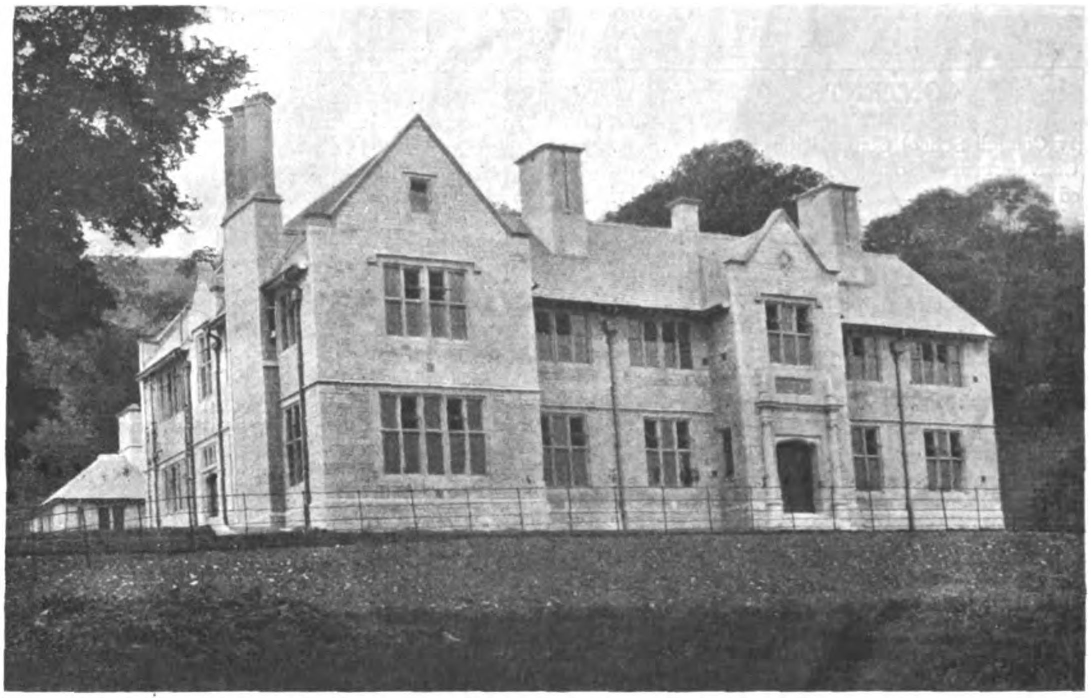
The two schools are not of the same size. One, to be erected at Greenwich, is to be planned for an organisation in two departments, consisting of senior mixed (232 places), with provision for future enlargement by 80 places, and combined junior mixed and infants (260 places), with provision for future enlargements by 88 places. The other school, at Battersea, is to be planned for an organisation in three departments, consisting of 392 boys, 392 girls, and 456 infants. Following the modern principle adopted some time since by the Council, the maximum size of classrooms is to be for 40 scholars, except in the junior and infant departments, where rooms for 48 are to be included.

The origin of this competition being undoubtedly the criticisms which have been levelled at the cost of schools erected from the designs and under the superintendence of the permanent staff of the London County Council, it may be regarded as a challenge to the architectural profession to show that they can produce something better or cheaper—and especially cheaper—than has been done by the Architect's Department of the Council, and, therefore, probably, it is that we find amongst the conditions that no member of the Council nor employee of a member, nor officer, nor employee of the Council, nor the assessor, nor any employee of the assessor is permitted to compete or assist a competitor or act as architect or joint architect for the proposed work.

We have no doubt that the challenge thrown out will be taken up by numerous competitors, but we are fain to admit that we think the odds are against any outside architect being able to do better than those who for years have devoted the whole of their energies to the designing of schools under the Council. At any rate, the odds should be largely in favour of those whom we must consider as specialists.

The Council has appointed Mr. John W. Simpson, F.R.I.B.A., to be its professional assessor and adviser in the competition, and the whole of the designs will be submitted to him. Competitors may, therefore, be assured that their designs will be judged by one who is an expert in school planning, and will receive careful consideration of any novel features they may introduce into their planning.

The Derbyshire type of school is the most notable innovation that has been introduced into English school-planning in recent years, and will doubtless engage the attention of serious participants in this competition. In this connection it may be noted that the number of storeys and of the blocks of buildings is left to the discretion of the competitors; but as special importance will be attached in both instances to well-planned playgrounds it is clear that sound judgment must be exercised in determining the number of storeys and of the blocks of buildings; whilst the stipulation that a roof playground is to be provided for the senior mixed department in the case of the Greenwich will also have a bearing upon the question.



RATHBORNE CONVALESCENT HOME, PARWICH, DERBYSHIRE.—SOUTH FRONT.—Mr. W. R. MOSLEY, Architect.

RATHBORNE CONVALESCENT HOME, PARWICH, DERBYSHIRE.

THIS building has been erected as a convalescent home for women and children, and was completed in June last year. It is built of local fossil limestone, with Hall Dale stone dressings, and the roof is covered with Westmorland slates. The site on which the building has been erected is much elevated on the side of a hill, and commands a grand view of Derbyshire dale scenery. The home has been planned for the accommodation of twenty-five patients, a matron, nurse, and three domestics, but the funds in hand did not permit of the whole building being completed at once, so the east day-room wing was left out to complete the scheme at some future time. The building is heated throughout by a system of low-pressure hot water, with radiators fixed in convenient positions against the external walls. All the rooms have fireplaces fitted with "Heaped" fire, and have also extract ventilating flues. The first floor throughout has been made fire-resisting, on which maple floor boards have been laid in all bedrooms, and also the sitting-rooms on the ground floor. The dining hall has been laid with maple wood blocks. The staircases are of Hopton Wood stone, and the corridor on the ground floor has been paved with Hopton stone laid diagonally. The home has been lighted with the "Fitz" safety petrol air gas. The building contractors were Messrs. Walker & Slater, of Derby. The steel casements and leaded lights were supplied and fixed by Messrs. R. E. Pearse & Co. The heating installation and hot-water supply apparatus has been carried out by Messrs. Jerram & Co. The fire-resisting floors were carried out by the Fawcett Construction Co. The locks and door furniture was supplied by Messrs. Colledge & Bridgen.

NOTES AND COMMENTS.

THE recommendation of the Parliamentary Committee of the London County Council "That the Mall Approach (Improvement) Bill, 1914, be approved" marks a further step in the long-delayed completion of the Mall ceremonial road. We may hope that progress may be now more speedy, so that when the King goes to open Parliament he may not in future be impelled to use the shorter route through Whitehall from Buckingham Palace to Westminster. The Parliamentary Committee's report says:—

"We have been in communication with H.M. Office of Works for some time past with regard to the drafting of the Bill, the form of which was ultimately settled at a conference held at H.M. Office of Works, on January 16, 1914, at which the Chairman of the Council, the Clerk of the Council, the Chief Engineer, and the Valuer represented the Council, and the Westminster City Council was represented by the Town Clerk. The Bill, which is substantially in the form of one of the Council's usual Improvement Bills, contains powers for the execution by the Council of (1) a widening of Spring Gardens on the northern side between the centre line of the existing Mall Approach and a point one and a half chains or thereabouts westward thereof, (2) a widening of the Mall Approach on the north-western side between Spring Gardens and Charing Cross, and (3) a widening of Charing Cross on the southern side between the centre line of the existing Mall Approach and a point one and a half chains or thereabouts westward thereof. The lands scheduled comprise the area bounded on the north by Charing Cross, on the east by the Mall Approach, on the south by Spring Gardens, and on the west by premises in the occupation of the Canadian Pacific Railway Company and the Sun Insurance Office. A clause has been inserted providing that the Council, with a view to the erection of buildings of a suitable design, shall, within a reasonable time after the passing of the Act, sell or lease the lands acquired under the Act but not required for the purposes of the Act, and shall take steps to secure the erection of buildings on such lands in accordance with designs, sections, and specifications to be submitted to and approved by the Commissioners of Works. Some discussion took place over the inclusion of the provision dealing with the approval of the designs, &c., but the Secretary for the Commissioners was strongly of opinion that the Commissioners should have this power. The Secretary for the Commissioners has given an undertaking that the approval of the Commissioners shall be limited to the elevations of the buildings, and shall not be necessary to the internal arrangements except so far as they are dependent upon the elevation. It is provided in the Bill that the Commissioners of Works and the Westminster City Council shall each contribute one-third of the net cost incurred by the Council under the Act (including the expenses of obtaining the legislation) or the sum of £38,333, whichever is less. The Commissioners of Works desire to obtain the Council's approval to the Bill before its introduction into Parliament."

WE are glad to note that the advocates of the scheme for utilising Manchester's Piccadilly site for the erection of an Art Gallery and Library are still showing fight. The proposal of Councillor Todd, the Chairman of the Art Gallery Committee, to combine his building with the opposition schemes of an ornamental open space and a central terminus for the tramcar service by a bold extension of the site in the form of an addition of the triangular block of land, now built upon, containing 1,841 square yards, which is bounded by George Street, Marble Street and Mosley Street, should, now that the Exchange scheme is out of the way, satisfy all but those who fly the flag of economy when any public improvement is proposed.

The preservation of notable houses from destruction might, we think, be very well combined with the inception of "folk-museums," a type of educational institution which Continental nations are actively engaged in providing. Thus we might find a useful purpose attained in the acquisition of the famous Chiswick House and its beautiful grounds of 70 acres, and their preservation for the use of the public, a scheme which the Chiswick Urban District Council has long had in contemplation, but has been unable to carry out for lack of funds. No. 75 Dean Street, Soho, for the present saved from demolition under the operation of the Ancient Monuments Consolidation Amendment Act, 1913, would also form an admirable *locale* for a folk-museum.

We trust that no false feelings of *amour propre* will operate to cause the Court of Common Council of the City of London to flout in resentment the action of the London County Council in writing to the Corporation of London urging that the sixteenth and seventeenth century houses in Cloth Fair shall be preserved. The letter from the County Council's Clerk states: ". . . Of the 22 houses referred to . . . only five are described as unfit for habitation; the others are stated to be fit for occupation, or it is implied that they could be brought into a proper state of repair. The Council, of course, is always in full accord with a vigorous policy of clearing insanitary areas, the evils of which cannot be effectually remedied in any other way. I am directed, however, to urge that the unique character of the buildings proposed to be dealt with in the present instance makes it desirable that, before their destruction is decided upon, every suggestion for preserving them, whether by co-operation with the owners or lessees to secure their being put into a proper state of repair, or by the Corporation undertaking the work under the Ancient Monuments Consolidation and Amendment Act, 1913, should be carefully considered."

The Corporation have also received a letter from the Secretary of the Committee for the Survey of the Memorials of Greater London. He writes: "As this group of houses forms a unique corner of London, dating back to the period before the Great Fire, we would urge you to consider whether it is not possible to prepare a scheme for reconstructing these houses in preference to rebuilding the whole area, which, lying as it does in a sort of backwater, need never be included in any great scheme for the development of the district. A restoration of this description has been most successfully carried out in the case of a Dutch house at Bristol, and we believe that if this can be done, tenants of a wholly different character than the present ones could readily be found, with the result that the whole neighbourhood would be improved, and would, together with the church of St. Bartholomew-the-Great, form a centre of surpassing interest for all lovers of this great City of London." This is a suggestion which we think the Court of Common Council might very well consider sympathetically.

The many architects who are Freemasons must feel disquieted that the monies which they have helped to contribute to the funds of Grand Lodge are proposed to be applied to the demolition of Nos. 55 and 56 Great Queen Street, and will support the protest made by the Local Government, Records and Museums Committee of the London County Council. These buildings, which at one time formed part of Bristol House, are the only houses in Great Queen Street preserving any part of the original elevations, and, with Nos. 59 and 60 Lincoln's Inn Fields (Lindsey House), are probably the sole remains in the district of the building which took place in the early half of the seventeenth century. The principal internal feature of interest is a staircase leading from the ground to the first floor—this staircase is of oak, with carved balusters and strings, the latter enriched with oak-leaves, oak-apples and acorns, and laurel-leaves and berries. The Committee think it would be greatly to be regretted if these interesting old houses were to disappear, and that efforts should be made to preserve them. The Council is recommended accordingly to communicate with the Grand Lodge to that effect, and to express the opinion that it is desirable that these interesting old houses should be preserved to London.

In the Open Examination for the Rome Scholarship in Architecture, offered annually by the Commissioners for the Exhibition of 1851, the following candidates have been selected to compete in the Final Competition: Mr. Thomas Braddock, Mr. Edward Robinson Ferdinando Cole, Mr. Ernest Cormier, Mr. Philip Dalton Hepworth, Mr. Fred Jenkins, Mr. Walter M. Keesey, Mr. D. St. Clair Macphail, and Mr. Bernard Alexander Miller.

It is now stated that there is a possibility of the Mall improvement being carried out without the necessity of an Act of Parliament.

The Phœnix Assurance Company have communicated with the Westminster City Council stating that according to the plan deposited with the Bill a portion of the land owned by them will be required. They are prepared to sell to the joint authority, on very reasonable terms, such portion of the land as is required, and to agree to a suitable scheme of rebuilding. This course, the company point out, would save time and avoid the expense of obtaining an Act of Parliament.

COMPETITION NEWS

BELGIUM.—The Belgian Government has organised a competition in connection with the planning of a workmen's settlement for the Campine coalfield. Sealed proposals, accompanied by plans, must be submitted, not later than December 31, 1914. Prizes of £400 and £240 are offered. A copy of the programme (in French) of the competition may be seen at the Commercial Intelligence Branch of the Board of Trade, 73 Basinghall Street, London, E.C.

LONDON.—Mr. E. Guy Dawber, F.R.I.B.A., has, on the nomination of the President of the R.I.B.A., been appointed by the Metropolitan Water Board assessor in the limited competition for designs for the proposed central offices. It had been decided that it should be an instruction to the selected architects that the cost of the new buildings should not exceed £80,000, but the assessor advised that designs should not be excluded from the competition if the estimated cost exceeded the stated sum by not more than 10 per cent. A recommendation giving effect to the suggestion was approved at the last meeting of the Board, after considerable discussion. The names of the six selected architects are Messrs. Brown & Barrow, Mr. Edwin Cooper, Mr. H. O. Ellis, Mr. E. T. Hall, Mr. H. T. Hare, and Messrs. Warwick & Hall.

ILLUSTRATIONS.

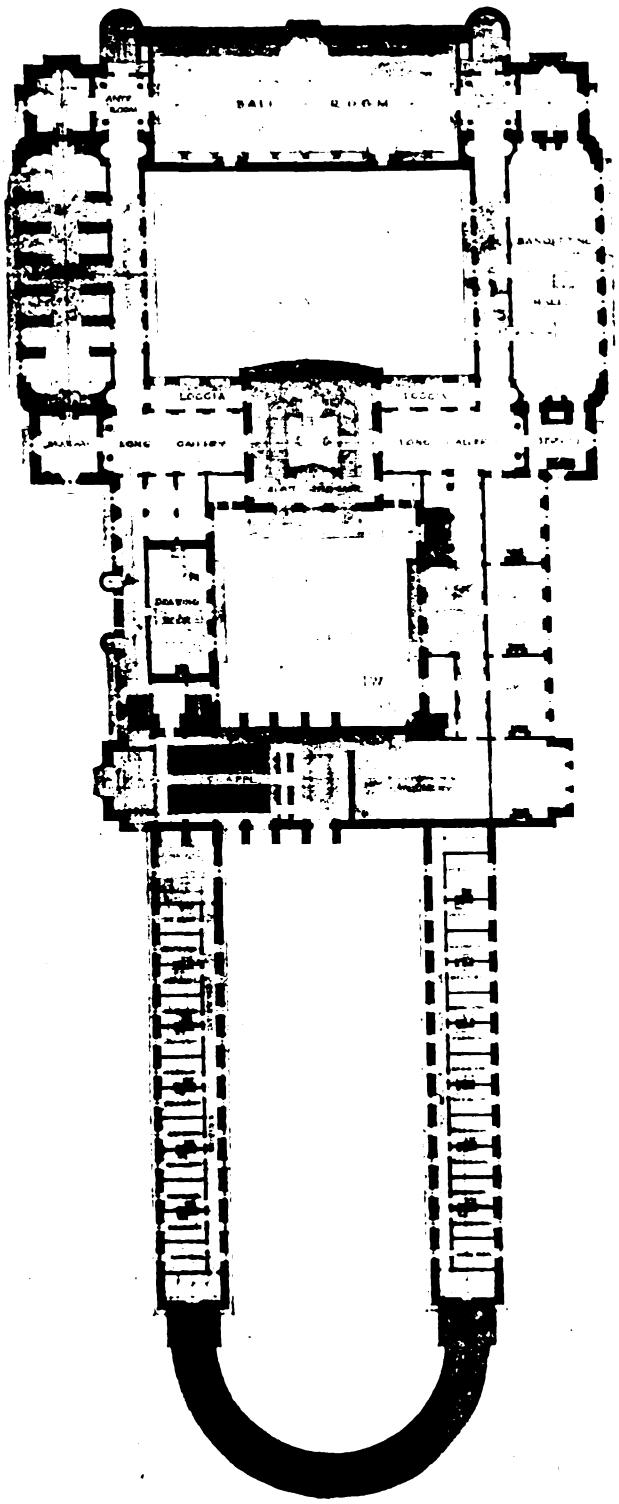
DESIGN FOR AN OFFICIAL COUNTRY RESIDENCE FOR A ROYAL PERSONAGE.

IN the conditions for the Soane Medallion no restrictions were laid upon the competitors with regard to the nature of the site, except that it was to be rural. In preparing his successful design, Mr. Cyril Farey considered that it was therefore necessary to choose a type of country before planning out the general conception. It was felt that a more interesting and romantic type of building on the lines set out in the conditions could be erected on a steep and rocky position than upon a flat site, which would be more suitable for buildings requiring greater scale.

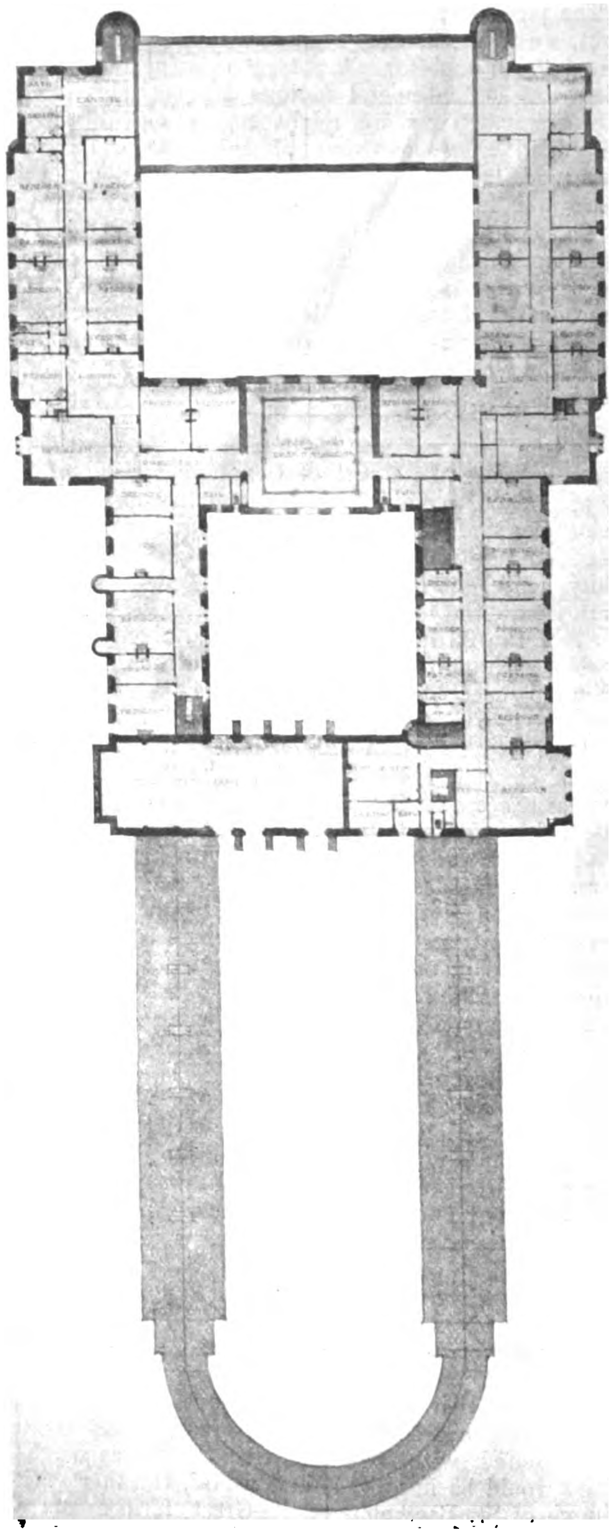
One can behold many such romantic situations in the United Kingdom, and a position on the high land above the river Dee in Aberdeenshire would appeal to some noblemen as an ideal site upon which to erect a residence.

The traveller approaching round the north-east bend of the river would first espy above the cliff the roofs of the dog kennels; then by stages always ascending his eyes would be directed from roof to roof, from chimney to chimney, until they finally rested in contemplation of the corbelled summit of the tower crowning the suite of State apartments and commanding views in all directions.

Here the traveller lingers awhile, and as he resumes his journey, following the direction of the ever-moving stream as it winds towards the south-east, the garden front and tower gradually disappear from the view, lost amidst pergolas, gazebos, and sweet-smelling groves.



FIRST AND PRINCIPAL FLOOR PLAN



SECOND AND BEDROOM FLOOR PLAN.

PROPOSED HOUSE AT AVERHAM.

This is a design for a small house in flat country by Mr. Cyril A. Farey, the winner of the Soane Medallion. The lounge hall has south aspect, and opens on to a piazza facing the garden. A small dining-room also faces south. The kitchen and offices are situated on the north-east corner, and on the south-east the motor house balances with the piazza on the other side. The first floor contains four bedrooms, a dressing-room, and bathroom. The walls will be constructed in brick plastered, and the roof will be covered with grey pantiles.

Mr. David Hughes, of Stanley Grange, Penyffordd, Flint, retired builder, who died on September 1, left £95,586.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

AN ordinary general meeting of the Royal Institute was held on Monday last, the 9th inst., at Conduit Street, W., Mr. Reginald Blomfield, A.R.A., president, in the chair.

It was announced that the Council propose to submit to his Majesty the name of Monsieur Jean Louis Pascal, member of the Institute of France, as a fit recipient of the Royal Gold Medal, for his distinction as an architect.

Mr. Edward Bullough, Fellow of Gonville and Caius College, Cambridge, secretary to the Board of Architectural Education, University of Cambridge, was elected Honorary Associate.

Mr. R. J. Lovell was reinstated as an Associate.

Mr. Reginald Blomfield then delivered the following

ADDRESS TO STUDENTS.

I have again the pleasant task of addressing you students on your work; and after the somewhat strenuous times through which we architects have been passing lately, it is a relief to return to our art itself, and to think of what, after all, is the end and object of all our endeavours—even of those differences which I hope soon to see happily settled—namely, the improvement of that architecture for the furtherance of which this Institute exists. We have, I am glad to say, some able designs sent in this year, and some very remarkable drawings. I note with regret that the study of old work appears to attract our students less than it used to, but Mr. Cave will follow me with a critique on the work in this year's competition, and I invite your very careful attention to what he has to say. I have only one warning to give you, on a point on which I think you will hear more from him, and that is the danger of relying on draughtsmanship rather than on solid design. Mere draughtsmanship is fascinating in itself—personally I appreciate it keenly—but I confess to feeling a little uneasy at the inordinate pains and skill that are now devoted to working up your designs into brilliant drawings. Recollect that the brilliancy of your drawings has no sort of bearing on the quality of the building, the creation of which is the *raison d'étre* of *all* your drawings and designs.

But now that I have fired off this warning, let me add that I find here solid design as well, and that I am sanguine as to the future of architecture in this country, if only our students will continue to approach it as an art and devote to the mastery of its technique an application not less keen and persistent than that which is recognised as indispensable in the pursuit of the sister arts.

Architects must be getting pretty well case-hardened by now to unfavourable criticisms on their art. Modern architecture has recently been arraigned in a well-known daily paper, and quite a pretty storm in a tea-cup has been the result. First, we were told that our only hope of salvation was to leave everything to the workman, in what our critic supposed to be the manner of mediæval building. Dislodged from that position he shifted his ground, and expressed in most eloquent terms his admiration for Greek Classic, even going so far as to annex methods of thought and expression in regard to it that have for years been almost commonplaces among serious architects. But, again, so that there should be no mistake as to the worthlessness of the modern architect, he treats the Classic architecture of Rome and the Renaissance with the utmost contumely, not excepting the architecture of France and England; tells us that it was incapable of expressing emotion, or any of the deeper feelings of the soul; and, regardless of the history of the seventeenth and eighteenth centuries, asserts that this Neo-Classic never had, and never could win for itself, national recognition and assent. No place of repentance was left for the architect, though he sought it carefully and with tears. Replies were made to this attack by architects, but except in the case of one brilliant writer who is not an architect, our critic has ignored these replies, and fulminates on the barrenness of modern art in general, and the futile practice of the modern architect in particular. I do not think, gentlemen, that this little controversy has made any difference in our position. The points that our critic made are points that have been made before in the interminable controversies that have raged since the break-up of the Classical tradition; and the references in his last reply to "Art and Life" are but echoes of the early days of the Arts and Crafts movement, when a serious effort was made by Morris, Cobden Sanderson, and those of us who were associated with these men to put into terms the relations of Art and Life, to show that, if Art was to mean anything, there must be more behind it than a fashion and a trick. Indeed the very term "Art and Life" was part of the title of a volume of essays issued by members of the "Arts and Crafts Society" in 1897. It is a good thing to clear the air now and then and get these things off one's chest, and we are grateful to our critic for having given us the opportunity of dragging some mischievous fallacies out into the open. Otherwise, things are just where they were before; and there is no necessity for the aspiring young architect to burn his books and break his T-square, or to start in to spoil good building material by his unskilful efforts, merely because he does not happen to live in the days of Villard de Honnecourt; or to abjure the building art altogether because he happens to live in the twentieth century and not in the age of Pericles. There is an excellent and simple text for artists as for other working men: "Whatsoever thy hand findeth to do, do it with all thy might"—and, I may add, decline to be entangled in literary cobwebs, however beautifully spun. The wise man does not quarrel with his environment, he tries to make the best of it.

The foundations on which our methods are based are not quite so shaky, so purely arbitrary, as our critic would have his readers believe. Apart from external tradition, apart from the legacy of the architecture of the past in actual buildings, in every artist there has to be taken into account his own individuality, his temperament, his habit of mind, a certain quality which appears in every expression of his life. That temperamental basis is itself partly the result of heredity; it may contain within itself the germs of long-buried instincts, only waiting for the spark of opportunity to kindle into vigorous life. A famous French surgeon and man of science, who died last year, pointed out, among the last of his utterances, that our thought and our discoveries are often only "the *résumé* of observations of the past, not only of the past from which we directly derive our instruction, but of a past of which we have no conscious knowledge." Are we to turn our back on this? Are we to repudiate all that makes us what we are—that which we have in ourselves, and that what we have acquired by education: *naturam furca expellas, tamen usque recurret.* The genuine Romantic will remain a Romantic, the born Classic cannot escape his instincts, his longing for simplicity of statement, for order, balance and proportion, for the ascetic austerity of the highest art. Those who have studied the development of modern architecture in this country with intelligence and sympathy are aware of a certain definite drift of opinion among varying minds. Men have come together to the same standpoint without conscious thought of doing so. Recollect how Norman Shaw came right out of Gothic to the Neo-Classic of his later days. Shaw possessed one of the keenest and most vital intellects that I have ever come across. He was not the man to change his methods on a mere caprice, but he did change them in obedience to his own instincts and to a feeling that was in the air, and that is daily gathering force and giving stability to the architecture of this country.

I recollect my own beginnings, if you will pardon my referring to them. When I began the study of architecture, I was introduced to a somewhat arid form of Neo-Gothic, which proved inadequate and meagre fare. Romanesque, which seemed for a time an alternative, proved to be incompatible with the conditions of modern practice, with those vertical and horizontal lines which are, in fact, as Mr. MacColl has pointed out, the problem of the modern designer. As one got some sort of an idea of the structural purpose and possibilities of these and other methods, it was borne in on one that the column and lintel of Greece and the arch of Rome were the real materials out of which an architecture could be formed that would respond to modern conditions, and then the whole of one's reading at school and college and elsewhere came in to clinch the bargain. My experience is probably that of many of my colleagues. Not consciously and deliberately, but by the steady logic of facts acting on their individual temperaments they have arrived each at their own idiom, which they neither would nor could change any more than the language that they use.

The results are imperfect, but one step I believe we have made to the attainment of genuine architecture, and that is: we have learnt to think in terms of architecture—we no longer take up a style like a new coat. Personally, I hold that behind every national architecture lie causes deeper than climate, or even material, social and economic conditions, and they are what I have ventured to call elsewhere the root instincts of the race, instincts which assert themselves not in one style only or in another, but in all the varying methods of expression that succeed each other in a nation's history. We call them vaguely tradition, perhaps inaccurately so, because tradition only refers to the handing on from one generation to another. My view is that tradition itself is only a symptom and evidence of deep-seated underlying instincts which will assert themselves from time to time so long as the race is vital, and which can only fail to do so when the life of a race is dead.

This is why the lamentations on the decrepitude of architecture and bleatings on the spread of materialism leave me cold. The race is still as vital as ever. Year after year gallant deeds are done in places far remote from our humdrum London. I believe there are as good fish in the sea as ever came out of it, but we can't expect them to appear on the surface all at once. I think that you, gentlemen, who are beginning your career may possess your souls in patience, and can pursue your art without the paralysing suspicion that, after all, it is no good. It will be all the good in the world if you address yourselves to your labours in the spirit of the true artist, sparing no pains to equip yourself at every point, to really master your technique. And as to styles, don't worry about them. Each man who has anything to say must have a style—that is, a peculiar manner of his own. All I ask you to do is to study deeply and widely before you pronounce definitely and dogmatically for any one method rather than another. Make quite sure that you really understand it, that it is not merely a court suit to be taken on and off, but a part of your intellectual and emotional life.

I have had the honour of addressing you, students, before in this room on the course of your studies, and you, my colleagues, on the position and probable tendencies of modern architecture, and my remarks have of necessity been of a practical character. The practice of a modern architect is so complex that there are many branches of it which have little to do with architecture, but demand practical business aptitude and high integrity. I am glad to say our calling has never lacked such men—men that hold a high and honourable place in our esteem. But to-night I am not dwelling on this aspect of our work. I am thinking of architecture as a fine art. You students are entering on a great calling. You desire to enroll yourselves in the ranks of famous men who from time immemorial have practised our splendid art.

Now there are two conditions of success or failure, and by success I do not mean the building up of a plethoric practice; I mean the development of the artist himself, that energeia or self-realisation which is the aim of every true artist. The conditions are natural aptitude for the art and enthusiasm and faith in your art. It should be recognised far more clearly than it is in modern life that an artist is *ipso facto* a rare and exceptional being, and his work a fruit that does not grow on every tree. Other men may be able in commerce, more skilful in administration, more efficient in action. They will find themselves and their work. But here and there is found one with exceptional imagination, observation, skill of eye and hand, who sees in the common aspects of things, in forms, in colour, deeper meaning than is revealed to others; who, if he is a painter, finds in what to an ordinary man is a pleasant landscape new possibilities of colour and form; or if he is an architect, catches in the plan and purpose of a building, possibilities of rhythm and proportion, of mass and composition, that would never occur to minds of narrower range, not trained to search for those qualities, or to endeavour to embody them in the visible forms of building. Special qualities and endowments are necessary if a man is to become a good architect which are not necessary in the case, say, of what is generally called business. I do not want to discourage you by putting up an impossible standard; all I suggest is that there should be, to start with, some such aptitude as I have sketched, in order that your labours may not be in vain, and result in disillusionment when it is too late to turn back. That you students, winners of prizes and others too, possess this aptitude I am convinced by the work of yours that I have seen.

The second condition that I gave you is enthusiasm and faith in your art. Now, I do not want to pitch the note too high. We all of us take up this art with the idea of making our livelihood by it, and our ideals have to be subordinated to the stern realities of life. The point I wish to make to you is that this, though of necessity a dominant motive, should not be the only one. The true artist, the true scholar, the true sportsman, have this in common: that they pursue their aims not for ulterior objects, nor for the profits that may accrue, not even for the reputation they may gain, but for love of the thing itself. The artist who studied his modelling with the implacable passion of Zola's tragedy, the scholar who stated with joy that he had found a rare Greek tense "lying snug in Polybius," the sportsman who takes his risks for the thrill of action at its tensest pitch, do these things for the joy of doing them. And this is the spirit with which, through good report and evil report, you students must keep in touch if your work is to live, if it is to be the sincere and genuine expression of yourselves, if the tares are not to spring up and choke the seed that fell upon good ground in the far distant past.

My address is getting dangerously near to a sermon. I expect I am not the first occupant of this chair who, as he nears the end of his term, has been anxious to give his message to the younger generation. Yet I have a feeling that opinion nowadays is too fluid, that it moves too fast, and that when the air is highly charged, as it seems to be now, the danger of running after some new thing may increase at an alarming ratio. I have endeavoured to reassure you as to what I hold to be an entirely false alarm, but that does not mean that there are no dangers in the road. There are, but they are the old ones of the broad and easy road. My text is the familiar one, adopted by the winner of our prize essay to-night "*Per ardua ad astra*," and I should not offer it you had I not confidence in your enthusiasm, if I was not convinced that I am only putting into terms what is in the hearts of all of you. The future rests with you, not with us, your seniors; it is for you to show yourselves worthy of the trust we place in you.

REVIEW OF THE DESIGNS AND DRAWINGS.

By WALTER CAVE [F.].

It was not without considerable hesitation that I accepted the honour of reading a criticism on the designs submitted this year for the various prizes and studentships. Not only is it a somewhat thankless task for anyone to undertake, but, in my own particular case, I cannot help feeling that one who has never competed for any of these prizes can perhaps hardly realise all the difficulties of attempting to set out on paper an imaginary design called up by the few lines of printed matter somewhat vaguely set out in the programme. I am well aware that this vagueness is intentional, and to some it is a spur to the imagination, as can be plainly seen on the walls, where the spirit conceives of magnificent mountain gorges with foaming torrents waiting to be constrained by architectural skill into ornamental fountains—"The Golden Gorge of Dragons spouting forth a flood of fountain foam"—or where the site for a palace on a rocky spur of an apparently inaccessible mountain range is so handled that the buildings appear part of the very mountains themselves. All honour to those whose imagination can escape from the ordinary conditions of building in these days. It is a splendid exercise, and if in the future they find that local conditions and money restrain their high flights, surely they will have benefited by these student exercises. To others whose imagination cannot run riot, the lack of conditions and restrictions seems to act as a kind of paralysis, and their designs suffer in proportion, as they take the line of least resistance.

As I understand it, one of the great benefits in these competitions is the training of the mind to clearly see the design as a whole before putting pencil to paper. This applies equally to the great monumental works and the smaller problems which the student will encounter hereafter, and without this power there is likely to be little success.

I cannot help mentioning two tendencies which appear to be gaining ground amongst the students of to-day.

First, there appears to be a general falling off in the study of old work, and a neglect of the traditional forms of design. Originality which means ignorance of what has been done before is rarely successful. True originality to be successful can only be achieved by a careful study of the past, and for a student it is the only right method to adopt. Measure and draw the fine work of our ancestors, and so the tradition will be carried on and upwards, and your buildings will rest on sure foundations, however original you may be in your conceptions.

Secondly, do not be carried away by mere draughtsmanship, which is not design. It is no doubt very fascinating, but look at the walls of the Architectural Room at the Royal Academy, and you will see that they have lately become a mere water-colour show, and that the more solid architectural design is being neglected.

It is a matter of regret that only thirty-one competitors have sent in drawings this year, as against seventy-nine in 1913; but the reasons are not far to seek. The Rome Scholarship has no doubt occupied much of the time of many who would otherwise have competed, and the quarterly designs which are taking the place of the Testimonies of Study in our examinations must have had the same effect.

It is a pity that there are no entries for the Owen Jones Prize, but the decision of the Council to confine this prize to members of the profession is probably the cause of this, so the Kensington students, amongst others whose beautiful work was so often seen on our walls, could not compete.

A gratifying feature of the competitions this year is the success of the Royal Academy Schools, which have lately been showing such an improvement. The Architectural Association and the Liverpool Schools have established their reputations, and now the Royal Academy Schools have assumed a position which should be theirs by right, and I am sure all of us will welcome their success.

THE SOANE MEDALLION.

We will begin with the Soane Medallion: "An Official Country Residence for a Royal Personage in the United Kingdom." In this competition we have several designs of great merit and exceptional interest.

Beginning with that over the badge of the Thistle, we have a fine Royal residence on a fine site, evidently in the highlands of Scotland. The approach across the river with its well-arranged roadway ascending the hill gives a noble entrance to a noble residence. The plan of the house situated on this great spur of rock, built round two courtyards, with the stables to the north and the gardens to the south, is truly royal in character, and is shown by a set of really beautiful drawings. It would take too long to go over all the fine details of this design, but from the sections it appears that all the principal rooms have been carefully thought out, from its great ballroom, with its deeply coffered ceiling and ingenious gallery, to the soberly designed chapel with its simple but effective organ. I should advise all students to study the sections in this building, which are drawn in a masterly manner, and, although showing the utmost detail, are in no way confused.

Coming next to the design by "Farnesina," we have a very different setting for our palatial residence, and it appears to me to be set under Italian skies rather than in the cold grey atmosphere of the British Isles. The plan of the house does not appear to me to be so satisfactory in its arrangements as that of the last mentioned. Take, for instance, the library, which has no wall-space for books, which would have to be accommodated in the centre of the room in bookcases which would sadly obstruct the light. On the entrance elevation the central portion of the building seems to have little relation to the façade overlooking the lake. No doubt this is partly due to the difference in level between the forecourt and the terrace on the other side, but the contrast, I think, is too great to be satisfactory. The windows also appear too small, though we can all appreciate the value of plain wall surfaces; and it is doubtful if the two square blocks containing the palm and kitchen courts would be really pleasant in execution.

The design signed by "Anchor" represents a typical English country house in the "grand manner," situated in a flat English park. The plan is noteworthy as containing regal apartments and fine vistas. A novel, and I think a very satisfactory, arrangement is the placing of the stables and garage on each side of the approach to the forecourt and connected to the house by a well-designed arcade. The general lay-out of the grounds to the south is also very satisfactory, with the terrace and steps leading down to the river. A criticism in detail may be noticed in two arcaded recesses on each side of the entrance front which are somewhat awkwardly carried across the dome of the chapel and billiard-room. The amount of cellars may also be criticised, and if these are an indication of the taste of the Royal personage who should perchance inhabit this palatial residence, it would be a bad augury for a long reign. The drawings generally are clear and restrained, and the ½-inch detail shows refinement and skill without affectations.

In "Akarana" we have a Royal residence which, to my mind, is less adaptable to an English landscape than the last. The plan here is somewhat confused by showing the design of the ceilings to such a small scale, and the somewhat awkward arrangement of the sections and elevations makes it difficult to follow the internal construction and general system of internal lighting. The lettering also on the plans leaves something to be desired in the way of clearness. On the whole it is a stately building, but, as I prefaced my remarks, scarcely English in character.

"Cornucopia": As a plan this contains many interesting features, especially the arrangement of a corridor round the banqueting chamber, which presumably is intended to facilitate the waiting on State occasions, although the dinner would get sadly cold in being carried down the corridor from the kitchen block. The library is well arranged with bookcases projecting at right angles from the walls, which always makes a satisfactory plan. Only one plan is given of the principal floor, which shows a scarcity of bedrooms for a country house on such a large scale. One cannot help feeling that the approach to this mansion would be somewhat spoilt by the placing of the kitchen and stable buildings in such a prominent position.

"E X V L" has a plan on somewhat similar lines, though here again the stables and garages appear to me to be situated too near the residence. It is not very clear how the kitchen is lit and ventilated, being under the portico on the south-west side. The principal façade is a nice harmonious composition, though the chimney stacks appear somewhat too lofty.

The design above "X X X" appears somewhat too broken up and lacking in dignity. The shapes of the towers and lanterns are somewhat unfortunate. The plan appears somewhat complex, and the landing halfway up the staircase from the entrance would be uncomfortably low.

"Halibut" has a design of a building situated at the foot of a hill facing the south-west. The lay-out of the gardens and terraces, &c., on that side is somewhat confused. The plan again is wanting in clearness on account of the amount of detail of all the ceilings and their decorations which is shown thereon. The plan is altogether in my mind too ambitious, and partakes more of an institution than a country house. The carved ornaments shown on the ½-inch detail are somewhat meaningless in character. It does not appear to me that it would be a comfortable house to live in.

THE TITE PRIZE.

Next we will take the Tite Prize, the subject for which was a monumental fountain.

Several of the drawings for this prize represent cascades rather than fountains. Take "Golden Dolphin," for instance; you will notice that the water scheme consists mainly of a vast cascade running over an only slightly inclined surface, broken up into ridges to give life to the water before it descends in a waterfall into the basin below. It is true there are certain jets in the basin from isolated figures which are, to my mind, the real fountains. I think the lines of the lower basin are somewhat weak, and the sculpture generally is somewhat insignificant. The central feature is a flat dome surmounted by a quadriga, the whole of which is not very satisfactory in outline, and the staircases on each side, to gain the upper level, finish somewhat uncomfortably against the massive walls of the terrace; but, on the whole, the water controls the design, although it seems impossible for the spectator from the lower level to see the fine rippling effect, already mentioned, before the waterfall begins. The coupled columned arcade is an interesting feature, and the view from the upper terrace would undoubtedly be very fine, where a central group is happily placed, backed by the central arch.

"Panama": The fountain portion of the design, though somewhat confused by the number and variety of the figures, seems to me a more monumental fountain in the strict sense of the term, and the cascade by which the water is brought on to the scene is kept more in the background. It appears to me that in execution the number of parallel staircases would be very confusing. There are no less than eight starting from the same level. In the section, with its romantic background, there is shown a large group of statuary as a central feature, but this is apparently omitted on the elevation. The back screen is a pleasant feature, and, like the design by "Dolphin," and the following design by "Joy," a monumental fountain in the depths of the mountains seems to me somewhat wrongly placed.

In "Joy's" design the first thing that strikes one is that the architectural treatment of the great archway at the back, through which the torrent descends, is hardly Palladian in style. There is a certain grandeur about the whole conception, but I cannot help thinking that this mountain torrent could hardly flow away so placidly like the Serpentine under its little white stone bridge after its tremendous adventures in reaching its lowest level.

In the design marked "Cascade" I think the placing of the fountain, apparently in the centre of a great space in a town is more correct, if not so ambitious in its conception. The design appears to me to want a greater simplicity in treatment, especially as regards the shape of the fountain, and more repose in the sculpture. The general effect of the central feature is that of too many vertical lines, which make it too reedy in appearance. With a little more simplicity and repose in the working-out the design appears to me to have the elements of success as a monumental fountain.

In the design for a fountain by "32" we have a water-colour drawing of a marble fountain standing in a lake, which errs, perhaps, in the other direction by making the actual fountain too insignificant a feature.

The design sent in signed by "Red Dragon," with a Welsh legend which I dare not pronounce, shows an elaborate architectural colonnade in the centre of what appears to be a vast park. The whole plan is somewhat confused, and the Indian ink washes tend to make the work somewhat uninteresting.

But this is preferable to the elaborate and confused colour plan of "Merry and Bright," where the cast shadows and the general arrangement of colours have produced the effect of a design for a piece of barbaric jewellery rather than the plan of a monumental fountain.

THE GRISSELL GOLD MEDAL.

For the Grissell Prize we have three entries.

The prize, which has been awarded to Mr. Bennett ("Syrod"), seems to me thoroughly well deserved, and the simple dignity of the brick piers seems eminently suitable for a warehouse building. I will not attempt to criticise the steel-work details; the plan is, to my mind, the right one to adopt for a warehouse of this description; that is to say, the lift and staircase are entirely outside the rooms themselves, and not contained within the building as in the case of the plans by "Percy Vere" and others. The only criticism I should venture on this design is that, under the requirements of the authorities, a staircase at each end would probably be required.

In the design by "Composite" I notice the staircase is composed of winders, which would not be allowed. The details are well drawn, but perhaps a little too much importance has been given to the cast shadows.

THE PUGIN STUDENTSHIP.

There are five sets of drawings sent in for the Pugin Prize this year, and the winner of the prize, Mr. Young, has certainly produced four strainers of remarkably interesting drawings. The tower of St. Mary Magdalene, Gedney, Lincolnshire, may be taken as a typical specimen, and the excellent plans which are given of every part show a very complete study of the building. The same remark applies to most of the work, and the direct and simple form of perspective of St. Edith's Church, Anwick, and Elm Church, Cambridge, seem most successful. His drawings of the glass from the Flodden Window, Middleton, Lancashire, and the pavement at Ely, show that his power of drawing detail in colour is quite up to the average.

Mr. J. R. Leathart, who has been awarded a certificate, has given us some exceedingly interesting drawings, but the effect of his strainers is spoilt by the vivid violet colour of his section and shadows. The drawing of the south-west transept of Ely must have been a considerable undertaking, and such a careful record as this should prove of great value.

It is difficult to describe all the excellent work in the drawings of the other competitors for this prize. It would take too long; but on the strainers sent in by Mr. Hamlin and Mr. Charlewood the perspective seems to be perhaps the weakest point. Taking it as a whole, the work generally sent in for the Pugin Scholarship this year seems quite up to the average.

THE MEASURED DRAWINGS SILVER MEDAL.

I am afraid the same cannot be said for the Silver Medal. "Pax" (Mr. James Bennett) has sent in an interesting set of drawings of Bramante's Chapel at Montorio, Rome. There seems a want of strength and decision in his drawing of the carved ornaments in his sheet of detail. The same defect also spoils his main elevation and section. The ceiling and pavement of the dome are drawn with enormous care, and are eminently satisfactory.

"Dauber" sends some drawings of a very interesting building on the Via Flaminia, near Rome, and but for the washes of colour it would no doubt have received more sympathetic treatment at the hands of the judges.

The same remark may apply to the style of drawings adopted by "Amussim," which are spoilt by the method of treating the backgrounds.

The building selected by "The Royal" is, to my mind, peculiarly unfortunate, and the student's attention should be directed to the proper rendering of sculpture on a building.

Both the Custom House, Dublin, and Fountains Abbey are excellent subjects, but in neither case have the students succeeded in producing a very interesting or fine set of drawings.

On the whole the work sent in for the Silver Medal this year is hardly up to the average.

THE ARTHUR CATES PRIZE.

There is only one entry for the Arthur Cates Prize, which has been awarded to Mr. John C. Rogers. Generally speaking, his six strainers show excellent and careful work. The lantern of St. Paul's is a very remarkable section showing the construction, and is exceedingly interesting; also the drawing of the Fountain Court at Hampton Court is pleasing. The vaulting sections are clearly drawn. It is a pity that there are no other competitors for this prize, but I think it is safe to say that Mr. Rogers has produced six excellent strainers which would have won a prize in most years.

Speaking generally of the whole of the drawings submitted this year, it may be said that, although fewer in number, they are fairly up to the average, and I should like to congratulate those who have received prizes and honourable mention, and, to those who have not been successful better luck next time.

Mr. Blomfield, before presenting the prizes, said that while congratulations were due to the winners in the various competitions, he thought that the schools at which those students studied should also come in for some share. For the student undoubtedly did owe much to the care and attentions of those responsible for his training. Therefore he would make an innovation by reading the names of the schools at which the winning students have been trained.

Mr. Cyril A. Farey (Soane Medallion and £100); Royal Academy Schools.

Mr. H. Chalton Bradshaw (Certificate and £10 10s. in Soane competition); University of Liverpool.

Mr. Trenwith Wills (Tite Certificate and £30); Royal Academy Schools, prior to this he attended the Architectural School of the University of Liverpool.

Mr. A. G. Shoosmith (Certificate and £10 10s. in Tite competition); Royal Academy Schools.

Mr. W. W. Friskin (Ashpitel Prize, 1913); Glasgow School of Architecture.

Mr. W. Paterson (Pugin Studentship 1913); Edinburgh College of Art.

Mr. P. D. Bennett (Grissell Gold Medal and £10 10s.); Birmingham Municipal School of Art.

Mr. Blomfield said he thought it was a legitimate matter for congratulation to those present and to the Royal Academy Schools that the latter had carried off premier honours this year. Students of that school had taken four prizes. This was not only a great credit to them, but it also reflected great credit on the very devoted master—Mr. de Gruchy.

The prizes were then distributed by Mr. Blomfield in accordance with the awards published in our issue of January 30.

Sir Thomas Brock, R.A., in proposing a vote of thanks to Mr. Blomfield and Mr. Walter Cave, said his own art owed its greatest development to architecture. He and his fellow sculptors could readily sympathise with architects in their feelings as to certain recent criticism. For a great deal of sculptural art was of a public character, and nearly every piece came in for as much criticism as a Budget. There was always the consoling knowledge that no two critics thought alike, and therefore not very much importance need be attached to any one of them. It reminded him of a certain novelist, who, after reading the criticisms supplied by a press-cutting agency, wondered from their diversity of opinion whether he had written the finest or the worst book that had ever been published. If a man was to excel in the arts his severest critic ought to be himself. Architecture was bound to flourish in this country so long as it numbered among its leading exponents men who were moved by the true artistic spirit, and were ready to do so much to promote the welfare of their art, and were always prepared to speak on its behalf with real conviction and courage.

Mr. Solomon J. Solomon, R.A., in seconding the vote, said there were few writers or speakers who had anything to say which mattered who were more lucid or more forceful than the President of the Royal Institute of British Architects. It was excellent advice not to take too seriously the criticism of the mere theorist. There was a school of literary men who were having anything but a salutary influence on the arts, particularly among the younger men. It was satisfactory to members of the Royal Academy to hear that the R.A. students had gained some of the highest awards. There was no doubt that Mr. Blomfield was partly responsible as visitor for those successes.

The vote of thanks was passed by acclamation.

Mr. Reginald Blomfield having briefly replied, the meeting terminated.

ROYAL ACADEMY LECTURES: ARCHITECTURE.—III.

Professor E. S. Prior delivered his third lecture at the Royal Academy on Monday, February 2, when he dealt with

Romanesque Developments of Pier and Arch.

The previous two lectures discussed the *origins* of mediæval style, and gave some account of the Roman and Byzantine elements of mediæval planning. In his third lecture Professor Prior discussed the transformation of architectural style which came in this planning of great churches. The interior of a Roman basilican church can be seen as an oblong hall with a single apse, its structure that of the pillared nave with rows of single columns and arches. This was the simple basilican arrangement of early Christian centuries. In the eleventh-century church of San Ambrogio, Milan, instead of the rows of *Classic columns*, we have the Romanesque piers—three or four large masonry structures in place of monoliths.

The contributions of Classic style to early Christian building Professor Prior had summarised as being (1) the column; (2) the arch; and (3) the apse. Now in all parts of the plan the developed basilican church—which became the great abbey church—the *column*, the *arch*, and the *apse* may be seen forming part of its creation. But for the sake of order and comprehension it is well to make the somewhat arbitrary distinction that the evolution of the column in mediæval art belonged specially to the body of the nave; the evolution of the arch to the transeptal crossings of the lantern and of the western crossing, the façade or front of the church; and the evolution of the circular-planned wall or apse which especially took place as choir or east-end development.

The Romanesque nave may be considered as a development of the column in three aspects:—

First, in respect of the form of pier which replaced the circular pillar of the Romans. Its function was two-fold. First, it carried a wall; therefore we should take the plan of the pier as combining in architectural synthesis with the construction of the wall or arcade.

In this way we have the combination of pier and arch in the Romanesque construction of wall. This made a second aspect of the column.

And thirdly, there was the combination which the plan of the pier has with the *scheme of the arched ceiling* which we call the Romanesque construction of vault. The threefold development of column in combination with the arch resulted in the creation of the Romanesque bay.

The chief element of Romanesque style compared with Classic lay in the development of the *shaft*. When the pillars could no longer be stolen from ancient building, and when the barbarian masons had lost the art of turning them, they perforce built their basilicas with square piers carrying arches, an arcade of few arches taking the place of the colonnade. But such a series of arches upon piers offers difficulties to builders. These difficulties were the spur to invention in the mediæval building art. The whole course of the constructive experiment may thus be summarised:—

1. The circular column of marble pilfered from the Roman colonnades, when there were still columns to pilfer. This was content with a wood roof.
2. When there were no more to steal the square pier was employed.
3. Next we have the use of the strutting arches over aisles which produced the T-shaped pier.
4. The similar use of the arches across the nave dividing the church now into definite compartments.
5. Next you have these arches with vaultings in nave as well as in aisles.
6. Next the rib-vaulting of the aisles requires another two shafts.
7. And finally rib-vaulting of aisles and nave both on square plan—two squares of aisle to one of nave produces piers alternately.
8. The subsequent developments were those of developing Gothic—the same, but now with the intermediate piers omitted and an oblong vaulting of aisles.
9. Oblong rib-vaulting of nave, and square rib-vaulting of aisles.

Now in this transformation we see two things:—

First, the power of the transverse arch.

Second, the power of ribbed vaulting.

The differentiated planning of alternate piers had a curious extension of usage throughout mediæval art, occurring in many places far separated from one another. It occurs in the German Romanesque which succeeded to the traditions of Lombard architecture. In Normandy and England its appearance has been reckoned as proving the origin of German and Norman Romanesque from Lombardy. It may be so as a matter of plan, but the idea, as an idea, might have been conveyed by word of mouth; but that is a different thing from borrowing architecture, which meant a conveyance of masons. Moreover, the transverse arch was an obvious expedient to enable a great nave to be built in sections. This building in sections was the common method of English mediæval building. Most of our great Romanesque churches—Durham, Ely, Norwich, Peterborough—show this alternate system of piers. There are indications that they may have first been roofed with transverse arches with wood ceilings between. In the Romanesque churches of the West of France the transverse arches were used to carry domes, or domical vaultings.

But the main stream of Romanesque advance was not to be by way of dome construction. The Romans in their groined vaults had started architecture on another idea. It would seem that the Roman masons, though setting their vaults upon platforms or centreings, put in ribs of brick—ribs put in first along the diagonals of the vault to give the intersections of the groins, the interspaces being afterwards filled in flush, so that the brick disappeared in the body of the groin. This form of vaulting was continued throughout Italian building. The Lombard builder, c. 1050, appears to have thought he would show his stone ribs in the same way as the transverse arches.

A strong ambition prevailed to make churches with wide open Byzantine bays (instead of the narrow basilican columnar divisions) and fireproof (as the domed construction of the Byzantine had done), and yet to do this without the dome—that is, by stone-arched construction instead of by concrete. There was also a desire to emulate the great arches of the Romans. The Mediæval builders had the ambition to build to the same scale of magnificence. But they had not the Roman appliances or the Roman stone. The use of small stones and bad mortar was a necessity. In Roman building the individual stone had been merged in a concrete mass. But in Gothic architecture each piece of stone plays its part as a striving working personality, each in the importance which its position warrants. This organisation of stone-pieces transformed the wall into the pier and arch of Romanesque style.

The traditional marble and stone shaping of the Romans and their good mortar made them able on occasion to build safely and easily the thin walls that a column could carry, as at Ravenna in the eighth century. But the decay of building science had lost this art, and Romanesque walls tended to grow bulky by bad building.

Also, whereas the science of the Roman building had been an engineering ability that scientifically abutted their wide vaults by division walls at right angles, the Romanesque builders, ambitious of the big spacing that the Byzantine domed architecture had taken on from the Romans, but without the Roman vaulting science or the doming science of the Byzantines, had to build very thick walls to keep up masoned roofs. Accordingly, Romanesque arches had to be built in the body of thick walls, and the Romanesque builders were at a loss, from their disability as to stones of big scantling, to make their thick arches. Later experiment by Romanesque builders showed them how an arch could be built with small stones to carry a wide wall by making the arch a succession of rings.

The recessing of arches became a most fertile source of architectural style. It made the whole of Gothic moulding possible, and caused the development of the Romanesque pier. The recessing of the arcade arches, together with the multiplication of arches in the roof led (on the principle that each arch must have its shaft) to a bundle of shafts, such as we see in so many examples of our English Romanesque.

The Lombard builders (who did not make much of the arch recessing) did not carry the pier clustering far. The Germans also in the Rhenish Romanesque did not specially develop it. But the Normans of the North did—and in its most elaborate outcome we may call the clustered pier of English style the final Gothic development of arch recessing.

This development of the column by which, under the necessities (1) of arch construction in the wall and (2) of arch construction in the roof, it became a many-shafted pier, represents the achievement of Romanesque style. It was not the power of design, but the gift of experiment, the enthusiasm of adventure vitalising a whole society, which carried Romanesque art on to the achievement of Gothic.

There was, besides stability, another necessary factor in the Romanesque designing of churches. The ambition of roofing in stone was complicated by the necessity of lighting the central compartment of the church body. But while in Southern Europe few windows and small gave sufficient light, many windows and large became necessary in the West of France and still more in Normandy. Now this condition has had a very great deal to do with the creation of Romanesque and Gothic style, and it was an especial complication of the vaulting problem. The barrel vaults of Toulouse and the groined vaults of Lombardy were without direct lighting. Various ways were tried to get over this difficulty. A popular treatment of the builders of the South-West of France was to widen out the bays, making flat, low-pitched domes to get under high-side arches broad windows. This was particularly to suppress the aisles, so that at Angoulême they dispensed with the columns of the basilica and made a single-chambered plan of the church.

In Burgundy the groined vault did not adopt the square planning which in Lombardy and Germany had made its peculiar feature. Burgundian churches developed oblong compartments, not the square spacing and the setting of vaults on the square plan. This arrangement of oblong bays lightened the church, for the steep groins allowed large side windows. It gave also a clear economy of material. This economy is very marked beside the solid architecture of the South and West of France. This progressive lighting of the vaulting system was to become a matter of experiment, and is of special interest in view of the close relations of English with Burgundian style through our Cistercian monasteries. It was in the hands of the Norman builders that the consequential developments of style were made.

The ambition of the Norman builders in Normandy and England, as shown in the great height of the nave walls, was on a par with those of Germany. Like the German builders, they had borrowed the square bay and the alternate system of piers, taking the alternate pilasters, however, up to the top of the wall, where its capital gave a seat for a tie beam. On the main pier the Normans intended a great transverse arch, and these seem to have been executed in some cases.

The intention of vaulting was in the mind of the Norman builders; their aisles were groined, and by the year 1100 ribbed. Next, in Normandy itself, about the beginning of the twelfth century we have high vaults executed in a peculiar fashion. These Norman churches had been roofed in wood with ceilings, whose beams limited the height between the transverse arches. They had been put at the level of the crowns of these arches, and, therefore, would have cut into the domed vaults if these were built with semicircular diagonal ribs on the square plan, as in Lombardy. They had to be flattened to get below the tie beams of the roof. But when flattened they were not structurally strong, and the Norman introduced another arch to strengthen the meeting of the diagonal ribs.

In the great Anglo-Norman building of England another system of rib-vaulting was being made the subject of experiment. Before the end of the eleventh century Durham Cathedral was set out (c. 1093), contemporary, that is to say, with St. Sernin, Toulouse, and contemporary, too, with the building of Sant Ambrogio nave at Milan. But Durham was probably vaulted before either of these churches, and certainly before the vaulting of the Conqueror's abbeys at Caen. The aisles of the choir must have been immediately vaulted with the rib vault as we see it now. Similarly towards the central compartment the shafts of the pier are arranged for the transverse arches and the diagonal arches of the vaulting of the high compartment. It has been established by Mr. Bilson that this ambitious vault was completed, and it must have been the most important, if not the first, of the great rib vaultings of its age. In the transepts, which were vaulted probably about 1125, the stone vaultings remain. Now, the important point about these is that they make a level crown; they are not domed like the Lombard and German vaults, but are as flat at the ridge as were the vaults of the Norman Abbaye-aux-Hommes. As in these latter, the tie beams of the wood roofs were in existence, and the vaults had to be constructed beneath them. The object was attained by making two bays of diagonal ribs to the square. At the same time, the transverse arches became pointed. This was another step forward, and occurs in many English vaults of the middle of the twelfth century. Joining with the oblong compartment of planning which the Cistercians brought from Burgundy, we have the typical English system of level crowned even-ribbed vaultings.

The Normans developed the triforium, opening it out to get light through it, and then developed, too, the clerestory. Norman builders were conspicuous in their lightening of the wall and replacing its massiveness with arched constructions. The three storeys of the Romanesque wall in Normandy and England, as at Peterborough, became ranges of columns or shafted piers. But the expression of these columns is no longer that Greek expression of carrying with grace a weight, as a prop under a lintel. Instead of this, the pier in its plan makes a declaration of arch construction and arch experiment. From the ground it establishes its connection with the whole superstructure. It asserts its design to be roofed and ceiled with a stone-ribbed vault. The logical expression of the Romanesque design is as perfect as that of the Greek.

It was in this perfection of building logic that the wall of the Romans the concrete solid wall of engineering science—was dissolved. At Noyon can be seen the complete removal of the wall substance by the Gothic builders. In place of expressing substance the wall has become a skeleton of construction.

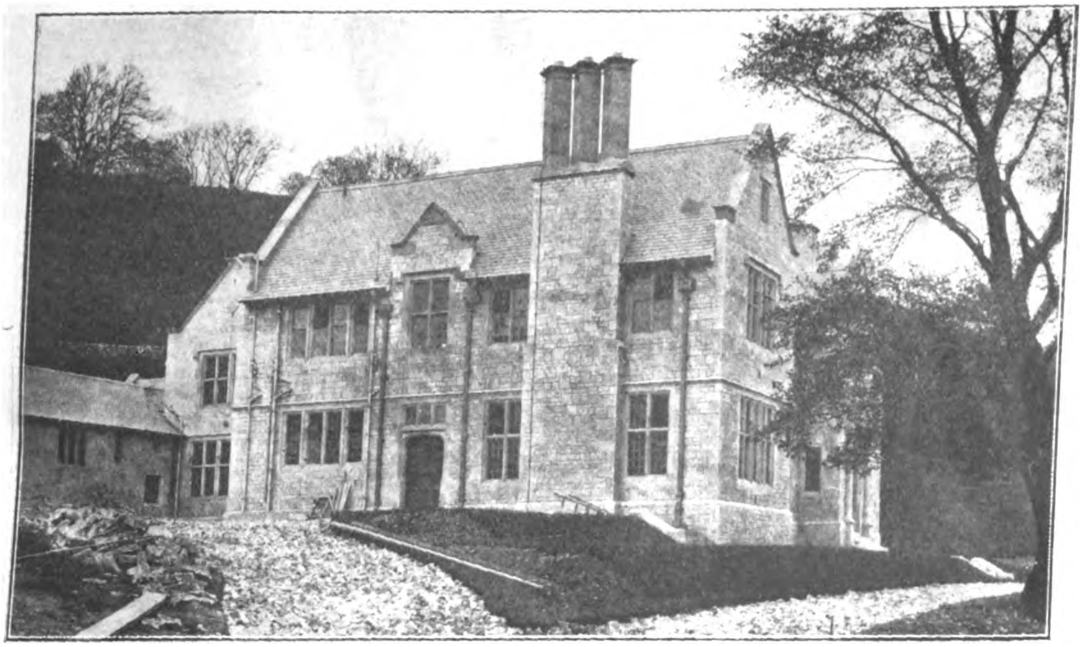
This logical lightening of structure was the work of the Anglo-Norman builders; its method was the achievement of a hundred years of building. The southern French builders never, in the whole course of their art, attained to this complete extinction of wall surface. But to carry this logic into the whole system of church design was particularly the achievement of the north French building—that of Picardy and the Ile de France. The leadership of Mediæval art passed from the hands of the Anglo-Norman builders. French builders advanced the art of stone-building to its extraordinary perfection. In what direction the fining away of the expression of wall mass was to go before the end of the thirteenth century can best be seen at Soissons.

In considering other developments of the arch logic, we may turn to the transepts of the abbey churches. Its developments may be classed as those of "arch" experiment, both in the general massing and spacing of the architecture, and then in an extraordinary way in the piecing together of the stonework. The Anglo-Norman development of the lantern may be traced as an evolution from the triumphal arch that had given dignity to the seat of justice—in the court-house or civil basilica of the Romans. This triumphal arch was borrowed for the Christian basilica to make a dignified approach to the altar and its apse. The Byzantine planning quadrupled this arch, east, west, north, and south, to emphasise the dignity of the cross centre and to carry the cupola over the altar.

But the plannings of the north French and the Anglo-Norman abbey-churches made a square tower of it, carrying up the four great arches of the crossing, as at St. Albans.

In a square tower in the walls above the arches windows could be put on all sides. Then the cupola, or octagonally planned dome, which we saw lifted on the top of the walls, as they were lifted were made steeper, for so the less thrust did it exercise and the better the arches would stand, until finally growing loftier and loftier, it grew to be a spire. The whole construction ends in being a marvellously erected stone arch, the substance of it being from foundation to apex just the line of arch-thrust, threaded, as it were, like a string of beads.

THE Walsall Town Council have instructed their Health Committee to prepare a scheme for the erection of 125 dwelling-houses and to inquire as to suitable sites.



RATHBORNE CONVALESCENT HOME, PARWICH, DERBYSHIRE.—SOUTH-WEST VIEW.—Mr. W. R. MOSLEY, Architect.

LONDON COUNTY COUNCIL.

NEW COUNTY HALL.

AT the meeting of the London County Council on Tuesday last the Establishment Committee reported that they had considered a complaint that York stone which had not been worked in London was being used in connection with the construction of the superstructure of the new County Hall. The Council had previously decided that all joinery and stonework, except granite, should be prepared within a radius of twenty miles from Charing Cross, but investigation disclosed the fact that certain stone had been worked in Yorkshire and delivered on the site. It had, however, now been arranged that all stone would in future be worked in London.

In the course of the discussion which ensued, it was pointed out that the intention was apparently to bring workmen from Yorkshire to dress the stone, and so deprive London men of work which was legitimately theirs, whilst still keeping within the four corners of the restrictions set up by the Council. Mr. Salmon, Chairman of the Committee, was pressed to make a declaration on this point, and ultimately consented to see that only genuine London workmen were engaged upon the work.

THE BUILDING LOCK-OUT.

Replying to a question by Mr. J. D. Gilbert as to the effect of the lock-out in the building trade upon the Council's building contracts, Major Gray, Chairman of the General Purposes Committee, stated that his committee had reached a decision on the question, as a result of which it was thought inadvisable in the public interest to present any report to the Council. Naturally, some of the Council's work was affected, and proper steps would be taken at the proper time to deal with such delays, but in the face of his committee's decision he could not undertake to bring up any report.

In answer to a further question by Mr. Gilbert as to the wages paid to painters engaged upon Council contracts, Major Gray said that certain contractors had refused to sign contracts with the Council, presumably owing to differences of opinion on the rate to be paid to painters, and as a consequence some of the contracts had been varied so that the painting work was left out for the time being.

MR. REGINALD BLOMFIELD, P.R.I.B.A., was on Wednesday last elected a member of the Royal Academy, of which he has been an Associate since 1905.

DR. J. J. BURNETT, F.R.I.B.A., has been elected to the rank of Academician at an assembly on the 11th inst. of the Royal Scottish Academy, in place of Mr. Wm. Leiper, F.R.I.B.A. (retired).

NOTTINGHAM AND DERBY ARCHITECTURAL SOCIETY.

AT a meeting of this Society on Tuesday, the 3rd inst., Mr. A. N. Bromley, F.R.I.B.A., gave a lecture, illustrated by lantern slides, on

A SHORT ARCHITECTURAL TOUR THROUGH THE UNITED STATES AND CANADA.

After describing New York Harbour, which is considered one of the finest in the world, Mr. Bromley spoke of the remarkably picturesque effect which the tall buildings produced as seen from the steamer approaching the city.

The best buildings were generally absolutely first-class; there appears to be very little second best, and the third he found deplorable; words, however, can scarcely describe the best. Cost appeared to be little considered, and the buildings were frequently finished with exquisite taste and workmanship. Mural paintings were introduced in the decorations by the very best artists, and to give some idea of cost, he mentioned that as much as £6,000 had been spent in the decoration of the vaulted ceiling of a restaurant. Many of the best buildings were erected in marble and light granite, and as most of the cities are entirely free from smoke, the effect was exceedingly beautiful.

The sky-scrapers, with one or two exceptions, are unsightly, and, in Mr. Bromley's opinion, unnecessary, except in a modified degree, for there yet remains a large amount of defective property in New York which might well come down and be replaced with new buildings. New York, however, is restricted in area and the foundations exceptionally difficult. At the same time, one cannot help admiring the great daring and skill of the engineers of these tall buildings, but the excessively high ones appear to be erected for advertisement and a desire to beat the world.

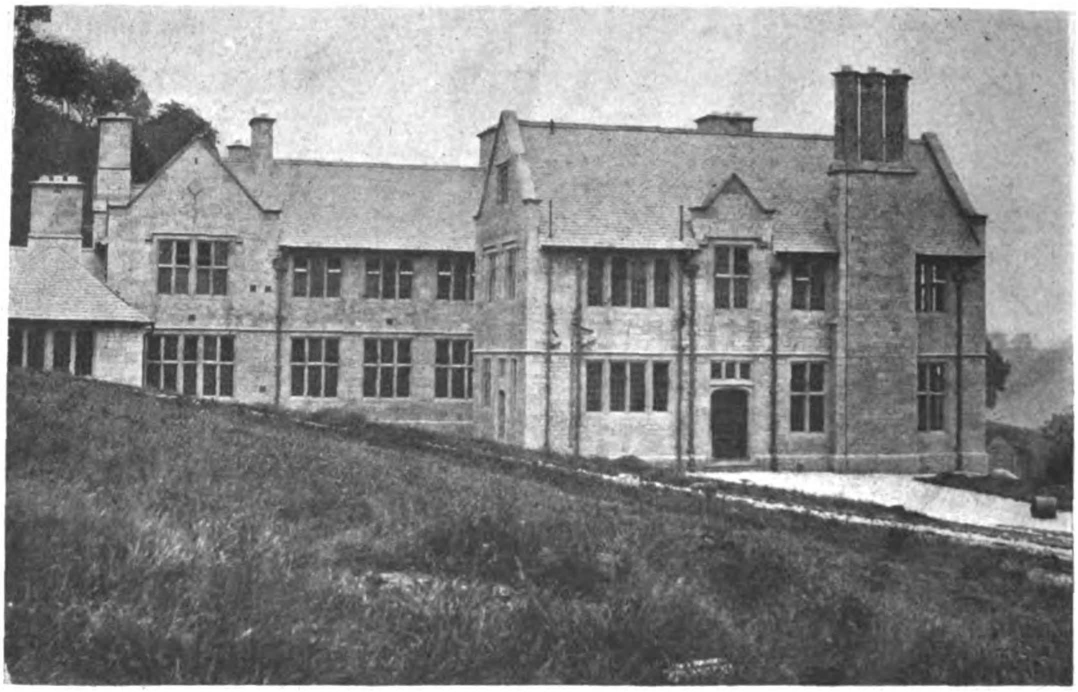
The New Grand Central Railroad Station and Pennsylvania Railroad Station in New York, and the station at Washington, are remarkably fine, and the interiors are exceedingly spacious and beautiful. The New Central Station is lined throughout with polished marble of a quiet tone, and the waiting halls are quite separate from the trains. But the less said about the average railway station in America the better.

The elevators used in the hotels are remarkable, and in the new Woolworth building the huge sum of £160,000 has been spent on lifts alone.

The libraries, museums and similar public buildings are a credit to the nation, and are frequently constructed of marble and are of simple Classic design.

Washington is a beautiful city of which Americans may well be proud, but here again the second and third class buildings somewhat detract from the fine public buildings.

Some of the new industrial works are splendidly laid out and equipped, and the management is such that one firm is able to turn out as many as 800 to 1,000 motor-cars a day.



RATHBORNE CONVALESCENT HOME, PARWICH, DERBYSHIRE.—WEST FRONT.—Mr. W. R. Mosley, Architect.

The figures given read like fairy stories, and it is difficult to believe them without seeing for one's self. The successful management and lay out of industrial works is due in a great measure to the American mind being able to understand plans. The client will decide upon all his requirements, such as machines and positions of same, heating, lighting and ventilating arrangements, &c., before a brick is laid.

The recognised scale of architects' charges for competition and better class buildings is 6 per cent. in America, as against 5 per cent. in this country.

Workmen's dwellings are disappointing considering the high wages obtained, and the modern blocks of flats in New York are distinctly bad.

Mr. Bromley added that it would perhaps be a subject of surprise that he made no reference to the better class domestic architecture, but he omitted doing so because he came across no examples worthy of note. That there are some good examples to be found for the seeking there can be no doubt, but he considers that the English are supreme in this department, and some of our publications which illustrate architecture in England are the finest in the world.

BIRMINGHAM ARCHITECTURAL ASSOCIATION.

Mr. Hugh P. G. Maule, late headmaster of the London School of Architecture, gave an address on

Reason or Fashion in Architectural Design

at a meeting of the Birmingham Architectural Association held in Exchange Buildings on Friday. The President (Mr. G. Salway Nicol) was in the chair.

Mr. Maule remarked that each type of building, to express its peculiar function in terms of recognised architectural qualities, must convey more than the mere successful accomplishment of functional purpose, must, in fact, convey to the beholder some perception of the inner or spiritual qualities connoted by the work. It was somewhat difficult to define or determine where building ended and architecture began, but he was inclined to think that, properly designed, all buildings, even the most utilitarian, should be "architecture," just as every article in daily use might be beautiful, did they but possess the creative and reasoning faculties of the Greeks and set the accomplishment of this above mere commercial success. Moreover, they were prone to think that if recognised and stereotyped architectural details were introduced into a building it became a work of architecture, no matter how bad it might be, while if it was left in naked ugliness unadorned, it was mere building or an engineering structure. Was not this the result of that attitude of mind vaguely connected with the false standards of taste which conceived of all Art as something which could be either recognised by its ornament or labelled and put in a museum? In many cases he believed they would do well to ask themselves more frequently why they had created a barrier between architecture and engineering when any structures were in question which might reasonably be termed buildings. Was it that the engineer was a constructor with definite scientific knowledge but no training in taste, and that the architect had sometimes one, and sometimes the other, but seldom had both, and not infrequently in the immediate past had had neither—had been, in fact, somewhat of a dilettante amateur? Sometimes he thought they would find an answer to these anomalies in the fact that modern architects had often forgotten or ignored the indisputable fact that architecture was primarily a structural art, and not only a decorative one, and, therefore, it followed that purpose or function, properly expressed with materials rightly used, had more claim to be considered architecture than a building which did not express its purpose, and whose structure and functions were disguised and distorted by lavish and misplaced "constructed" ornament. Buildings quite devoid of ornament could be good architecture, albeit often of humble type, while buildings covered with ornament and architectural detail might fail to be such.

Proceeding, Mr. Maule remarked that by reason he meant the application of common sense logic to the affairs of architectural design. If that alone was to stand exempt from the general laws of evolution, which appeared to govern all progressive human activities, there should be some very strong evidence to warrant the exception which made them cling to past forms and expressions, when the conditions which brought them into being had long since passed away. Was the spectacle of the carriage-designed motor of the late nineties really more incongruous than the Renaissance-fronted building, with a steel structure and concrete body? Could, then, suitable external expression ever be reached if, regardless of principles, structural conditions and changed modern needs, they remained deliberately eclectic or selective, and endeavoured to fashion their buildings in the external forms, evolved from not only other structural material and climatic conditions, but also from a totally distinct environment—a world apart in thought, feeling, and general mentality from the world as they found it to-day? By fashion he meant the eclectic expression this foreshadowed but used collectively—the deliberate selection of architectural forms produced in former times under other climatic, structural, economic, social, and mental conditions, though, in justice to able men and well-trained draughtsmen, often cleverly adapted to the conditions, and distinguished by good taste and well-defined scholarship. He used the word "fashion" advisedly, because these outward forms and semblances were for ever changing to the caprice of the moment. At one time fashion mocked the Classic Greek spirit, at another it possessed the external attributes of the real Italian Renaissance, a little later the Greek idea reappeared under the pseudonym of "Neo," while the Entente Cordiale preluded that outbreak of modern French design which had appeared almost like an epidemic in the streets of London. These waves of architectural fashion had their little period of popularity; they caught the eye of the up-to-date assessor for a few brief years, and then they faded away, unmourned and unwept, for Fashion, like Fortune, "is ever a fickle jade."

If they placed themselves, as Mr. March Phillipps had suggested, "outside the charmed circle of the architect's inner consciousness," and endeavoured to regard the modern presentment of architecture from the critical standpoint that they would apply to any other human activity, would they be convinced that they were really giving fitting or logical æsthetic expression to the national architecture? It was generally admitted they had failed to do so, but the remedy suggested was not to deal with fundamental elements, but to adopt the outward expressions of this or that foreign school or this or that period, in the vain delusion that they were going to pick up the threads of a national style, and produce buildings which would be in complete accord with the aspirations and intellectual activity of to-day. Did the results of the past hundred years justify such an assumption? To attempt to deny the nationality of building art, and to disregard the influence of climate and materials upon its expression, was to deny one great formative influence of every style; yet they were told they must find their true expression by a specious international competition, whereby the possibly clear speech of another race became a tiresome jargon.

Was there any reason in the senseless reproduction of meaningless features which had long since lost any structural reality and were mere atrophied remains of some ancient structural form? Was it not merely use and custom which made them expect the presence of these features, and did not they need to create a new critical faculty, such as the Greeks possessed, which would demand not meaningless constructed ornament, but structure suitably ornamented or textually perfect, because they understood the meaning of the structure and the limitations of the materials composing it? Were they still to be led away by the exuberance and limitations of the Italian humanists rather than to learn the principles of the inexorable, reasoned restraint which the Greeks upheld? He submitted that their failure was due, not to want of ability, imagination, or even lack of taste, but to a lack of critical insight and training which had led them to pursue the false instead of the true, to follow the letter and neglect the spirit, coupled with a national incapacity to think inductively or even logically. While they had "muddled through," the national common sense had in the main asserted itself, in so far that there had been comparatively little actual transcript during the last fifty years, but there had been a general reluctance to free architectural forms from redundancy or to grasp the commonplaces of all evolutionary movement. Viewed broadly, the architecture of the past hundred years reflected very faithfully the general ferment in civilisation, and amidst such rapidly changing social conditions it would be strange to find any clear expression of architectural unity. He would, however, urge that the time had now come to gather up the threads of knowledge and realise the intimate relationship between national architecture and national life. The expression of a great nation in its national architecture should be correspondingly great, fervent, and well defined, intellectual, not emotional.

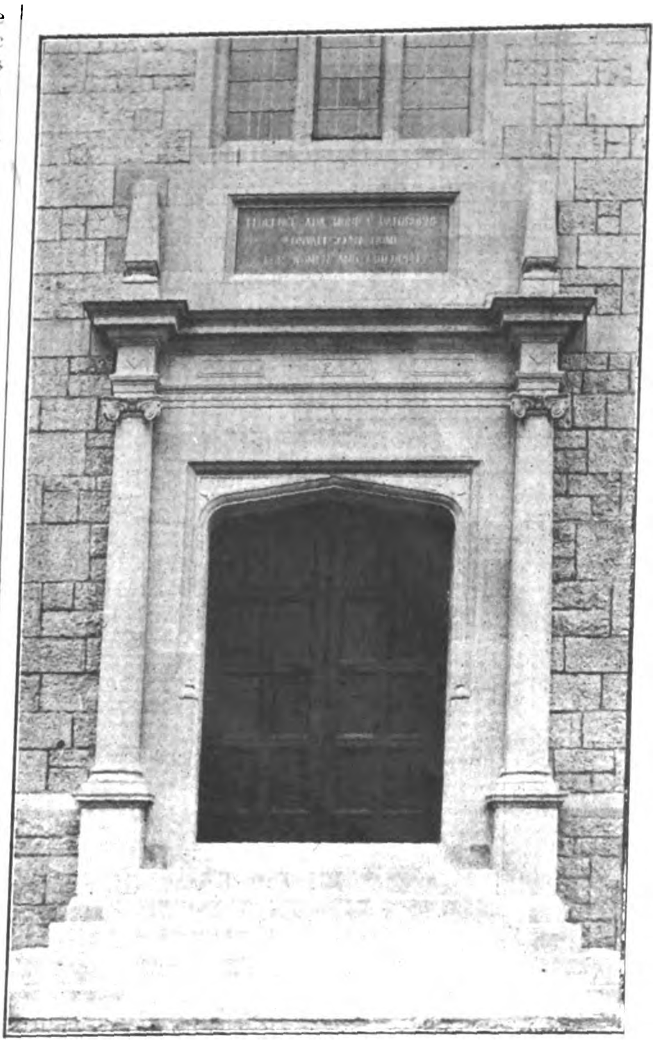
It might be said there were signs of better things, that good work was being done, that they were educating architects on a systematic basis, and were more alive to the higher possibilities of a national architecture, and its relation to national prestige and hygiene. That might be true, but as a whole was it not a fact that they had had a hundred years of revivals and fashions, and the only real change seemed to be that now they had several fashions in vogue at the same time that they were tossed hither and thither on the wave of the moment, until the crest curled and broke, and they found themselves floating helplessly on a lee shore, mixed with the scour and froth of the spent surge and waiting for the next wave in the fond delusion that it would land them somewhere?

If the art of architecture in England was to be in the main the produce of trained intelligences and not the wayward expressions of fitful genius, its progress must be the result of intellectual and reasoned thought. The application of reason must eventually concede that the practice of a structural art must be based on structure and an intimate knowledge of the æsthetic and mechanical properties of the materials composing that structure, and that expression would grow out of the skill and taste with which the problems of plan and structure were combined rather than in the mechanical acceptance of a pre-determined external presentment, couched in the form of some selected period or style. Reason, too, must eventually concede that such phrases as symmetry, proportion, balance of parts, "the grand manner," and the like did not necessarily imply that any particular period or style must be selected in order to give them expression, but rather that all great architecture must conform to certain definite laws of order and arrangement; and that architecture, being man's highest concrete presentment of objective form, must convey in no obscure terms the inner significance of his national mentality.

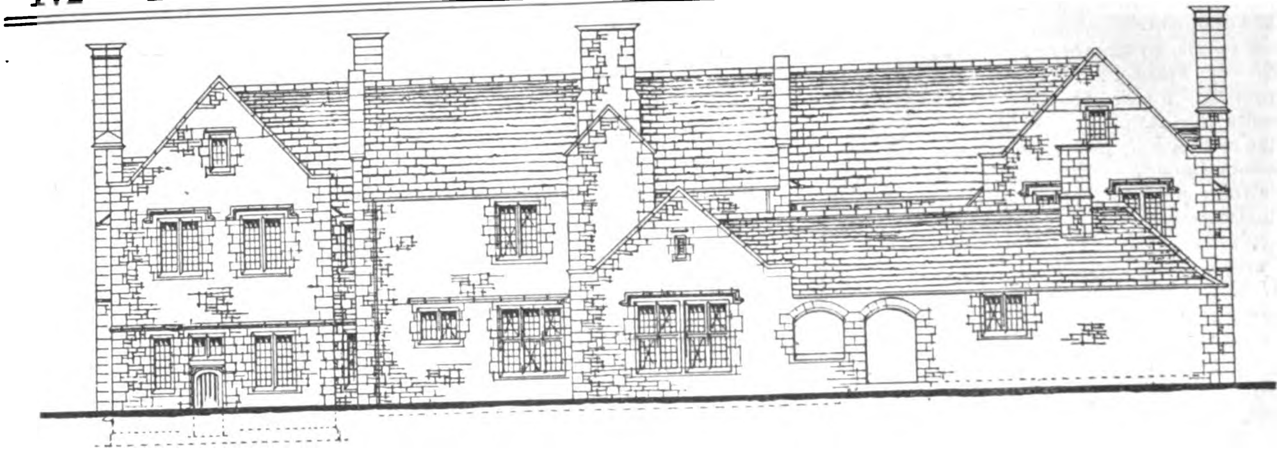
An interesting discussion followed, among those taking part being Messrs. MacMichael, Chas. E. Bateman, Reeve, Swan, Porter, and Buckland.

The President, in a few closing words, said he thought the crux of the question lay between the two extremes. There was the small problem in which the construction played a very important part, and there was the big problem which was above construction. He did not think it mattered much whether their buildings were done in one particular phase of Classic or in one particular phase of the Renaissance, but what was more important than that, he thought, was the relation of one building to another. They must have some consideration for the unity of the buildings in the neighbourhood, and select types of architectural designs which were in harmony with the surroundings.

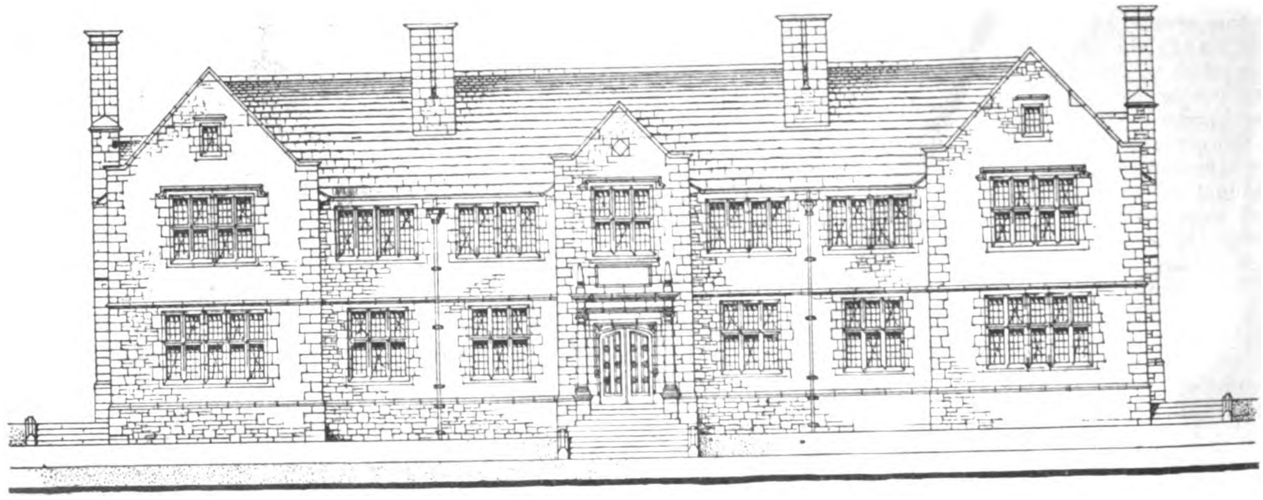
A hearty vote of thanks was accorded Mr. Maule for his address.



RATHBORNE CONVALESCENT HOME, PARWICH, DERBYSHIRE.—ENTRANCE DOORWAY.—Mr. W. R. Mosley, Architect.



NORTH ELEVATION



SOUTH ELEVATION

RATHBORNE CONVALESCENT HOME, PARWICH, DERBYSHIRE.—Mr. W. R. MOSLEY, Architect.

GERMAN TOWN PLANS AND HOUSING.

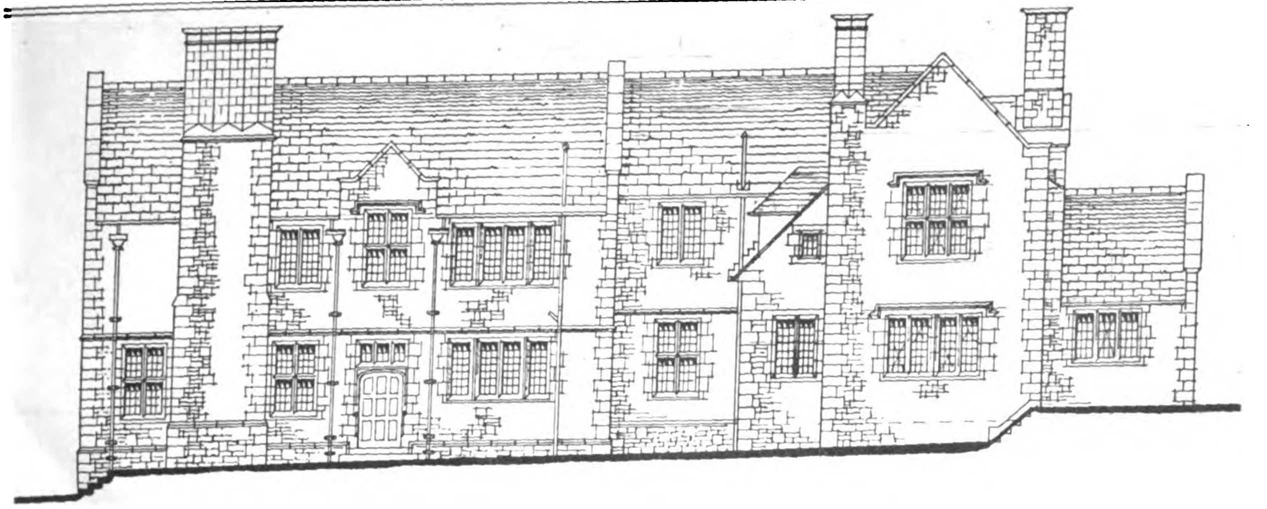
AN interesting contribution on German town planning was given by Mr. Charles C. Reade on Tuesday, February 3, at the Royal Institute of British Architects, when Mr. Raymond Unwin, F.R.I.B.A., presided. Mr. Reade, who is organiser of the Australasian town-planning tour, lately spent two months in Germany in securing numerous photographs and plans, including some instructive material relating to housing conditions and land speculation. The lecture was organised by the Garden Cities and Town Planning Association.

Mr. Raymond Unwin, in introducing the lecturer, said he had already had an opportunity of seeing the plans and photos brought by him from Germany, and he was sure that many people besides himself would be surprised at what they revealed in regard to German town planning and housing. He referred to the fact that Mr. Reade was shortly leaving England to undertake the organisation of a series of lantern lectures by Mr. W. R. Davidge, F.S.I., &c., in the principal towns and cities of Australia and New Zealand, and in recalling the services rendered by the lecturer in successfully opposing the Northern Junction Railway Bill last year was sure that his powers of organisation would be of distinct service in promoting the cause of town planning in Australasia.

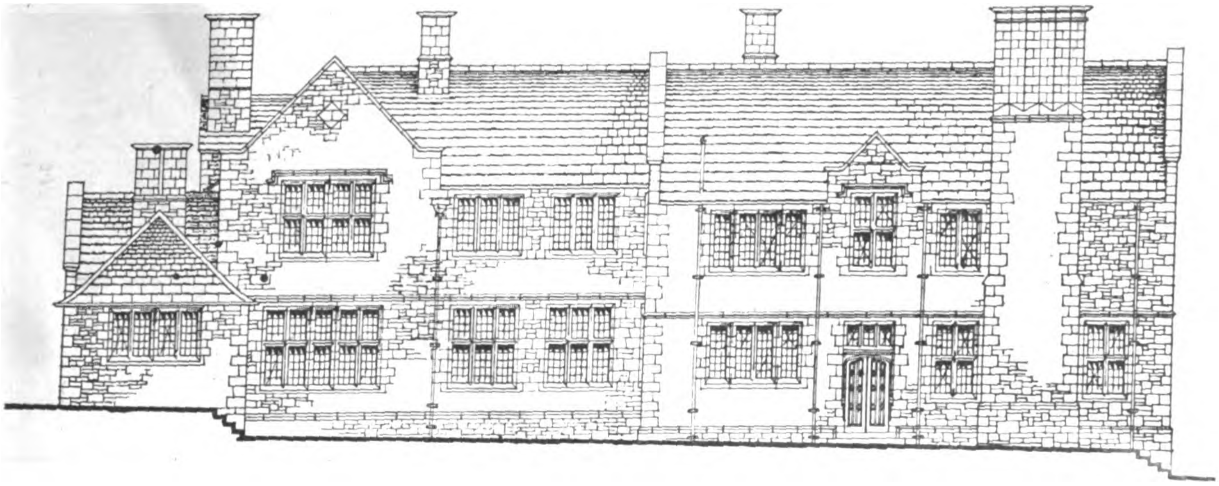
The lecturer, in analysing the changes in German town planning during the last 100 years, said that German town planners of the nineteenth century were animated by much the same aspirations and ideas of civic splendour as were the architects of the Renaissance and those responsible for the planning of Paris. They were stylists in search of imposing vistas and big effects. Their function was to give æsthetic expression to royalist ambitions and dreams of Imperial splendour. They represented essentially what he called the "Grand Seigneur" attitude of mind.

To-day there were totally different forces determining big schemes of city extension, such as characterised the efforts of Dusseldorf, Cologne, Leipzig, and others. The Germans to-day were no longer a people dominated by intellectual dreams and philosophical abstractions any more than town planning remained the hobby of distinguished personages aided by learned architects. It was only in recent years that town planning economists like Professor Eberstadt had discovered that the "Grand Seigneur" attitude of mind had not worked at all happily in conjunction with the new factors of mechanics, chemistry, electricity and transit, and great agglomerations of human beings swarming day by day into ever-expanding towns and cities.

Since the late sixties it was common knowledge that Germany had undergone a vast transformation in activities and ideas. The philosophic strivings of earlier generations had been overpowered and diverted by forces making for commerce and Imperial expansion. Her schools and professors, her public men and literature, her very institutions had all responded to the realities of twentieth-century development. In Germany to-day the town-planning authority was no longer the "Grand Seigneur," but the fiercely busy factories and coalfields, immense laboratories distilling unheard-of secrets from nature's storehouse, great docks alive with commerce, widespread networks of railways and canals throbbing with transit, and finally omnivorous banks, each and all bearing toll to the great god of money. In less than fifty years Germany had crowded into her towns and ports much of the phenomena of industrial expansion and economic development that had taken England nearly a century to materialise. During that fifty years the increase of population and growth of towns had been faster on the average than those of America, with the exception of Chicago. Since 1870 hundreds of acres of agricultural land on the outskirts of the principal towns had been converted by land speculators and others into the brick and mortar congestions of the modern city. Most of that development had been carried out under municipal supervision and a more or less effective system of planning roads and building lines in anticipation of the growth of the city. How far that kind of town planning had succeeded in providing for the housing of the people and avoiding the social ills and disasters produced by overcrowding was illustrated by a striking series of photographs and



EAST ELEVATION



WEST ELEVATION

RATHBORNE CONVALESCENT HOME, PARWICH, DERBYSHIRE.—Mr. W. R. MOSLEY, Architect.

numerous five and six storey tenements from Berlin, Munich, Cologne, and other cities.

It was easy in Germany, Mr. Reade pointed out, to buy and sell land. The procedure in transfer was extremely simple compared with England. It corresponded, in fact, very much with the Land Transfer Acts of Australasia, where a sale and legal transfer can be effected within a week if desired. The rapid increase in population and its movement towards the towns, combined with the astonishing rise of industry and commerce, had resulted in heavy speculation in land and building in all German cities. It was a very common thing to find that land valued at £30 or £40 per acre for agricultural purposes a few years ago now fetched £3,000 to £4,000 per acre for building purposes. City land since 1870 had increased by 100 to 150 times in value. Building land in Germany, as Mr. Horsfall had had occasion to point out, was now seven or eight times as high as it is in England.

Nearly seventy slides were shown by Mr. Reade, revealing by plan and picture the way German cities had been piled up into houses and tenements four, five, and six floors high. A series of diagrams from Cologne revealed the interesting fact that whilst the density of the old town in parts was as high as 700 persons per acre, the number of persons on the Ringstrasse, planned and built since 1881, was over 1,000 per acre.

Modern middle-class housing was illustrated, showing houses four and five floors high built up to the street frontage, with practically no garden space behind. Brand-new working-class housing of similar type was also illustrated, whilst numerous examples revealing fronts and backs of five-floor tenement houses and courtyards were shown on the screen.

The examples from Berlin and Munich were extremely telling, disclosing as they did the high premium which housing conditions in all German cities put upon light and air owing to the very large number of five and six-floored houses crowded on to the land after wide streets, public gardens, and other communal features had been provided for. Other revelations were given in a number of slum pictures of one and two-roomed houses deriving light and air only from a narrow courtyard reaching up to five and six floors in height. The rooms of these houses were not only dark and the atmosphere stuffy, but the accommodation seemed small. A one-roomed house, for instance, was 14 feet long by 5 feet 6 inches wide, and a little over 6 feet in height. The room was occupied by a mother and son, the latter being consumptive.

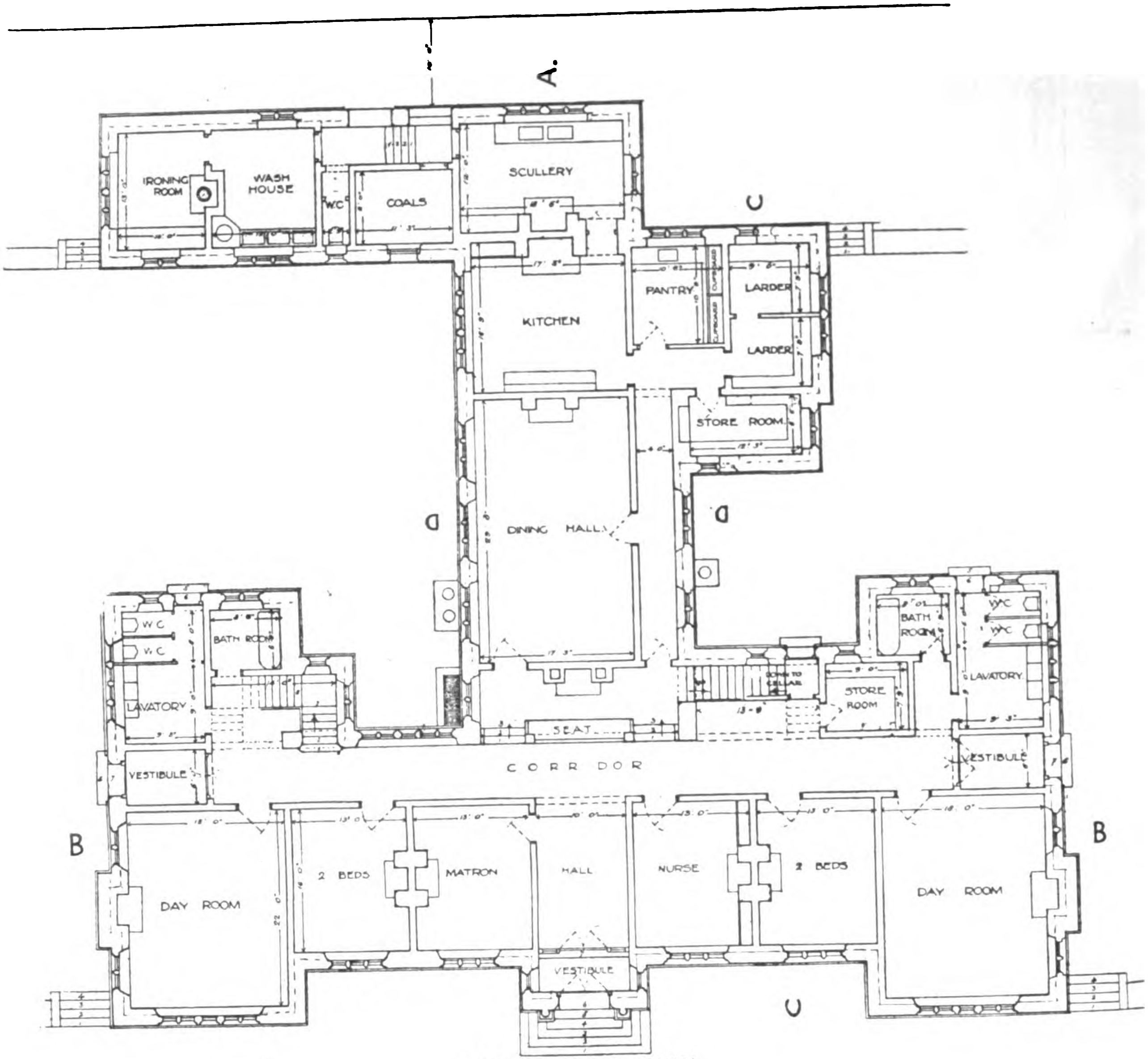
The series of photographs and diagrams illustrating defects in German housing were very convincing, and made it abundantly clear that the particular form of German town planning since 1875, which had provided wide avenues and spectacular gardens, had neglected to secure corresponding advantages in the homes of the great mass of people.

The astonishing growth of the German city was shown in typical instances taken from Munich, Leipzig, Cologne, and Berlin. A plan of Munich prepared in 1810 showed the city of that day less than one-tenth of the size of its present area, surrounded by belts of wood, whilst further out large forests were in existence at various points round the city. To-day all those woods had disappeared, and the forest lands seriously curtailed by the rapidity with which Munich had spread. The growth was still going on, as only last year Munich had extended its boundaries, making an area greater than that occupied by the London County Council.

The growth of Leipzig furnished another telling episode. By far the greatest development in Leipzig had taken place since 1864, whilst the story of the growth of Berlin during the past forty years under all the conditions attaching to land speculation was lucidly illustrated by an interesting series of plans and diagrams.

On the constructive side Mr. Reade gave an exposition of the big town planning scheme in Leipzig which had been prepared in connection with the recent celebrations in commemoration of the victory over Napoleon of the Allied Armies in 1814. To celebrate the centenary patriotic Germany had subscribed £300,000 to erect a monument 300 feet high, which had taken nearly fourteen years to build. The monument was linked up with a big scheme of town planning

RATHBORNE CONVALESCENT HOME
PARWICH DERBYSHIRE



GROUND FLOOR PLAN

A

Mr. W. R. Mosley, Architect.

prepared by the City Engineer, Herr Stroebel. Plans of various projects for this particular scheme prepared since 1870 were illustrated, and revealed marked changes in the methods of town planners.

Another interesting scheme described was that prepared by Dr. Wolf, the city architect of Schoneberg, for a large block of land close to Schoneberg, which for many years had been prevented from developing owing to numerous railway embankments in its vicinity.

As a rule, rents in Germany were dearer, accommodation smaller, and light and air in the home were sometimes at a greater premium for working people than in England. Four-fifths of Germany's civic populace did not know what it was to have a garden patch attached to their homes, other than where allotments were available in suburban areas some distance away from the houses. Death rates, as a rule, were higher. The chief exceptions were to be found at Ulm and in the garden suburbs which were now being built and controlled on English lines. The policy undertaken at Ulm of purchasing large blocks of land at its agricultural value suggested a possible way of solving the difficulties of German town planning. The town had built houses and sold them, together with the land, with a proviso that if the owner wished to sell the city would have the right to buy back the houses and ground at the original valuation. This practice was much more satisfactory than the usual one of towns buying up large quantities of land and selling it again. The fact of buying and selling of land by the towns and the high prices asked by Government departments had only stimulated value and added to the economic difficulties which were telling strongly against the successful housing of the working classes.

Whilst there was a great deal of overcrowding and downright slumdom in parts of the German cities, on the whole Mr. Reade thought that the habits of the people would compare favourably with that of the English. Comparison was misleading, because the facts and realities of German slumdom could not altogether be separated, owing to the fact that Germany had been an industrial nation only since 1870. She had still to materialise to the same degree that Britain had, the results of speculative building and defective town planning. At least one important consideration stood out which British town planners would do well to investigate, and that was the possible effect that any legislative measure may have in England which was designed to simplify land transfer and at the same time cause vacant or unbuilt lands to be put to a greater economic use than at present. Whatever other advantages simplicity of land transfer may have, the fact remains that in Germany it had not hindered but facilitated speculation in ground values.

Germany showed, Mr. Reade pointed out in conclusion, how often successful town planning rested upon purchase of land beforehand at its existing value by the local authority. Examples of Ulm, Strassburg, and other places proved the efficacy of the practice, whilst there were many instructive cases to be quoted showing that housing schemes in Germany

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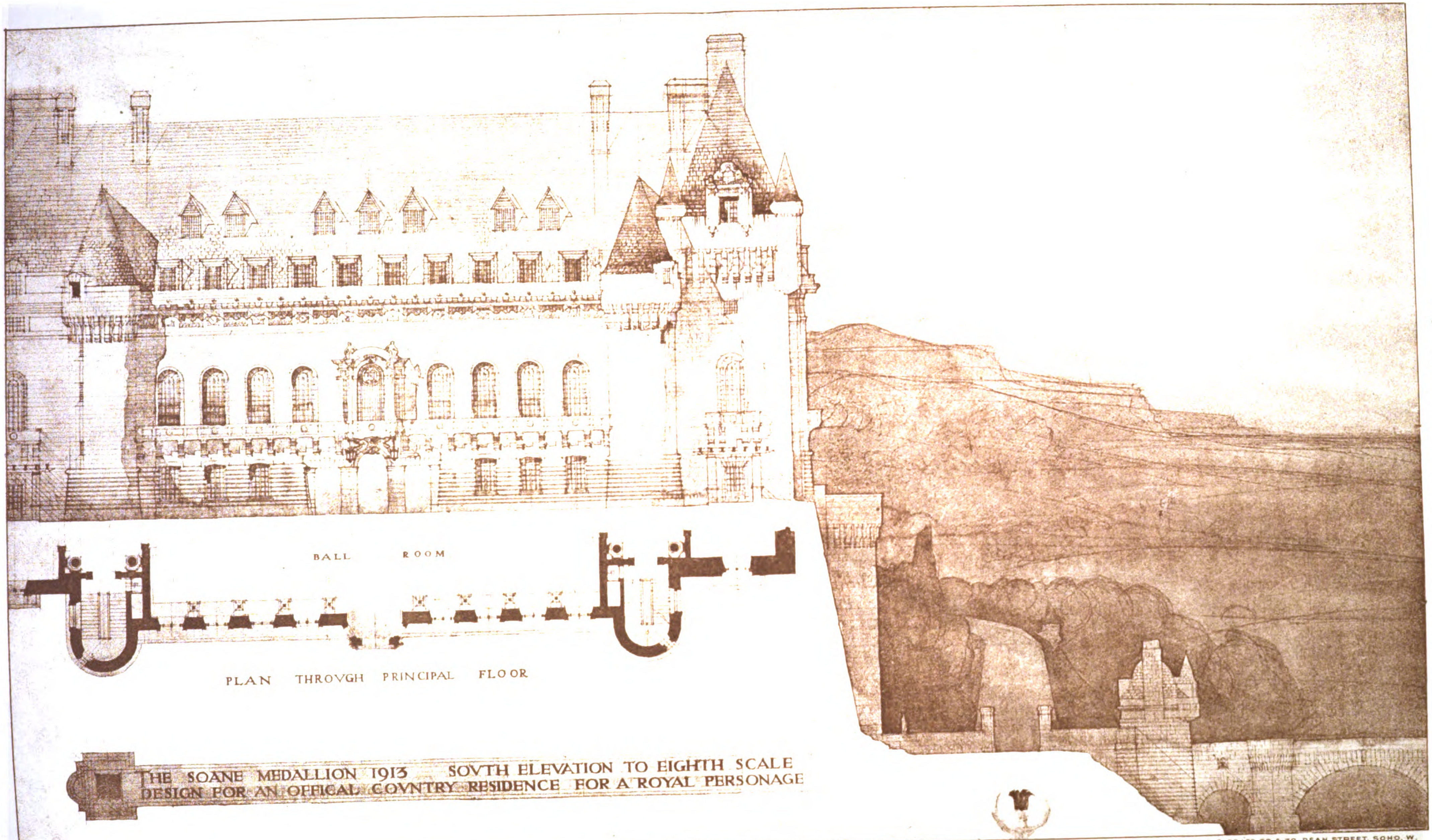
BALL ROOM
PLAN THROUGH PRINCIPAL FLOOR
THE SOANE MEDALLION 1913 SOUTH ELEVATION TO EIGHTH SCALE
DESIGN FOR AN OFFICAL COUNTRY RESIDENCE FOR A ROYAL PERSONAGE

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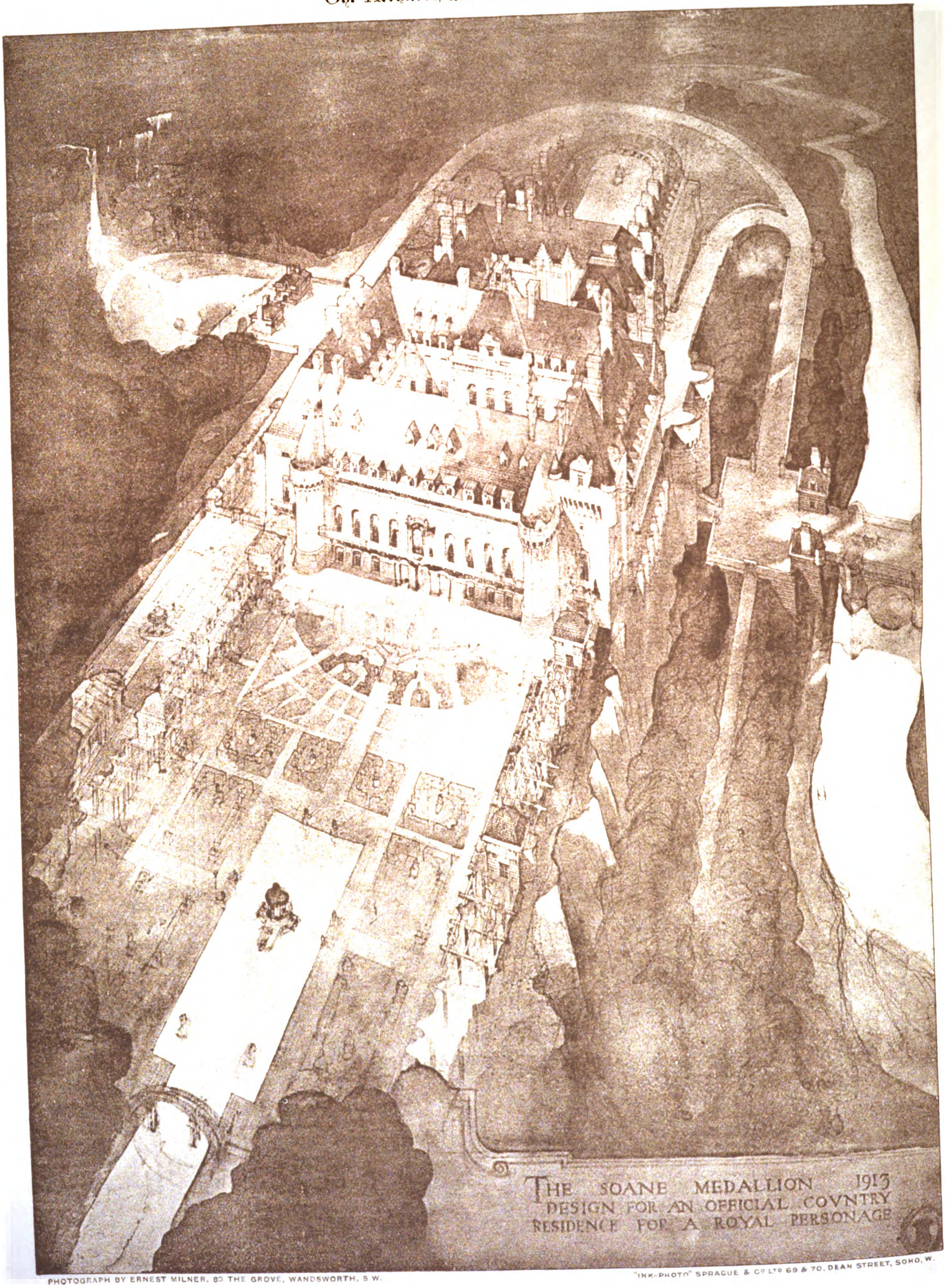
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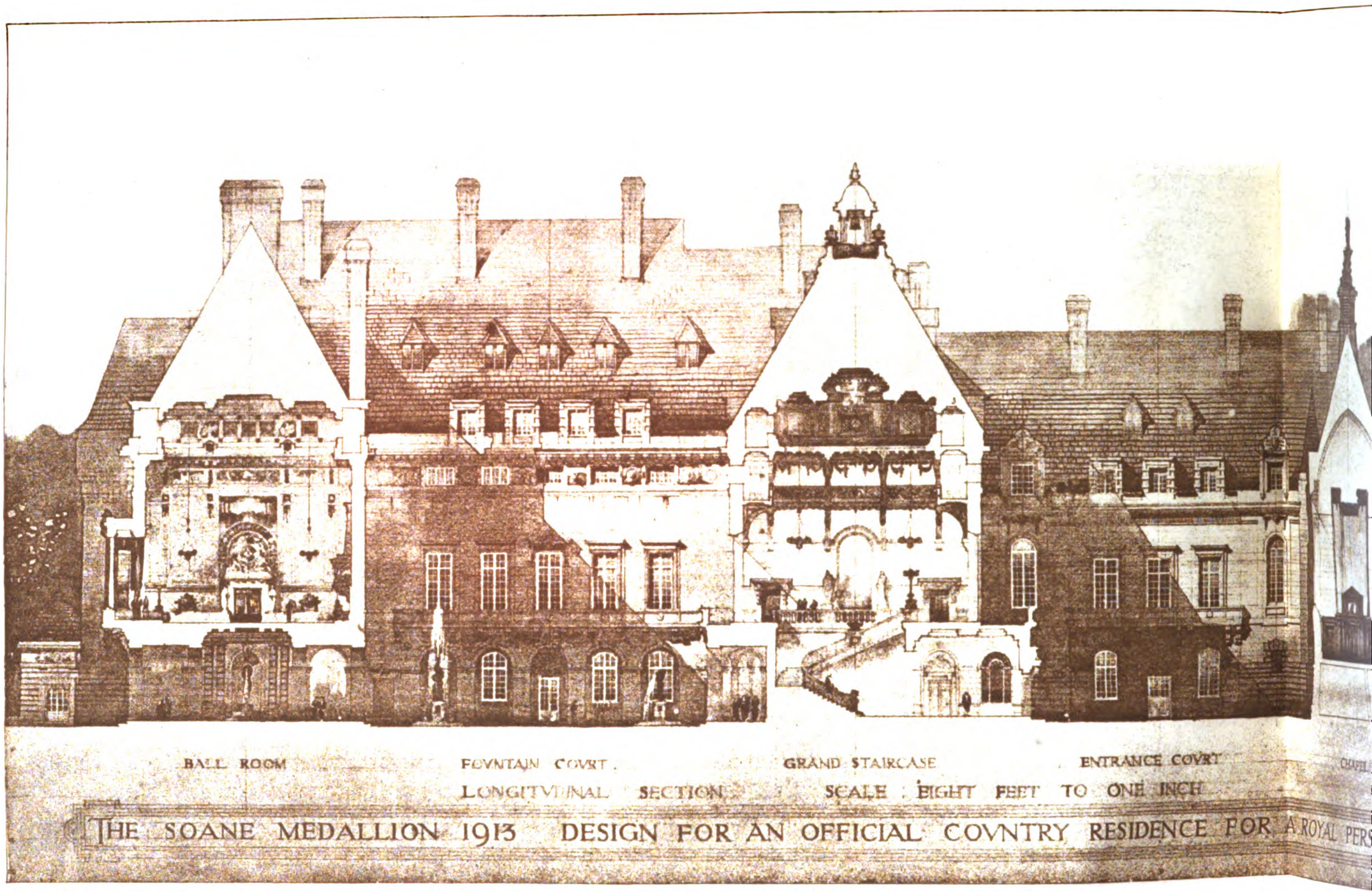
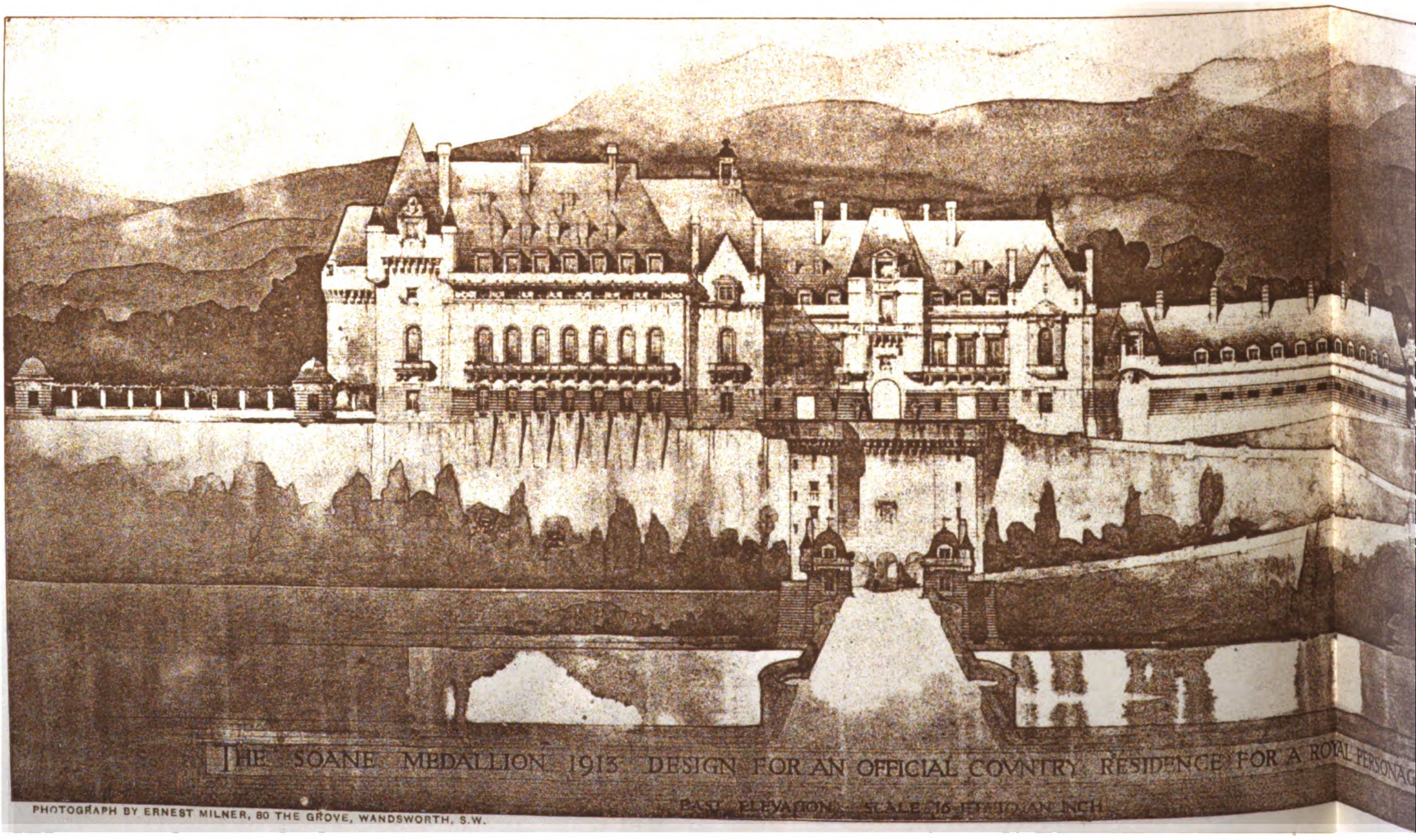

BALL ROOM
FOVNTAIN COVRT
GRAND STAIRCASE
ENTRANCE COVRT
CHAPEL
LONGITVDINAL SECTION
SCALE: EIGHT FEET TO ONE INCH
THE SOANE MEDALLION 1913 DESIGN FOR AN OFFICIAL COVNTRY RESIDENCE FOR A ROYAL PERS


THE SOANE MEDALLION 1913 DESIGN FOR AN OFFICIAL COVNTRY RESIDENCE FOR A ROYAL PERSONAG
EAST ELEVATION SCALE 16 FEET TO AN INCH

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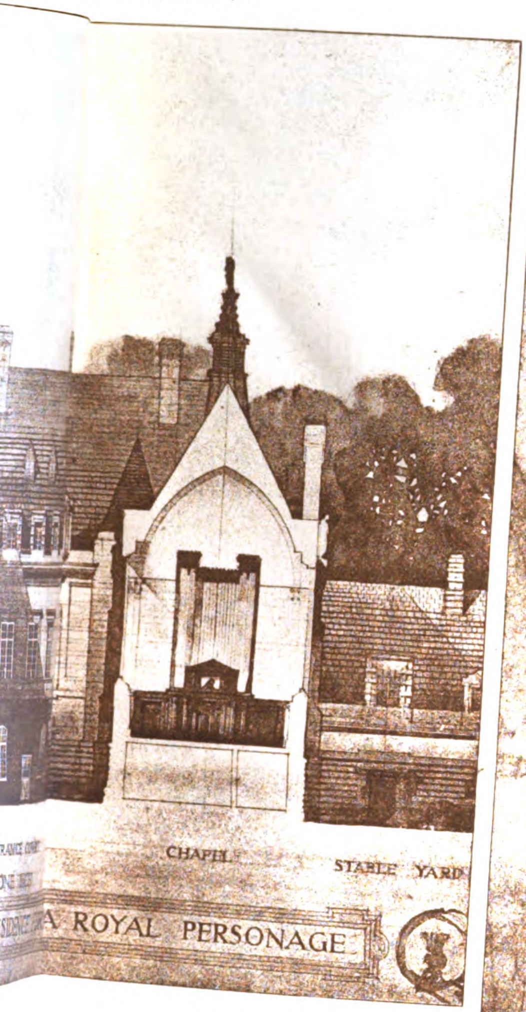
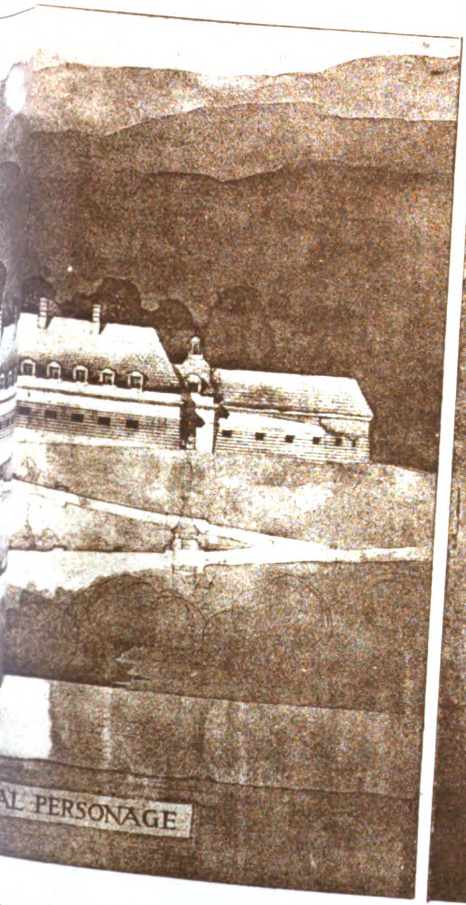

CHAPEL
STABLE YARD
A ROYAL PERSONAGE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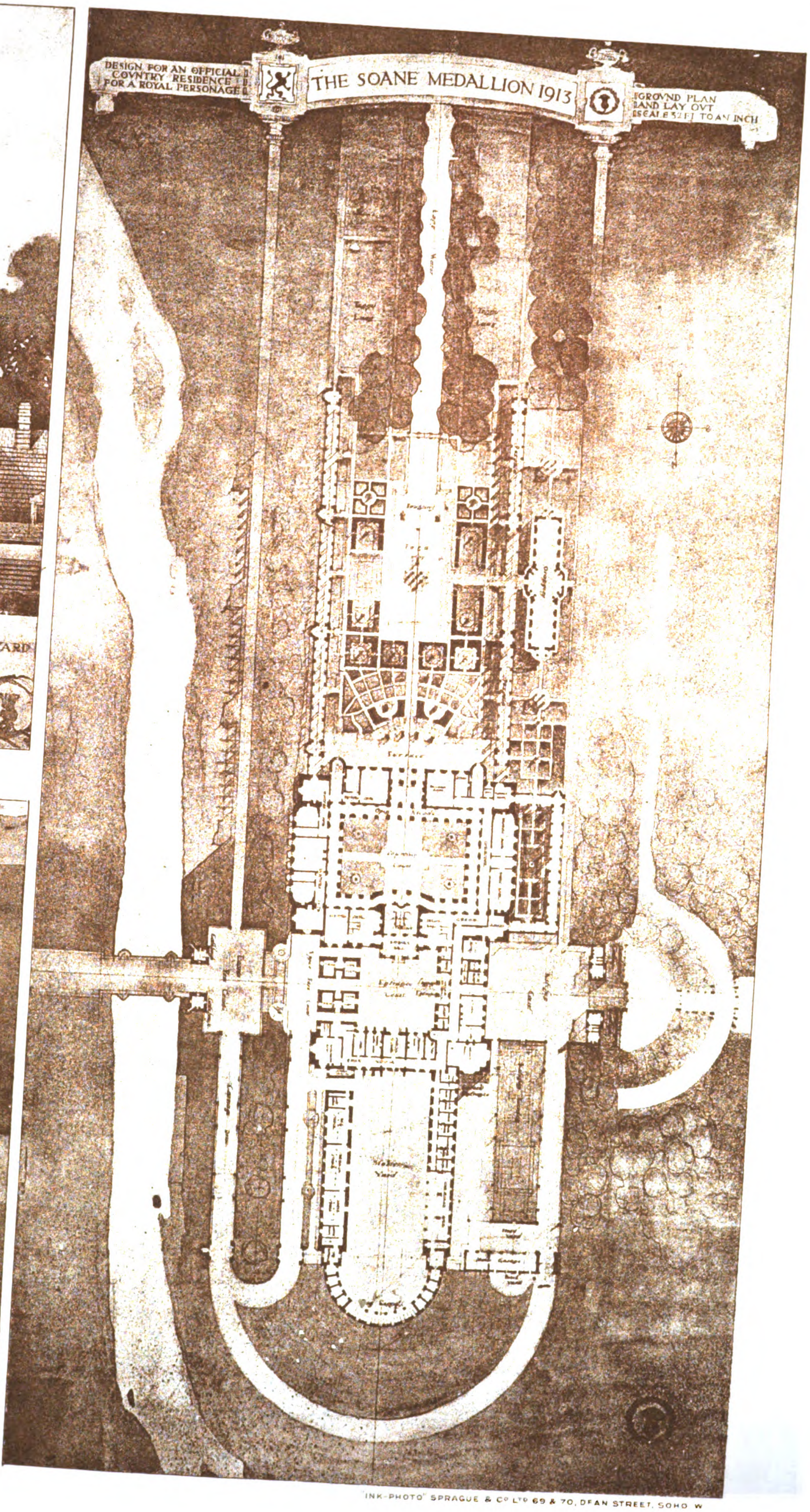
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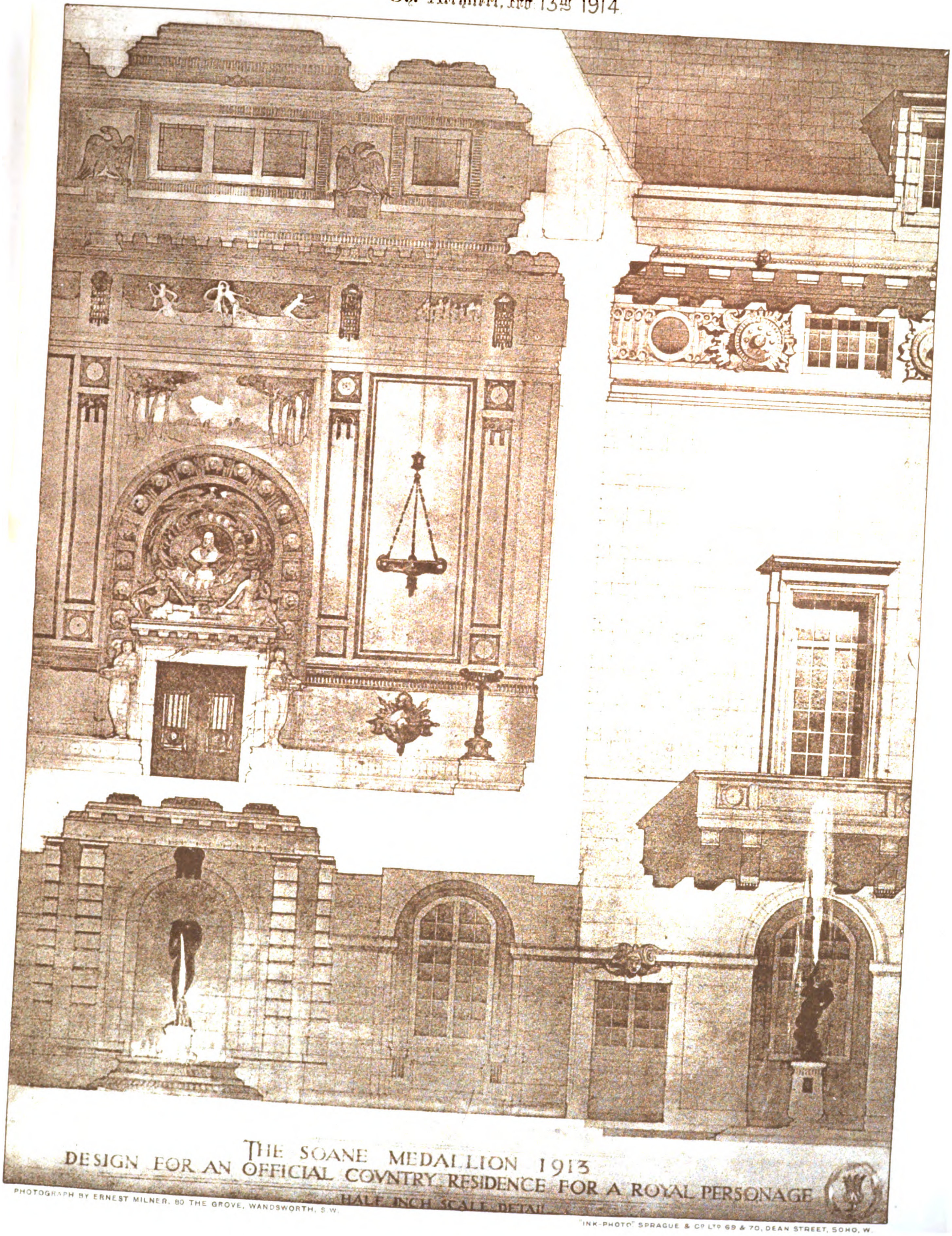
THE SOANE MEDALLION 1913
DESIGN FOR AN OFFICIAL COVNTRY RESIDENCE FOR A ROYAL PERSONAGE
HALF INCH SCALE DETAIL

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THE WINNING DESIGN FOR THE SOANE MEDALLION.

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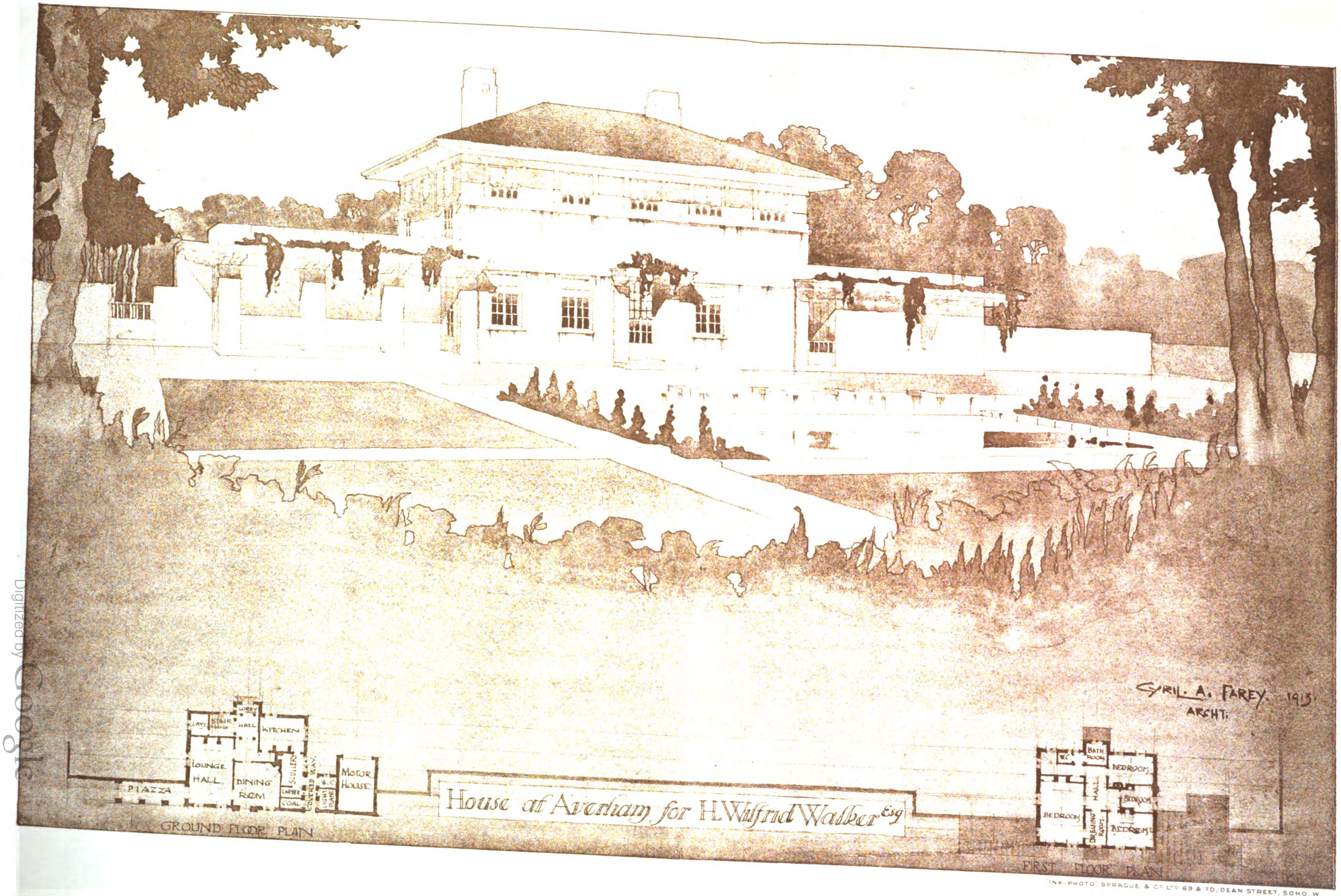

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Cyril A. Farey. 1913
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KITCHEN
LOUNGE HALL
DINING ROOM
SCULLERY
LARDER
COAL
COVERED WAY.
W.C.
LIGHT PLANT
MOTOR HOUSE
PIAZZA
GROUND FLOOR PLAN
W.C.
BATH ROOM
BEDROOM
HALL
BEDROOM
BEDROOM
DRESSING ROOM
BEDROOM
FIRST FLOOR PLAN

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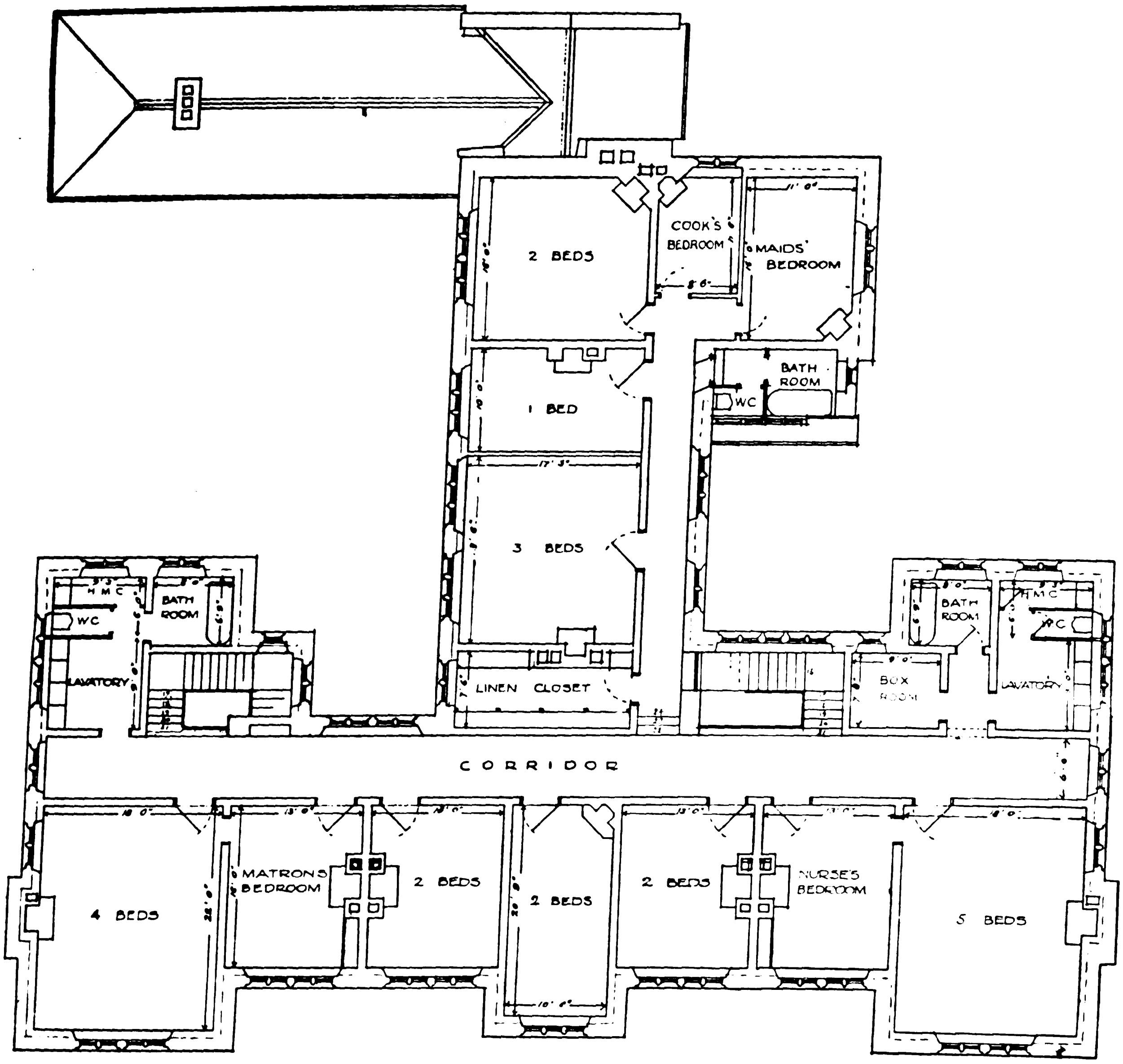
RATHBORNE CONVALESCENT HOME
PARWICH DERBYSHIRE



FIRST FLOOR PLAN

Mr. W. R. Mosley, Architect.

had failed to provide houses and gardens at economic rents which working people could afford to pay, because the local authority was unable to purchase secretly the ground beforehand. The danger of town planning schemes, in short, was that they would be used by interested parties to force up ground values before purchase by local authorities or others, and so defeat successful housing of the working classes.

Mr. H. R. Aldridge, Secretary of the National Housing and Town Planning Council, moved a vote of thanks to the lecturer for what he described as a brilliant piece of work. The vote was seconded by Dr. Fremantle, Treasurer of the Garden Cities and Town Planning Association. Mr. Raymond Unwin also expressed his indebtedness to the lecturer for the large amount of useful knowledge and illustrations he had gathered together during a two months' tour in Germany. He was sure that British town planners would be grateful to him for so valuable a contribution, which only showed how very important it was in town planning to have as complete information as possible beforehand.

Numerous questions were asked, and the proceedings concluded with the usual vote of thanks.

THE LIGHTING OF LONDON.*

By Leon Gaster,

Hon. Sec. of the Illuminating Engineering Society.

It is interesting to note that although the lighting of the streets is now a public duty, in days gone by it was a purely private obligation. In 1415, Sir Henry Burton, then Lord Mayor of London, ordered all householders to hang out lanterns during the dark winter evenings, and in subsequent legislation a fine was imposed on those who did not comply with this order.

The illumination of those days was very feeble, and the bad lighting gave rise to great disorder in the streets. Consequently, we find that in many cities—notably Paris—street lighting came to be associated with the duties of the police.

During the last century a remarkable change has come over street lighting. Probably the old oil lamps introduced

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*** Abstract of Paper read before the London Society at the Royal United Service Institution, Whitehall, S.W., on February 10.**

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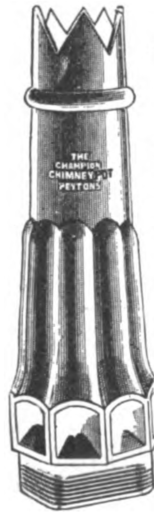
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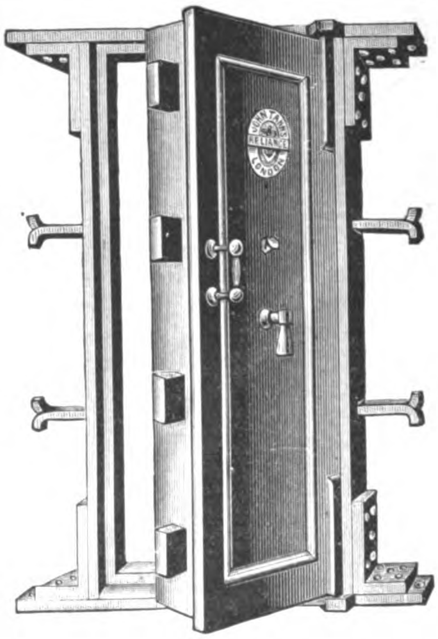

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about 1800 gave considerably less than one candle power; to-day our streets are lighted by gas and electric lamps giving over a thousand candle power.

The need for this better illumination has arisen largely through the increased speed of traffic and the very much greater extent to which our streets are used for pleasure and business by night. Not only has the illuminating value of lamps enormously increased, but authorities are now taking more interest in the best method of using these lamps. In 1908 the City of London sent a special deputation abroad to inspect the lighting of various continental cities, and several American cities sent over to Europe at intervals experts (in some cases the electrical and gas engineers and also the financial advisers), in order to study the conditions here.

These visits have led to some remarkable changes throughout the City of London. The method of central suspension by wires over the roadway, which has been in use for many years in the Continental cities, is now becoming common. Curiously enough, this method of central suspension, which is considered to have several advantages from the lighting standpoint and traffic requirements, was used centuries ago in the streets of Paris, and old prints can be seen showing the oil lamps hung by ropes and presented to the gaze of admiring citizens.

As a result of the improvements initiated in the City of London about the end of 1911, it is estimated that the amount of light in the streets of the City area both gas and electric—will be increased by some 600,000 candle power; but that the annual saving in cost will be about £6,000. Such results show what is possible to be accomplished by studying the lighting of streets in a more scientific manner. It may be mentioned that in the area controlled by the Gas Light and Coke Company, the candle power of the lamps employed has increased from 1,900,000 candle power to 4,300,000 during the last ten years. Again, in the South Metropolitan Gas Company's area, the candle power provided is no less than eight times what it was in 1882—namely, from 14,014 flat flame burners giving 175,000 candle power in 1882 to 24,560 incandescent burners giving 1,400,000 candle power at the end of 1913.

Similarly, electric lighting has made enormous strides since its introduction about thirty years ago, and of late much attention has been paid to the design of special dioptric globes, intended to distribute the light better along the street and improve the illumination of those parts of the pavement most remote from the lamps. In order to illustrate the great opportunities for economies and improvements, it may be mentioned that the annual cost of the electric street lighting of the whole of London alone exceeds £100,000.

There is no doubt that the street lighting in itself is a big subject. We have to consider the kind of lighting suited to various streets, the conditions which are desirable in the interest of traffic and pedestrians, and the desirability of artistic effect.

Besides the actual amount of light needed in various streets, consideration should be paid to the effect of driving from a side street into a brilliantly illuminated main street which is apt to dazzle the driver. In some German cities, a system of grading the illumination by lamps of progressively increasing candle power is adopted, so that the change from the comparative obscurity of the side street to the brightness of the main thoroughfares takes place more gradually.

Again, while the lighting of rural roads falls outside the scope of this paper, there are nevertheless certain main roads running out of London which serve as arteries of traffic and deserve to be carefully lighted. This point was considered at the recent International Roads Congress, where some of the speakers recommended that these important highways should come under national control.

A short time ago the members of the London Society were considering the effect of the immense illuminated signs on the Embankment, the glaring effect of which was considered objectionable from the artistic standpoint. This is a view that will be shared by many people, but it may be pointed out that those who object to the use of such signs for advertising have also the obligation to encourage the use of illuminated signs in situations where they would be really useful. For example, how much more might be done in the design of really artistic signs to indicate to the visitor the nature of public buildings, post offices, call offices for telephones, railway stations, &c., and even the names of our main streets might surely be treated in this way. Some progress has been made in this respect during the last few years, and is very much appreciated by the public.

A word may also be said as to the possibilities of lamps outside such important buildings being treated in a more artistic manner. It appears that we do not sufficiently realise what a large part light plays in the appearance of a city by night. In many cases the lantern in which the lamp is placed is of artistic design, but owing to the glaring nature of the unshaded light, the outlines of the lantern cannot be seen.

Lighting should really be closely associated with architectural design and with town planning, and if—as Sir Aston Webb recently advocated—we should come to possess a Ministry of Fine Arts, it may be hoped that the design of lighting fixtures for our streets and public buildings will be one of the things to be considered.

Some years ago, the author pointed out the need for some central authority to undertake the supervision of public lighting, some body which would have an incentive to make experiments, to assist those districts on which the expenditure of public lighting falls heavily, and to bring about some generally accepted standard as to the conditions of lighting certain classes of streets really need. Such an authority might well deal with the artistic aspects of public lighting as well.

Greater London, extending over an area of roughly 75,000 acres, is served by fifteen municipal electrical supply undertakings and thirteen privately-owned electrical supply companies and mainly by five gas companies; the bulk of the gas lighting, however, is carried out by the Gas Light and Coke Company.

It will be seen, therefore, how very varied the lighting of London must be, and it is hardly surprising that within a distance of a couple of miles, say from Aldgate to Bayswater, on the same main road, no less than six different systems of lighting can be seen.

At the present moment, when a scheme for the unification of electrical supply throughout London is being considered, one may well ask whether it may not be possible to establish some form of central authority specially to deal with the lighting problems. Such a body, even though not undertaking the lighting of the respective districts, might be in a position to make some guiding recommendations which would be acceptable for the whole of London.

I believe that the Road Board are considering the organisation of illuminated signs of various kinds to indicate obstructions in the road and short turnings to motorists, and are thus undertaking one piece of the kind of work suggested. I venture to hope that this body will take greater interest in the subject of street lighting in the future.

A few words may be said in favour of more and better lighting to be used in the public parks, making them a more satisfactory recreation ground not only in the day, but also in the evening, and helping to increase the general health of a large section of the public of London.

The standard of lighting in the main thoroughfare of a city may well be regarded as a criterion of its state of civilisation and prosperity in other directions.

BUILDING PROGRESS IN THE PROVINCES AND SUBURBS.

A LIST OF WORKS PROJECTED OR COMMENCED.

(N.B.—Local Authorities, architects, and others are invited to submit full particulars for insertion in this weekly list. Where districts are not entered against names of architects and builders the address is as a rule local.)

ENGLAND.

Cheshire.

Altrincham.—Artisans' dwellings, Lloyd Street.

Saltney.—One hundred and thirty garden-city houses.

Cornwall.

Lostwithiel.—Proposed School of Handicraft.

Eight workmen's dwellings, Rosehill.

Derbyshire.

Tibshelf.—Church Hall.

Devon.

Barnstaple.—Houses, Charles Street. Mr. J. C. Southcombe, architect, Bridge Buildings.

Torquay.—St. James's (proposed) Parish Church (£6,000). Mr. W. D. Caröe, F.S.A., architect, 3 Great College Street, Westminster, London.

Durham.

Bishop Auckland.—Newton Cap School: additions and alterations. Mr. W. Rushworth, F.R.I.B.A., County Education architect, Shire Hall, Durham.

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Houghton-le-Spring.—The Northern Hospital: extension. Council surveyor.

ESSEX.

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Chadwell Heath.—Six houses, Eustace Road, for Mr. J. T. Inman.

Hornchurch.—House, Woodland Avenue, for Mr. J. A. H. Bishop.

Messing.—Council School for 120 places. Messrs. J. Smith & Son, contractors, Chipping Hill (£1,592).

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Upminster.—Two houses, Gaynes Road, for Messrs. Dowsing & Davis.

Wickford.—Council School for 130 places. Mr. J. Rayner, contractor, East Hanningfield.

GLOUCESTERSHIRE.

Bristol.—Y.M.C.A. Central Headquarters, Colston Street. Messrs. Oatley & Lawrence, R.I.B.A., architects, 25 Orchard Street.

Gloucester.—No. 203 Barton Street: additions and alterations. Mr. E. A. Pryer, architect, 18 Clarence Street.

HEREFORDSHIRE.

Hereford.—Eight cottages, Canon Moor Street, for the Town Council; also sixteen cottages, Eign Mill; also four cottages, the Cyozens site.

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Bucknall.—Hospital: extension (£7,000).

Newcastle-under-Lyme.—Free Library. Messrs. Briggs, Wolstenholme & Thornely, FFF.R.I.B.A., architects, Royal Liver Buildings, Pierhead, Liverpool.

Rugeley.—Church Institute.

House, Anson Street, for Mr. W. E. Rogers.

Stafford.—General Infirmary: laundry. Mr. H. T. Sandy, architect, 22 Greengate Street.

Stoke-on-Trent.—Girls' Secondary School.

SURREY.

Carshalton.—No. 109 The Ridgway, for Messrs. P. V. Windebank & Co.

House, corner of Croft and Ringstead Roads, for Mr. T. Peel.

SUSSEX.

Worthing.—Cinema Hall, Union Place, for the Worthing Picturedrome Co., Ltd.

WARWICKSHIRE.

Bedworth.—Proposed Mission Church, Woodlands. Mr. H. Quick, architect, 35 Hertford Street, Coventry.

Hall Green.—Two houses, for Messrs. Roberts & Weatherby.

WILTSHIRE.

Chippenham.—Twelve workmen's dwellings (£2,460).

WORCESTERSHIRE.

Broadway.—Public Elementary Schools. Mr. C. E. Bateman, F.R.I.B.A., architect, 18 Bennett's Hill, Birmingham.

Castlemorton.—Four cottages (£900), for Upton-on-Severn R.D.C.

Dudley.—Proposed Town Hall, &c. (£40,000).

Feckenham.—Ten workmen's dwellings.

King's Heath.—Yeomanry Drill Hall, for the County T.F.A.

Norton.—Eight cottages, for Sir C. Swinfen Eady.

Redditch.—Drill Hall, for the County T.F.A.

YORKSHIRE.

Barlby.—Sixty cottages, for the Selby Transport and Warehousing Company.

Barlow.—Aeroplane Factory, for Messrs. Armstrong, Whitworth & Co.

Bentley.—Miners' Church and Clergy House for the colliery district.

Castleford.—Houses, Glass Houghton. Mr. F. Scatchard, architect, Midland Bank Chambers.

Goathland.—Moorland house. Mr. J. Sanderson, architect, 59 High Street, Stockton-on-Tees.

Leeds.—Tramways Offices, Swinegate and Bridge End (£20,000).

Ossett.—Premises, for the Co-operative Society, Ltd. Messrs. Kirk, Sons & Ridgway, F.R.I.B.A., architects, Market Place, Dewsbury.

Pudsey.—Public Baths and Fire Station (£6,000). Messrs. Jowett, Kendall & Sons, architects.

Selby.—Abbey: institute, Church Lane (£1,000).

Wombwell Junction.—Working Men's Club. Mr. J. Robinson, architect, Park Cottage.

WALES.

Gronant.—Council School (£1,625).

Mold.—Fire Station (£500).

Newtown (Mont.).—Tuberculosis Hospital.

Port Talbot.—Hospital. Mr. F. B. Smith, architect, St. Oswald's Chambers.

Swansea.—Cold Stores, for the Harbour Trustees (£50,000).

SCOTLAND.

Dumbarton.—Twenty double cottages, Overtoun. Mr. J. Campbell, architect. Mr. J. Taylor (of Clydebank), principal contractor.

Dunfermline.—Infants' Board School.

Glasgow.—Dwellings for the very poor, Moncur and Main Streets, Calton.

Tenements of dwelling houses, Trefoil Avenue. Mr. J. Wright, builder, 168 Causewayside.

Buildings, Mavisbank, for Messrs. Smith & McLean, Ltd.

Offices, Parkhead, for Messrs. W. Beardmore & Co., Ltd.

Picture House, Tollcross, for Mr. G. Green.

Keith.—Turner Memorial Hospital. Mr. Kelly, architect, 367 Union Street, Aberdeen.

Lochwinnoch.—Renfrewshire Consumption Sanatorium, Castlesemple. Mr. T. G. Abercrombie, architect, 1 County Place, Paisley.

Motherwell.—Works, Flemington: extension for the British Welding Company.

Musselburgh.—Supplementary Board School for 500 places (£6,500).

Paisley.—Works, Seedhill: addition for Messrs. Clark & Co.

Tenement, Love Street. Mr. R. Brown, builder.

Rothesay.—St. Andrew's R.C. (new) Church and Presbytery, Columshill Place.

Rutherglen.—Cripples' School for 360 places.

Wishaw.—Burgh Hospital: addition (£2,500).

THE GREAT FIRE AT BLYTH

"Poilite" (Asbestos-Cement) Ceilings.

BRITISH MAKE.

REMARKABLE TESTIMONY.

From the "NEWCASTLE DAILY JOURNAL," January 20.

"In the building a considerable amount of damage was done, and, but for the fact that an asbestos ceiling had been put in between the ground floor and the first storey, in all probability it, too, would have shared the fate of the older premises."

From the "NEWCASTLE EVENING MAIL," January 19.

"Fortunately for the safety of this new building, it has been fitted with fireproof ceilings."

From CAPTAIN NAISBITT, Chief of the Urban District Council Fire Brigade.

Messrs. Bell's United Asbestos Co., Ltd.,
Dean Street, Newcastle.

Blyth: January 23, 1914.

GENTLEMEN,—With reference to the fire which occurred at Mr. James Marshall's Northumbria Confectionery Works in this town on Monday last, it is a great pleasure to me to be able to testify to the satisfactory manner in which your Asbestos Cement Sheets behaved under the very severe test to which they were put.

Had the ceiling of the ground floor in the large new building not been lined with these sheets, I am firmly of opinion that, in spite of all our efforts, nothing could have saved the whole of this building from being involved.

The flames from the old premises, which were completely gutted, extended throughout the whole length of the ground floor, which is about fifty feet long, and the heat was so intense that many of the windows were melted, and the door at the extreme end was badly burnt.

On examination after the fire the sheets were found to be intact, and the floor joists to which they were nailed, as also the wood flooring above, appeared to be undamaged.

You may make use of this letter in any way you think fit, as I consider that the above facts cannot be too widely known in the interests of property owners generally.

Yours truly,
(Signed) FRED NAISBITT, Captain U.D.C. Fire Brigade.

From Mr. MARSHALL, Owner of the Buildings.

Northumbria Confectionery Works, Blyth:
January 23, 1914.

Messrs. Bell's United Asbestos Co., Ltd.,
30/32 Dean Street, Newcastle-on-Tyne.

DEAR SIRS,—In reply to your query, I am glad to express my entire approval at the way in which your "Poilite" Sheets acted in connection with the recent fire at my premises.

It is my opinion that the presence of these sheets enabled the firemen to confine the fire to the ground floor of my large new premises, thus saving them from being burnt down, as was the case with the adjoining older premises.

I readily give my permission for you to publish this letter if you desire.

Yours faithfully,
(Signed) JAMES MARSHALL.

It should be noted that the fireproof ceiling to which reference is made in the foregoing consisted of "Poilite" Sheets only 5-32" thick, nailed direct to wood, nothing whatever of a fireproof nature being present between the sheets and the wood flooring above.

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Bray.—Cinema Theatre. Mr. P. H. McCarthy, architect, Westmorland Street, Dublin. Mr. R. Hall, contractor.

Dublin.—The Meath Hospital: dispensary.

240 cottages, Fairbrothers' Fields, &c., for the Corporation (£136,350).

BRITISH PATENT SPECIFICATIONS.

Selected by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

The first date given is the date of application; the second, at the end, the date of the advertisement of the acceptance of the completed specification.

No. 4,827. Feb. 25, 1913.—Expanded Metal Sheets. G. E. Montagnon, 83 Malpas Road, Brockley, and Frederic Atkinson, 49 Queen Victoria Street, E.C. The object of this invention is to strengthen expanded metal sheeting by making some strands deeper than others, thereby giving it increased strength and rigidity in a lateral direction—that is to say, either across or lengthwise of the sheet. These deep sections may alternate with the usual section, or may be every third, fourth, or other number of strands as required. The depth of this section may also bear any ratio to that of the usual section. Fig. 1 is a plan, and fig. 2 a section along the line A, B, of a metal sheet, and fig. 3 a diagrammatic representation of the parallel shearings of the sheet. The strands marked 1, 3, 4, 5, and 7 are strands of the normal section, while strands 2 and 6 are of a deeper section. It will be understood that the deep sections may be placed in any position, and that their depth may bear any ratio to that of the normal section. The depth of section 6 may be twice, three times, or other suitable proportions of that of sections 1, 3, 4, 5, and 7, and is not necessarily the same as that of section 2. Jan. 7, 1914.

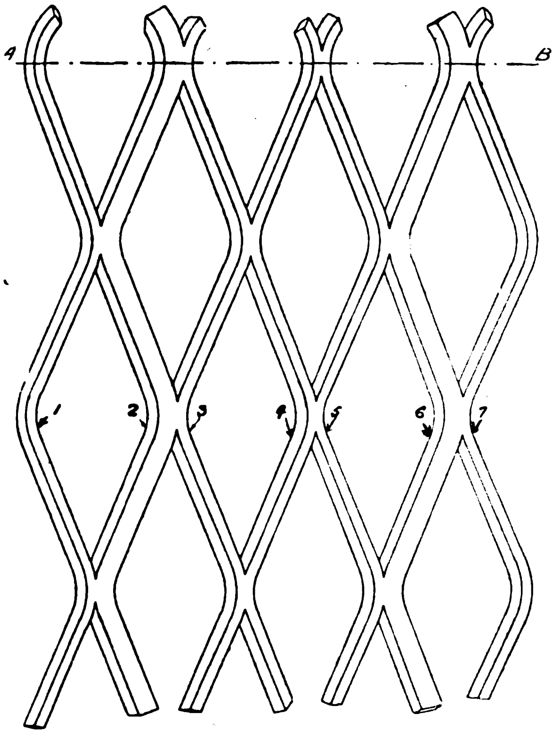

FIG. 1.

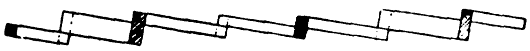

FIG. 2

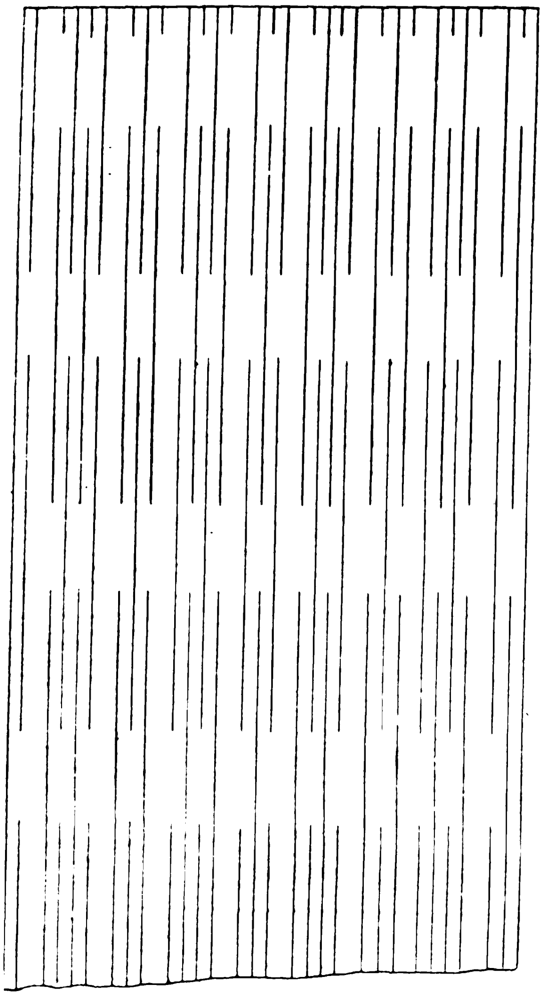

FIG. 3.

PATENT SPECIFICATIONS PUBLISHED FEBRUARY 5, 1914.

Selected and abridged by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

876. Jan. 11, 1913.—Joseph Truman, Carlyle House, Ebury Road, Notts. Brush tools for painting the bars or rods comprising or forming members of metal pallisades and other structures.

No. 22,845. Dec. 14, 1912.—D. W. Allmann, 317 Mutual Street, Toronto. Hot-water heating systems.

1,168. Jan. 15, 1913.—Dated under International Convention Aug. 5, 1912. Rheinische Schweisswerke Sieglar, G.M.B.H., of Sieglar, near Cologne. Method of mounting sheet metal flanges or gills on a core or pipe.

7,025. March 22, 1913.—C. F. Drake, Market Buildings, and Walter Ellis, 10 Lincoln Street, Gainsborough, Lincs. Economising fuel in domestic fire-grates.

8,129. April 7, 1913.—Max Kohn, 7 Altbrunnergasse, Brunn, Austria. Process of separating and purifying slime (more especially the thick mud of the cement industry).

8,592. April 11, 1913.—Paul Frind, 140 Swan Arcade, Market Street, Bradford, Yorks, and Ernest Winsburg, 7 Bridge Street, Otley, Yorks. Means for preventing rattling of windows.

11,063. May 10, 1913.—J. W. Ellis, Oak Lee, Ellesmere Port, Cheshire. Method of and means for intersecting or jointing metal sash bars for windows.

14,261. June 20, 1913.—B. C. Molloy, 5 Paper Buildings, The Temple, E.C. Sash fasteners.

24,526. Oct. 29, 1913.—Dated under International Convention May 20, 1913. August Klumpp, 11 Seidlstr., Munchen, Germany. Supports for scaffolding.

25,463. Nov. 7, 1913.—J. J. James, 11 Whittall Street, Birmingham. Ball and analogous catches for doors, folding windows, and the like.

27,314. Nov. 29, 1912.—M. C. Mottis, The Nook, 24 Minard Road, Catford, S.E. Means for heating hospitals, buildings, and the like.

21,219. Sept. 19, 1913.—A. E. Padwick, "Slackstead," Braishfield, near Romsey, and C. L. de W. Reader, A.M.I.E.E., Hursley. Winches, latches, or fastening devices for gates, doors, and the like.

26,048. Nov. 13, 1913.—Dated under International Convention Nov. 13, 1912. Wilhelm Romermann, Osterfeuerberg, Strasse 4, Bremen, Germany. Shoring and strutting excavations.

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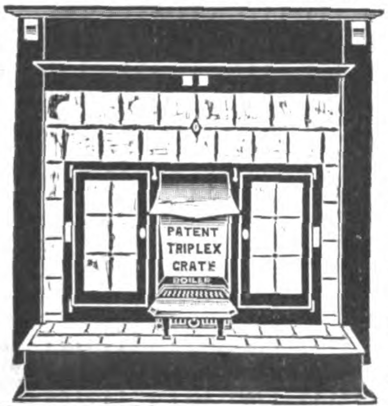

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THE ARCHITECT

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FORTHCOMING EVENTS.

Monday, February 23.

Royal Institute of British Architects: Paper entitled "London Railway Stations," by Mr. Paul Waterhouse, M.A., F.R.I.B.A., at 8 P.M.

Liverpool Architectural Association: Paper entitled "Some Architectural Aspects of Town Planning," by Mr. L. Patrick Abercrombie, at 6 P.M.

Surveyors' Institution: Annual Dinner, at Hôtel Métropole, at 8 P.M.

Wednesday, February 25.

Manchester Society of Architects: Paper by Mr. W. G. Newton, M.A., at 6.30 P.M.

Northern Architectural Association: Students' Meeting, at 7.30 P.M.

Thursday, February 26.

Concrete Institute: Paper entitled "Calculations and Details for Steel-frame Buildings from the Draughtsman's Standpoint," by Mr. C. W. Cocking, at 7.30 P.M.

Architectural Association Camera, Sketch, and Debate Club: Paper entitled "The South Improvement and other Town Planning Schemes in London," by Mr. D. B. Niven, at 8 P.M.

Friday, February 27.

Leicester and Leicestershire Society of Architects: Paper entitled "Hampton Court Palace," by Mr. C. E. Mallows, F.R.I.B.A., at 8 P.M.

IN TERMS OF ARCHITECTURE.

IN his presidential address to students, Mr. Blomfield made the observation that "we have learnt to think in terms of architecture." This observation has formed the text of a leading article in the *Times*, and the writer, after congratulating, as we all do, Mr. Blomfield on his inclusion in the ranks of Royal Academicians, proceeds to explain what he imagines is meant when we talk of thinking "in terms of architecture." The leader-writer's idea is that "to think in terms of architecture is to be aware that architecture is an art of use, and to judge every building in the first place by the manner in which it performs its particular function." This, in our opinion, is but an imperfect conception of the art of architecture. In so far as architecture is an art of use, it is only on the same plane as engineering and building. Certainly the complete fulfilment of its particular function is a necessary condition of any satisfactory work of architecture, but this fulfilment is but one of the terms of architecture.

That the leader-writer is off the line in his estimation of what is meant by terms of architecture is further shown by his dictum that "Gothic means pinnacles and crockets and traceried windows, and Renaissance means pilasters, and Corinthian or Ionic, at the present moment especially Ionic, capitals." These things are precisely what, now that we have learnt to think in terms of architecture, Gothic and Renaissance do not mean. We have passed the phase of thought when certain forms of detail were considered to sufficiently stamp one building as Gothic and certain other forms to characterise another as Renaissance. It is only the ladies who attend University Extension lectures who still imagine that they may regard as an infallible touchstone the axiom that a round arch is Norman and a pointed arch is Gothic.

We would not presume to attempt to define what Mr. Blomfield means when he says that we have learnt to think in terms of architecture, but we may be permitted to explain what we understand by such thought. Gothic, Renaissance, Romanesque, and Classic are but dialects—we would not say even distinct languages—in which architectural thought may be expressed. As in literature the same thought may be couched in the dialect of Devon or of Yorkshire, of Leicestershire or of Cockaine, so is it in architecture. At this last we have come to regard as of paramount importance the thought expressed rather than the dialect in which it is uttered.

Further, we recognise that the thoughts expressed in the Middle Ages were in their essence distinctly different from those predominant during the period of the Renaissance. So to-day the thought expressed is in its essence vitally and distinctly different from that of any preceding age, at least in the work of those amongst us who are producing modern architecture. Take, for example, Mr. Blomfield's United Universities Club in Pall Mall. There is not a word in the language used which is not to be found in the architectural vocabulary of the Renaissance prior to the nineteenth century. But no eighteenth-century artist would have—we might almost say could have—so expressed his thought, for such thought would not have been in his mind.

Again, for another example, take the Church of the Holy Spirit, Clapham Common, whose interior we illustrate this week. There is not a moulding or a feature which might not have been used in the Middle Ages, but the thought expressed by Mr. Burke Downing is such as was never expressed by any mediæval artist.

The real architecture of to-day is essentially twentieth-century architecture, and could never have been produced at any previous period. Nay, more, not only is it essentially modern but it is essentially personal. Mr. Blomfield could not possibly have designed the Church of the Holy Spirit, Mr. Burke Downing could not possibly have produced the United Universities Club. There are amongst us, it is true, men who, having nothing of their own to say, attempt to imitate the sayings of others, but, though they may copy the language, they cannot copy the thought.

First of all, then, we understand that terms of architecture mean not the dialect but the thought that is expressed in whatever dialect it may be clothed. Naturally there are some who can best express their individual thought in the dialect of Devon, others in the purer English of Leicestershire. And this, it seems to us, will ever prevent modern architecture from adopting any universal dialect or so-called style. The student at Liverpool University is taught to speak in a dialect of Franco-American-Neo-Greek, but the universal adoption of that dialect is, we think, and we may say we hope, improbable in the exteme.

The expression of a distinct architectural idea inevitably connotes the conception of a building as a complete and harmonious entity. In terms of architecture we think in three dimensions; we no longer accept the axiom that the elevation should grow out of the plan, still less that the façade should dictate the plan. The performance of "its particular function" is an element of the conception of a building as a complete and harmonious entity, and not only the performance but the expression of that particular function must be regarded as an essential of the conception. When a modern artist is called upon to design a club, he thinks of his building, before ever he puts pencil to paper, as a club and a modern club. When he starts to design a church he thinks of a church and a modern church.

In the nineteenth century it was rather the practice to think of a church as something like what someone else did in mediæval times, and especially including the "pinnacles and crockets and traceried windows" of the Middle Ages. This was thinking in terms of archæology, not in terms of architecture. So in the days of the Greek revival, thinking in terms of dilettanti archæology, Inwood conceived a church of St. Pancras that should accurately reproduce the details of the Erechtheion. The main endeavour in the days when architects thought in terms of archæology was the correct reproduction of the details of the past. But even in the height of the Gothic revival there were some who, like William Burges, thought in terms of architecture, and regarded the details of the past as no more than a vocabulary by which they might express their own individual thought.

In terms of architecture, a club must be a beautiful building which performs the function of a club, a church that of a church, and expresses that function, possesses excellence of composition, of mass as well as detail, of proportion, of rhythm, and of the expression of other qualities that are dependent upon the individuality of the artist. In terms of architecture no man can copy another man's work any more than he can assume the lineaments of another man's countenance. He must express himself or nothing.

"THE ARCHITECT" STUDENTS' SKETCHING AND MEASURING CLUB.

The subject of an eighteenth-century doorway in stone has proved more attractive than the pulpit.

"Plato" has selected an excellent example from the Old Ashmolean Museum, Broad Street, Oxford; and, as usual, has drawn his subject excellently well.

"Toga," in choosing a doorway from No. 55 Westgate Road, Newcastle-upon-Tyne, has either found a subject which contains lamentable faults in design or has given a false character to the original. As drawn by "Toga," this doorway looks like the work of an imperfectly educated craftsman who attempted to follow the work of his superiors. The drawing of the general elevation is unfortunate in its absolute detachment from its environment and in its absence of any indication of material. It is impossible to say if the original is wood, stone, brick, or plaster.

"Ebor" has found at No. 40 Lower Domenick Street, Dublin, a characteristic piece of Georgian Irish work, in which there is a certain amount of originality and a pleasing composition. It is a pity that "Ebor" is somewhat careless in his freehand drawing of ornament, as this mars what might otherwise have been a quite worthy drawing.

Mr. R. G. Clarke has apparently made a mistake of a few centuries in assuming that the tower door of Kirkburton Church is eighteenth-century work, although the detail is bad enough in quality to be a travesty, produced at that period, of Early English design. Anyway, the example is not worth serious study.

"Improver" has measured a doorway which has been removed from its original position to the Almshouses, Hexham. Though well-proportioned as a composition, the details of the mouldings overstep the limit of boldness and become coarse. Still there is individuality in the handling.

"Shinio" has found a good example at No. 2 York Street, Liverpool, which in its combination of door and side windows somewhat resembles "Ebor's" Irish selection. We should like to have seen a few more details, as those to which we are treated show refinement.

We award a prize of one guinea to "Plato," and half a guinea each to "Ebor" and "Shinio."

JESUS COLLEGE, OXFORD.

(*See Illustration.*)

The foundation of Jesus College dates from the year 1571, when Queen Elizabeth granted a Charter to Hugh Price, treasurer of St. Davids, Pembrokeshire, to found a college which was intended from the first to be particularly the home of Welsh students at the University. There had been upon the site of the College an older hall, known as Whitehall, and during the earlier stages of the building operations, students were housed in the old portion of that Hall. The College was only partly built when Hugh Price died, in 1574, and for some time after that date it appears that the progress of completion was slow.

About the year 1607 the Hall was commenced with funds obtained from the bequest of the original founder, Hugh Price. The buttery and kitchen date from about 1618 to 1620, and the chapel was finished and dedicated in 1621, its erection having been commenced in 1613. As in many of the Oxford colleges, there is an ante-chapel at the west end formed by a screen. It was not long before the chapel, as originally built, was found to be too small, and in 1636 it was lengthened eastwards.

The Principal's lodging was built between 1621 and 1630, and joins the daïs end of the hall at the north-west part of the quadrangle. The front quadrangle was completed about 1625, and, as originally built, comprised two floors with attics in the roof, but this arrangement was afterwards changed into a quasi three storey building in the eighteenth century.

The original Library was begun in 1626, but when it was decided to erect an additional quadrangle this was pulled down in 1639, and two wings stretching westward were built in 1640, forming the north and south sides of the inner quadrangle. The Common Room and Bursary occupied part of the west side of this quadrangle and were finished about 1679, beyond them being the Library, which was finished at the same time.

NOTES AND COMMENTS.

The scheme suggested in the Journal of the London Society for the treatment of the south side of the Thames is not in principle entirely novel, that principle being the combination of a sightly embankment to the river, with a backwater for wharfage business. The Committee of the London Society suggest that from a point adjoining the new County Hall at Westminster Bridge to Southwark Bridge (a distance of about two miles and a half), there should be a continuous embankment 100 feet wide, so placed that on its river side it would coincide, more or less, with the present low-water mark of the foreshore. At points where the new embankment would be most remote from the existing wharf frontages it is suggested that backwater streams in lagoon docks should be made, to which barges and lighters could have access for loading or unloading by channels passing underneath the embankment. The advantages of this plan are obvious. The factories and warehouses would have their river frontages unimpaired, the only difference being the substitution of a lagoon dock for an open mud bank, while the riverside embankment could be leased as a roadway just as well as though the whole of the foreshore were reclaimed, as in the case of the north bank.

The Committee consider it certain that the ascertained cost of the proposed embankment (£80 to £100 per foot run) would be far more than covered by the value of the reclaimed land.

A correspondent in the *Yorkshire Post* attributes the absence of good architecture in the public buildings of the prosperous smaller towns in the West Riding with some degree of reason to the tactics of the local authorities in their conduct of architectural competitions, and instances the case of Barnsley Town Hall as an illustration of his allegation that the authorities of these West Riding towns evidently scent a means of getting brains on the cheap by way of competition, but defeat the object of getting the best brains because they invariably dodge or manipulate the clause relating to an assessor and adjudication so as to leave it open for inference that it is not their reasonable intention to adopt the best design. The result is that the competition is tackled by a certain number of third-rate men, but studiously avoided by the best.

The Local Government Board have had under consideration the Town Planning Procedure Regulations (England and Wales), 1910, prescribed by the Board under Section 56 of the Housing, Town Planning, &c. Act, 1909, and have come to the conclusion that the Regulations may properly be modified in certain respects so as to simplify to some extent the procedure required to be followed, especially in regard to the steps prior to an application to the Board for authority to prepare a town-planning scheme. In connection with the matter, the Board have given careful consideration to the representations which have been made to them on the subject by local authorities and other bodies. In consequence, amended Regulations have been prepared, in which the principal alterations that have been made are as follows: 1. The reduction from two months to four weeks of the period required to elapse between the service of notices of intention to prepare a scheme and the making of an application to the Board for authority to prepare the scheme. 2. The omission of all requirements as to service of notices on occupiers of lands. 3. A variation of the requirement that, where land outside the district of the promoting local authority is proposed to be included in a scheme, a complete copy of Map No. 1, on the scale of 25.344 inches to the mile, shall be supplied to the outside local authority. A map of the 6-inch scale is substituted, coupled with a right of the outside local authority to ask also for a map on the larger scale confined to the land in their district. 4. An alternative to the meeting of owners and other persons interested at the first stage of the procedure is provided for by allowing the local authority to make a formal offer to confer with such persons if they so desire. 5. It is made clear that Map No. 1 may be utilised for the purposes of Map No. 2, without the dispensation of the Board which is at present required. Thus Map No. 1 can be converted into Map No. 2 by the addition of certain further particulars indicated in the Regulations. 6. The requirement that Map No. 2 shall show the lines and widths of principal roads that may be contemplated, the proposed open spaces and certain other particulars, is omitted. 7. Maps Nos. 3 and 6 required by the present Regulations will no longer be required to be supplied by the local authority. 8. Notice of authority having been given to prepare a scheme may be given by advertisement only. 9. An option is given in regard to the form in which Maps Nos. 1 and 2 are to be submitted to the Board.

In an interesting lecture on "Microphotography and Its Application to Brushwork," delivered before the Royal Scottish Society of Arts by Principal Laurie, M.A., D.Sc., the lecturer pointed out that the methods already employed for the investigation of pigments and mediums enabled in a large number of cases an approximate date to be given to a picture, and therefore made the detection of more recent forgeries an absolute certainty if certain pigments are present, but that something more was needed in order to establish definitely whether a picture is by the hand of the master or belongs to his school. With a view to getting further light upon this matter, he had made a special study of the application of photography to pictures in order to study the actual brushwork of the artist. To do this successfully it was necessary to take magnified photographs, the enlargement being, of course, adjusted to the style of the painter. The experiments made by the lecturer very soon showed that in order to get reliable results the magnification should be done directly on to the negative, and that enlargement should not be resorted to. There were also other points requiring attention in order to get a successful result, but when all these conditions had been carefully carried out, very striking photographs were obtained which in many cases were quite definite and conclusive as to the authorship of the picture.

The right position of "symmetry" in architectural design has perhaps never been more truthfully stated than in a lecture on the subject delivered by Sir John Stirling-Maxwell, Bart., to the Glasgow Institute of Architects. Nowadays we seem to be tending to fall into the error of the eighteenth century and setting up the fetish of symmetry to the extent of suppressing all truth of expression of the structural composition and plan of our buildings.

Sir John Stirling-Maxwell said that in English the word symmetry denotes the correspondence of parts in designs in which each half is the counterpart of the other. In Greek the word had a wider meaning, answering more closely to what we call proportion. The pleasure derived by the eye from symmetry is analogous to that derived by the ear from rhyme. It is a charm which can heighten beauty, though it is not essential to it. But it can no more redeem a poor design from failure than rhymes can redeem a worthless poem. It is a charm which seems to belong rather to the eye than to the mind. The repetition of architectural details or simple ornament is pleasing, but in proportion as the feature to be repeated demands thought, and assumes a personal character, its repetition becomes less and less agreeable. Nobody desires to secure symmetry by the repetition in counterpart of a statue or a picture. In Nature many things are symmetrical, but they are as a rule small things. Snowflakes and other crystals, and even the diatoms discovered by the microscope in water, exhibit a rigid symmetry which is seldom, if ever, found in Nature on a large scale. Flowers, fruits, and leaves are frequently symmetrical, but seldom the plants on which they grow. The forms of most of the higher animals are symmetrical, but their symmetry appears to be strictly based on convenience. The parts which are repeated are required in duplicate. Their symmetry is limited to one dimension, like that of a ship or a church. Symmetry in architecture appears to be governed by the same rules as symmetry in animals. The component parts of a building are almost invariably in themselves symmetrical. Doors, windows, chimneys, and gables can scarcely be otherwise. But while symmetry at one end of the architectural scale seems almost inevitable, at the other, as in Nature, it seems to be intolerable. A big city in which every feature was repeated in counterpart would be unbearable. Symmetry begins by being stately and ends by being tiresome. Contrary to popular belief it is really most telling on a small scale where the eye readily grasps the whole design. Glasgow possesses in the purlieus of the Trades' House a beautiful eighteenth-century example of street symmetry on a reasonable scale which the city ought to preserve and restore. Three kinds of departure from the rules of symmetry appear to be possible without detracting from its effect. First, departures which escape detection. Secondly, frank departures which convenience demands which are never distressing if they are frankly and quietly treated. Thirdly, there are departures from symmetry which pervade a whole building, but which the eye accepts and enjoys, as when a formal design conforms to a curved or irregular street line, or the nave of a church is built on a slight curve. In Nature similar deviations from true symmetry are found at every turn, and some, too, deserve more attention than they have yet received from the architect. There are proportions or symmetries in the Greek sense on which the merits of every building must depend—the symmetry of a building with its purpose, with its materials, with its site, and with tradition, and there is also a symmetry of part with part which is only found where the design gives coherent expression to one sustained idea. Where that kind of symmetry is present mere correspondence of parts is no more missed than rhyme is missed in Tennyson's song, "Tears, idle Tears." This kind of symmetry demands a unity and completeness which are difficult to attain in these days of restless imitation and bewildering and ill-digested knowledge. But it is and always will be the hall-mark of a really good building.

LONDON COUNTY COUNCIL.

Competition in School Design.

The sanction of the full Council was this week accorded to the scheme of the Education Committee for obtaining designs for the erection of two elementary schools. An explanation of the origin and details of the scheme appeared in our last issue.

Having regard to the far-reaching possibilities of the proposal, the debate on the committee's recommendations was unexpectedly short, and only resulted in the modification of one of the conditions governing the competition.

Mr. R. I. Tasker, speaking on the reception of the report, suggested that in addition to the successful architects having an opportunity of appointing their own clerks of works, a clause should be embodied in the scheme enabling them to select their own quantity surveyors. It would be a material advantage to a successful competitor if he could hand his drawings over to a man with whom he was accustomed to work. He was sorry the competition was being confined to two schools, which did not appear comparable with the majority of the schools which the Council had built, and in his opinion it would have been better if two schools had been selected, one accommodating 1,000 children and the other perhaps 500 or 800. He hoped the conditions of the London Building Act would be observed.

Mr. John Gilbert, Chairman of the Committee, said he would allow the successful architects to appoint their own quantity surveyor, subject to the approval of the committee. As far as was possible the committee had endeavoured to arrange the competition so that there would be reasonable comparison between the work of the successful competitor and that of their own architect.

Mr. George Dew expressed the hope that Mr. Gilbert would consult the committee responsible for such work before he accepted the suggestion that the architect should appoint his own quantity surveyor. He had no objection to the architect having "some say" in the appointment, but in his experience the appointment of surveyors by architects was not infrequently a means of "making both ends meet."

The report of the committee was finally agreed to, with no further alteration than that comprised in Mr. Gilbert's acceptance of the suggestion with regard to the quantity surveyors.

Painters' Wages.

On the consideration of a report by the Education Committee dealing with tenders accepted during the Christmas recess for various school-building works, a long and spirited discussion arose on the subject of painters' wages. An amendment was moved instructing the committee to bring up estimates for the painting work in each contract by direct employment of labour at the rates of pay settled in November last. The amendment, however, was defeated, as was also a further amendment seeking to expunge the painting work from the contracts under consideration, and invite separate tenders for its execution. The committee's report was adopted.

COMPETITION NEWS.

Barnsley.—Members of the Society of Architects are further notified that the amendments of the conditions proposed by the promoters of the Town Hall competition are not sufficient to justify the Society withdrawing its disapproval. Members are referred to Clause 4 of the Society's Code of Ethics, and are requested not to take part in this competition.

Canada.—The Champlain Tercentenary Committee invite competitive designs for a monument to Samuel de Champlain, to be erected at Orillia, Ontario, and to cost not more than 20,000 dollars (£4,100). The competition is open to all British subjects and to citizens of France. Designs must be in the hands of the Committee by June 20, 1914. The conditions can be procured on application to the Canadian High Commissioner, Victoria Street, London, S.W.

Newcastle-on-Tyne.—The Trustees of the Virgin Mary Hospital invite architects practising in Newcastle to submit plans and schemes for dealing with tenemented property in Forth Banks and Hanover Street. For further particulars apply not later than the 28th inst. to the Clerk to the Trustees, William Sutton, 12 Mosley Street, Newcastle-on-Tyne.

Watford.—The local Guardians invite architects practising within the area of the Watford Union, who wish to obtain the appointment of architect for the proposed infirmary and nursery at the workhouse, to make written application to the Clerk by the 24th inst.

ILLUSTRATIONS.

OXFORD COLLEGE SERIES, NO. 129.—JESUS.

We this week resume the publication of our series of views of the Colleges of Oxford with the front quad and entrance of Jesus College.

THE CHURCH OF THE HOLY SPIRIT, CLAPHAM COMMON, S.W.

This church, of which we publish an interior view, has been erected from the designs and under the superintendence of Mr. H. P. Burke Downing, F.R.I.B.A. It consists of a nave and broad north aisle. Both nave and aisle are of the same height, which is also carried through choir and sanctuary, which are of the same width as the nave. An effect of spaciousness and dignity is thus obtained, and the cramping conditions of the site, which is long and narrow, are overcome. Within the internal buttressing of the eastern wall there is a passage behind the altar at the floor level, and also at a height of about 20 feet below the triple lancet window.

The church is built of Crowborough purple-brown bricks with stone dressings and little ornament, and the internal length is 110 ft., width of nave 25 ft. 6 in., and of aisle 20 ft.

Internally the walls are plastered. Except for fittings—as organ, pulpit, choir stalls, screens, and oak wall-panelling—the church is complete. The oak rood-beam with figures (a special gift), which appears in our illustration of the interior looking east, has been placed over the entrance to the choir. This was executed by Mr. N. Hitch, of Vauxhall.

The builders, who carried out their contract in an excellent manner, were Messrs. Allen Fairhead & Son, of Enfield. For the heating and electric lighting the contractors were Messrs. Strode & Co., and the wrought iron work was executed by Mr. E. Norkett, of Maidenhead.

THE TITE PRIZE: WINNING DESIGN.

Subject:—"Design for the best imaginative composition in perspective for an important fountain, with which is to be associated large scale sculpture."

No particular site was given, but the author of the winning design, Mr. Trenwith Wills, chose to imagine his monumental fountain to be at the foot of a steep rocky incline acting as the terminus of a great axial road leading out from a city to the hills behind.

The main theme being the interception of a mountain stream and the direction of the flow of water over a series of steps, flanked by two powerful terrace walls, into three cascades, which precipitate into a large basin. A colonnaded loggia approached by flights of steps forms the architectural background to the composition. The sculpture employed is indicative of the freedom of water.

Mr. Wills, who is a student at the Royal Academy schools, previously took his certificate in architecture at the Schools of Architecture, University of Liverpool.

DESIGN FOR SOANE MEDALLION.

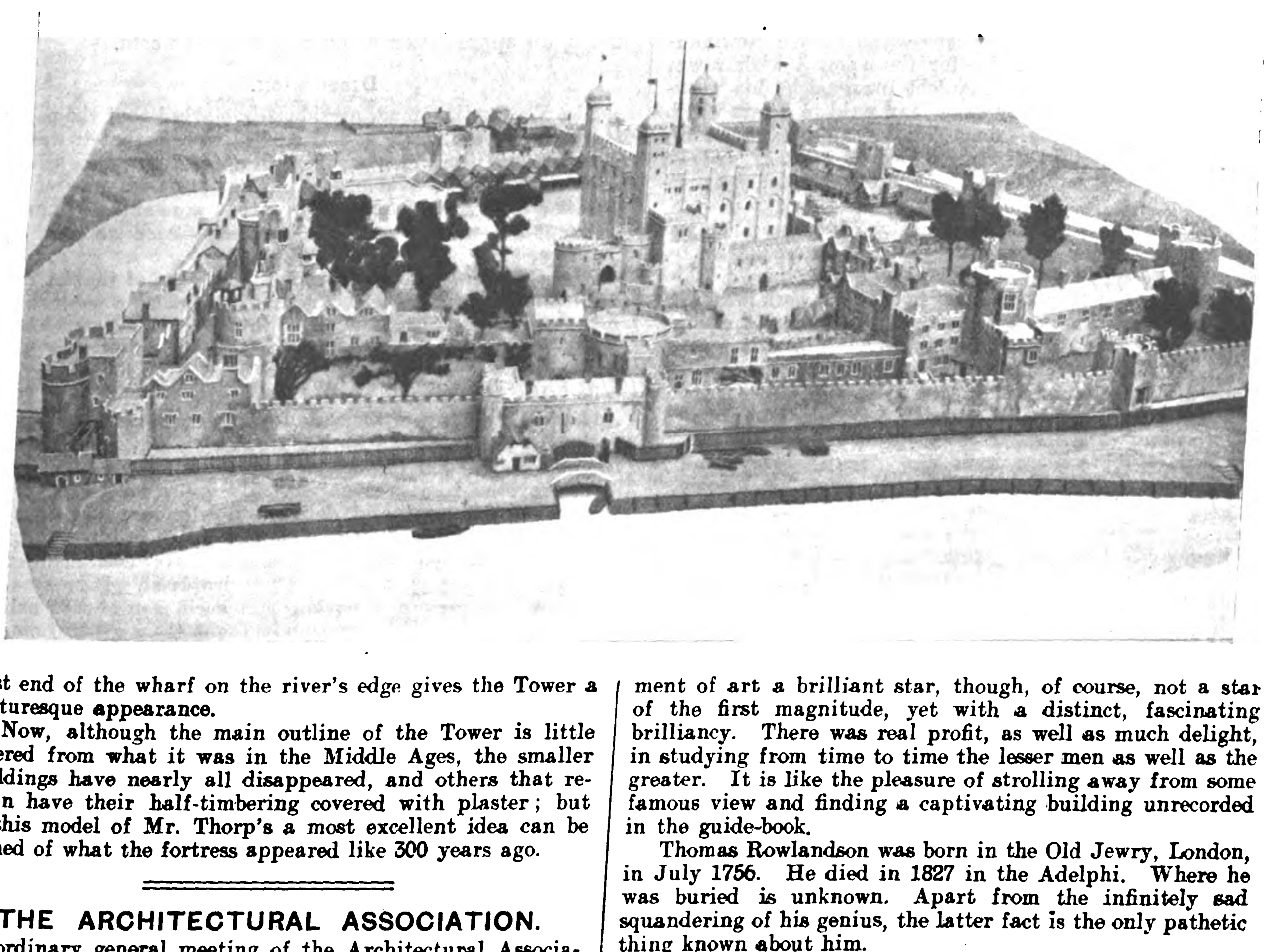
Mr. H. Chalton Bradshaw's design submitted in the competition for the Soane Medallion this year was placed second and rewarded with a certificate and £10 10s. Further description is unnecessary in view of the criticisms that have already appeared in our pages.

THE TOWER OF LONDON, A.D. 1600.

MR. JOHN B. THORP's model of the Tower of London, which is being presented to the London Museum by Mr. J. G. Joicey, has been built to a scale of one hundredth full size, and covers an area of nearly 150 square feet. It will be first seen by the public when the museum is opened in the early spring at its new quarters at Stafford House.

The Tower, in the days of the early part of the seventeenth century, was still used as a Royal residence, and in the model the various buildings which occupied most of the space between the White Tower and the wall facing the river, and were known as the Queen's Gallery, the Queen's lodgings, the Jewel House, and the remains of the Great Hall are all shown; also, of course, the moat with its stagnant water is surrounding the outer walls. On the north bank of the moat there still remained a portion of the City Wall, with a postern gate, showing how William the Conqueror, by removing a portion of the wall, was able to make his fortress partly within and partly without the City.

There is also shown the circular menagerie, which stood just outside the Middle Tower, and was built to cage wild beasts that at various times were presented to Royalty, and a cluster of warehouses and Tudor houses standing at the east end of the wharf on the river's edge gives the Tower a picturesque appearance.



Now, although the main outline of the Tower is little altered from what it was in the Middle Ages, the smaller buildings have nearly all disappeared, and others that remain have their half-timbering covered with plaster; but in this model of Mr. Thorp's a most excellent idea can be gained of what the fortress appeared like 300 years ago.

THE ARCHITECTURAL ASSOCIATION.

AN ordinary general meeting of the Architectural Association was held at Tufton Street, Westminster, on Monday last, the 16th inst., Mr. W. Curtis Green, F.R.I.B.A., president, in the chair.

It was announced that the Fourth Spring Visit will take place on February 28 to the Mappin Galleries, Zoological Gardens; architects, Messrs. Belcher & Joass. Members to meet at the entrance of the new offices, Zoological Gardens, at 2.30 P.M.

An exhibition of educational cinematograph films will be given on Friday, March 6, at 8 P.M., at 18 Tufton Street. The films are specially prepared by Messrs. Ruffell's Exclusives, Ltd., under the direction of the Architectural Association, for use in architectural and technical schools.

The next meeting of the Camera, Sketch, and Debate Club will be held on Thursday, February 26, at 8 P.M., when a paper will be read by Mr. D. B. Niven, entitled "The South Improvement and other Town Planning Schemes in London."

Eleven new members were elected.

Mr. G. Leonard Elkington, hon. secretary, announced that in accordance with powers under the by-laws the dates as printed in the syllabus will be postponed for a fortnight in connection with the election of officers. The elections will take place on March 30 instead of March 16; the nominations will be on March 16 instead of March 2.

Professor Selwyn Image then read a paper, which was illustrated by lantern slides and original drawings, on

THE SERIOUS ART OF THOMAS ROWLANDSON.

In his preliminary remarks Professor Image said he must apologise for the fact that a paper on Rowlandson could not by any stretch of ingenuity be made into having anything to do with architecture. It could only interest his audience, therefore, in the sense that being artists, they were interested in art of all kinds. There came in the doctrine of the unity of art.

To have to confess to knowing little or nothing about Rowlandson need bring but the faintest blush on the cheek of any student. Yet to some people he was in the firmament of art a brilliant star, though, of course, not a star of the first magnitude, yet with a distinct, fascinating brilliancy. There was real profit, as well as much delight, in studying from time to time the lesser men as well as the greater. It is like the pleasure of strolling away from some famous view and finding a captivating building unrecorded in the guide-book.

Thomas Rowlandson was born in the Old Jewry, London, in July 1756. He died in 1827 in the Adelphi. Where he was buried is unknown. Apart from the infinitely sad squandering of his genius, the latter fact is the only pathetic thing known about him.

The boy soon showed signs of an artistic bent, and in due course entered as a student at the Royal Academy. In spite of his inveterate frolicksomeness—we read, for instance, that one of his games was surreptitiously to play on the unlucky model with a pea-shooter—he worked hard, advanced rapidly, and was popular alike with his fellow-students and the Academicians. The great Sir Joshua himself commended highly his skill in draughtsmanship. But, while still in his teens, he was invited by a rich uncle to Paris. There he remained for some two years, studying hard in the French schools, making quick progress, and gaining much favour by his lively companionableness and his artistic ability. He returned again to the Academy, and then once more to France.

Whether we like Rowlandson's work or not, there is no doubt whatever he was a thoroughly trained artist. Within the limits that he set himself he was an accredited master. That he was often frivolous, and something much worse than frivolous, it would be monstrous to deny. The pity of it! But in his art there was a great deal else besides frivolity and exaggerated caricature. The world would have been much the gainer if, instead of squandering so much delicate sympathetic genius on current popular caricatures, he had been more persistently faithful to its finer promptings. But essentially and by predestination a genius, he was for what in life is vivacious and charming. If France put into his hand not the canvas and brush, but the sheet of paper and the pen with the little saucers of water-colour wherewith to tint in his outlines, we have no great cause for complaint against her.

In 1775, being nineteen, he exhibited his first picture at the Academy—"Delilah visits Samson in Prison." Two years later he set up as a portrait painter at a studio in Wardour Street. Sitters, however, did not flock. And so choosing, as ever, the line of least resistance, he deserted the higher flights of art within a year or two.

With his sheet of paper and his pen, his fatally facile hand and imagination answered readily enough to the innumerable calls made upon him for sketches of a country tour, the reminiscence of some seaside or tavern episode, some burlesque political caricature. Easily almost as one writes a letter—nay a postcard—he reeled these things off, and they filled his pockets with the cash he so utterly could not do without. Only in all these things the genius, though so often prostituted, is never quite ruined. The seeing eye is caught by some dainty touch, some hint of charm, that, apart from any mere skill of design or draughtsmanship, go near to redeeming the coarsest caricature. Often Rowlandson, the call of impecuniosity for the moment withdrawn, gave his genius free play. The debt incurred by his weakness and sins has been surely more than paid in a fate which has ordained that, the gracious delicacy and beauty of his art forgotten, he should be remembered by most, if, indeed, remembered at all, but as a comic and exaggeratedly scurrilous buffoon.

Rowlandson was an amazing master of design; nor was he ever neglectful of it, even in the most careless, the most blatantly comic and coarse of his drawings. It fails him never, and by its presence alone makes his work works of art. Rowlandson, when he chose, could be correct enough. But whether correct or careless, his drawing is always alive. Vitality of draughtsmanship, that essential of greatness, is indeed one of his main characteristics. Whether a single figure, or a little group, or a bustling crowd, the animation of these never fails—whatever else they may be, or not be, they certainly are alert with life. He was very fond of representing large groups and crowds. These are amazingly hard things if the artist, instead of being content with merely a suggestion, an impressionist smudge, gives the sense of jostling and confusion, while at the same time keeping individual figures well delineated and expressive, and the whole mass in the true balance of the design. To accomplish this requires a great and a rare mastery, which no artist has ever shown more completely than Rowlandson.

There are innumerable drawings by Rowlandson into which the element of humour does not enter. Of his many and long excursions up and down England and abroad, he left vivid and delightful records. The precision of these is not to be surpassed, even by, say, Canaletto. But they are something much more than merely topographical views, just as the Canalettos are. The unmistakable artistic qualities of design, of movement, of chiaroscuro, they are steeped in, and for these and the like qualities they are invaluable artistic possessions. This exquisite artist is no dull delineator of mere topographical details. These he gives indeed with accuracy; but he gets also at the heart or spirit of the scene he is intent on, and renders this, too, with a significance unmistakable.

What ordinarily are called *important* Rowlandsons are often artistically amongst the least interesting of his productions. They look not seldom rather made to order and so of an impressive size, and for him highly executed and finished, so as to be worth their money. But alas! again and again the fresh spirit, the sensitive touch, has gone out of them They grow mechanical, and artistically are not a patch on his slighter, smaller, more spontaneous, and clearly better relished designs.

This was Rowlandson's method. First, faintly to sketch in the outlines with a reed or quill pen charged with a mixture of Indian ink and vermilion. Next, to wash in the shaded parts with a similar mixture. Finally, over this to carry the local tints. In his best drawings the colour is entirely on the side of delicacy, transparency, pearliness, opalescence. They show an amazing truthfulness in suggestion of atmosphere, of large spaces and distances. Set amongst other drawings, however strong, they tell with brilliancy. If faint in actual pigment and tone, they are potent in their general effect. Not that he is afraid of a bit of positive colour when so minded. He will paint a red or blue coat at its brightest, and the miracle is that the red or the blue is altogether in harmony with its quiet surroundings. A general pearly greyness—yes. But it is not disturbed, rather is it emphasised to admiration by this positive note.

To note Rowlandson's most dainty sense of youthful grace and beauty, especially of female beauty at its first ripeness, as one of his marked characteristics, may seem preposterous. Yet one might even say that he could not draw a young woman without showing, as clear as the strokes of his pen can show it, that he feels the spell of girlhood, of young motherhood, and does reverence to something in them beyond their mere physical allurement. Even in the most frivolous, his grossest drawings, he confesses the spell; in his graver drawings of character or of country life he is wholly under it. Others have felt the grace, the mystery of young motherhood more profoundly than he did. But who has felt and recorded its dainty charm more delightfully, more unaffectedly?

Within quite the few last years there has sprung up a revived interest in Rowlandson. To-day, judging from catalogues, from exhibitions, sale-rooms, and the prices realised in them, there appears to be flourishing for the moment a sort of Rowlandson cult. One can only live in hopes this means a discriminating appreciation of his genius, an appreciation of his real artistic worth.

Discussion.

Mr. W. Curtis Green, president, remarked that the paper had been a great treat, and it seemed to him that it was of a very useful kind, inasmuch as it showed them the extraordinary power of analysis which Professor Image brought to bear on his work. As architects they were extraordinarily ignorant of some of the allied subjects—such as that, for instance, they heard of that night.

Sir Charles Holroyd, in proposing a vote of thanks, said he thought it was a great foolishness, but also a great kindness, when collectors of beautiful things told audiences about them. It was most kind, because by so doing they were allowed to share in the beauty held up for admiration. It was foolish, because it spoiled the market. Thanks to Professor Selwyn Image there had been the present revival in price for Rowlandson's work. Now it was almost impossible to buy them, even for the Nation—that is for the Print Room of the British Museum. He expected that some of the most beautiful and delicate Rowlandson drawings to be found in the Print Room had been purchased by Professor Image. Perhaps something might have been mentioned about the artist as a rollicking caricaturist. It was necessary for the art of a nation that such men should exist; they were most wholesome, and taught their generation not to hang on to the skirts of the beautiful more than was necessary. They also taught how to have bold and great design, though not necessarily refined design. For instance, it would be possible to make a splendid bold design of a football match, but without refinement. Rowlandson did both. To this he added a power of drawing—a lesser art. As a master of design he was equal to any of the French heroes, such as Govani and Daumet. Lesser artists were sometimes a splendid study. The great ones often only speak of their own times, but the others may have something to say more akin to ourselves, being perhaps before their time. By a stretch of the imagination Rowlandson could be considered of use to architects in respect of the introduction in their drawings of figures around buildings. Also, how well his work would look if suitably framed as decoration for a lady's boudoir or a smoke-room.

Mr. Arthur Keen said the Slade Professorship at Oxford, held by the lecturer, was one of the greatest honours in the world of art. Personally he would always remember the occasion when Professor Image read to them a paper on "Architecture in Painting"; it had struck him as being one of the most perfect addresses he had ever heard. The present lecture was valuable as taking them out of the beaten track. The world of architecture was too much with them. With architects the talking of "shop" became a perfect obsession—he did not know if other professions suffered the same. It was, therefore, a great advantage for an architect to get away from his subject for a while. The portrait of George Morland, thrown on the screen, showed such an enormous capacity for serious work one regretted Rowlandson did not carry it further.

Mr. Slater and Mr. Horsnell having also spoken,

The vote of thanks was passed with acclamation.

Professor Image, in briefly replying, said he would like to emphasise his love for Rowlandson's rollicking drawings. But there were some which rather passed the line. Nevertheless, even in the grossly indecent ones it was quite noticeable that young female figures were most beautiful. Youth had a fascination for the artist. It was to be wished someone would discover where Rowlandson was buried.

FORDWICH, KENT.

By J. HARRIS STONE, M.A., F.L.S., F.C.S.

(Continued from page 147.)

THE regulations for the government of Fordwich, and some of the punishments provided for evil doers, are in many instances most peculiar, even startling. In the fourteenth century the duel was resorted to for determining suits of law. If a stranger should appear as a prosecutor and accuse an inhabitant of Fordwich of felony he had to come to the boundary fully equipped (whatever that might mean), and there he was led to the river Stour and had to stand up to his navel "with all his equipment prepared to prove his appeal. Then the accused shall come in a boat with three poles to oppose the prosecutor clothed in a garment called a 'storrie,' with an instrument called an 'ore' three yards long, and the boat shall be made fast to the quay by a cord, and he shall fight with the said prosecutor until the duel between them is decided." We can imagine the whole population turning out to witness this curious method of settling a legal case, and if the accused were a younger and more vigorous man than the prosecutor the result might not be justice as we know it nowadays.

But more remarkable even than this was the method of carrying out the capital sentence. The actual execution of the criminal had to be done by the person who prosecuted him. The condemned person was taken from the court-house where sentence had been pronounced to the river at hand "unto a certain place called 'Thief's well,' and there their hands ought to be tied under their legs, to wit 'knee-bent,' and they shall be instantly thrust down alive and drowned there. And this shall be done by him who prosecutes, and that water is the property of the Commonalty however it may have been appropriated by others." It does not say what was to become of the corpse of the executed felon, as is now the case when sentence of death is passed. It was a crime at Fordwich to even draw a weapon, the penalty being a large one for so doing in those days—ten shillings. For wounding, the convicted person had, curiously enough, a choice of one of three punishments. He could pay a fine of sixty shillings, or accept imprisonment for a year and a day, or have his hand perforated by the weapon he had used. A woman convicted upon the evidence of two or three creditable persons of scolding or quarrelling in public was sentenced to walk through the town with a vessel on her head called a "mortar," a piper preceding and "making sport." All pleas of the Crown "of life and limb" (except treason and coinage, &c.) were tried before the Mayor, Bailiff, and Jurats, and here a very remarkable custom was in vogue. The Bailiff's sergeant had the custody of the accused, and he "shall stand with an axe holding him bound, only he is to be unbound when he ought to answer." Should the accused wish to acquit himself he could do so if he was able to obtain "thirty and six good and lawful men and true who shall swear with him that he is not guilty." These thirty-six had to have their names written "and all called by name, and if they shall answer twelve of them ought to be dismissed by the Steward of the Lord Abbot, and twelve others to be dismissed by the Mayor and Jurats, so that the Mayor and Jurats may choose twelve of the thirty-six whom they may wish to swear with the accused that he is not guilty, so help him all Holy Saints, kissing the book, &c." Should they all swear the accused is innocent, he is acquitted, "and the accused attachable, and all his goods within the liberty are at the disposal of the Lord Abbot. But if any one of the twelve shall withdraw himself from the Book, being unwilling to swear, the accused shall lose his life." In such a small community where everybody knew more or less of the doings of their neighbours, it was probably difficult for a guilty person to get so many to proclaim his innocence, and swear to the same with such a solemn oath, so that in all likelihood this curious method of procedure led to rough justice being done.

But besides criminal laws the Custumal had to do with the regulation of trades, fishery, probate, intestacy, the custody of orphans, boundary disputes, maritime laws, &c. A licence to brew beer entailed a fine of twopence a year to the Lord Abbot, and if any brewer should brew any unwholesome or weak beer, that wicked adulterator of good drink was liable to a fine of elevenpence, of which one moiety went to the Lord Abbot and the other moiety to the town. If the brewer was fined a third time "she shall abjure the trade of a brewer for a year and a day, and then she shall not be reconciled without the licence of the Mayor and Jurats." It may not be generally known that the business of brewing beer was, until the end of the fifteenth century, almost entirely in the hands of women, and was formerly held in very low estimation. At any rate, that was the case in Kent, the land of hops.

In time of drought it was ordained that every man or woman should have a bucket full of water standing at the doorway of his or her house because of the danger of fire, under penalty of a fine. This must have been a wise provision at a time when most houses were timber built. Similarly it is ordered in the Custumal Book that the King's highways should be kept clean of "dung, timber, and all other nuisances, lying or standing, that may obstruct passengers, either on foot or on horseback," under penalty of a fine.

In case of sudden illness a valid will could be made by oral declaration before the Mayor or at least two of the twelve Jurats—a privilege in these days only permitted to soldiers and sailors on active service.

No one could sell any lands and tenements in the liberty to a stranger without giving the option to the nearest in blood. Should anyone have actually done the heinous deed, the nearest in blood, in the presence of the Mayor and twelve Jurats, could produce the actual money to the seller, and the property had to be handed over less twelve pence in the pound to this nearest in blood. And the matter might not end there. If any still nearer in blood were "living in distant parts" at the time of the sale and he should return within a year and a day he could in like manner claim the property "according to the custom of the aforesaid liberty." It was therefore exceedingly risky work in olden days for a stranger to acquire real property in the township of Fordwich, which was apparently the object of the Custumal regulations bearing upon the subject. The advent of foreigners was not desired.

Elaborate provisions are made for the custody of the estates of orphans under age, and it was not lawful for the guardians of such young people to give their wards in marriage without the consent of the Mayor and Jurats and of the nearest relations. When the land belonging to a married woman (*femme coverte*) was offered for sale the woman had to appear before the Mayor and Jurats, in the absence of her husband, in order to ascertain whether she, of her own free will, consented to the sale. A remnant of this old English custom of ensuring the freedom of married women from the control of their husbands has come down to modern times. A married woman is in certain cases examined apart from her husband before commissioners for taking acknowledgments of married women.

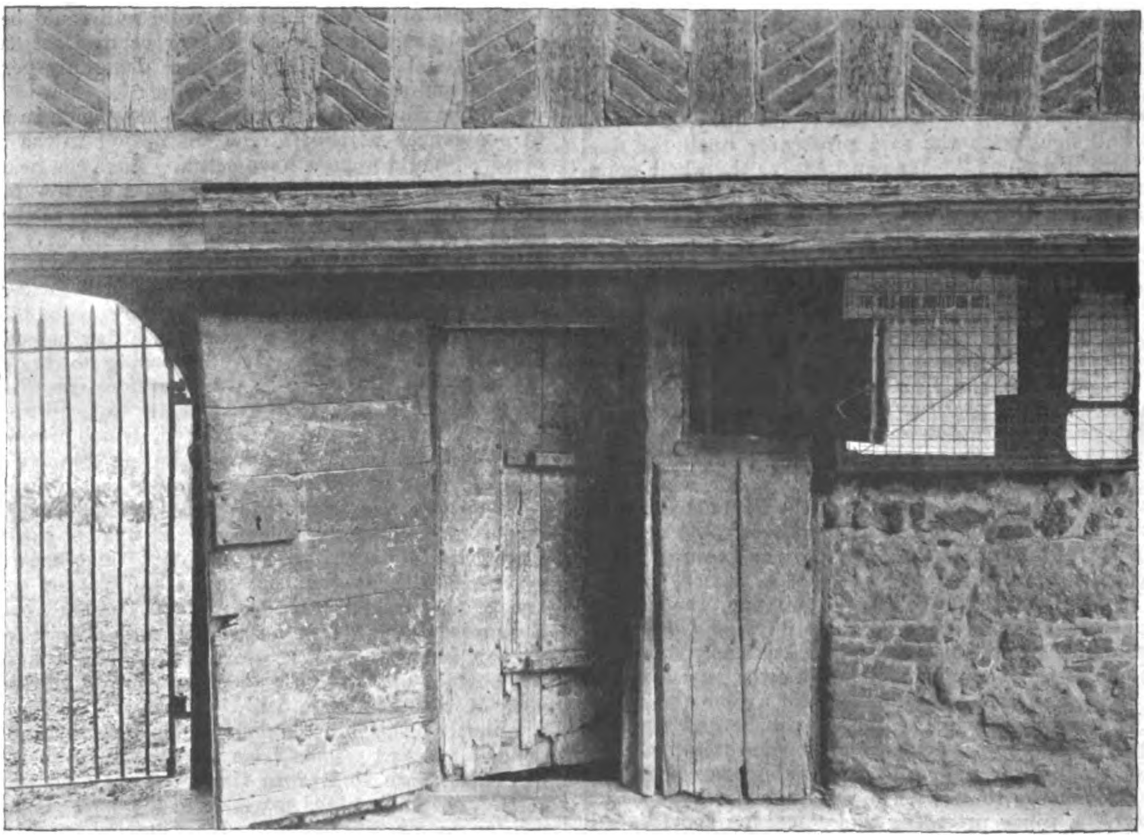
Every freeman of Fordwich had a most remarkable advantage—he could participate in the profits arising from the sale of all merchandise brought into the town. The words of the Custumal are, "And be it known that if any merchant, neighbour, or foreigner shall bring any merchandise to the town of Fordwich all those of the same town who shall be interested in such produce shall be participants in the profits." It may safely be presumed that *interested* meant in the same line of business or trade, but it is difficult to imagine how the profit was determined, and how the division thereof was made. People at Fordwich in those days may, however, have been more honest than we think.

The Freemen had the unusual privilege of proving wills before the Mayor and Jurats without recourse to the Ecclesiastical Courts, so that earlier wills in those days never went further than the muniment trunk in the council chamber—the trunk or chest which is to be seen there to-day.

Customs in kind were taken by the Abbot of St. Augustine's, and in the list of his perquisites are such singular items as "a cask of Jewish wine," "a sack of rags tied," "a basket of raisins," "a jar of ginger," "a silken cloth," "a pound of saffron," "a herring net," "an anchor," "a cask of butter," "a hundred sheepskins," "a thousand lambskins," "a thousand wild goat skins"—the only wild goats now are on the precipitous slopes of Achill Island, Connemara, and perhaps a few in the wildest parts of Cornwall—"a dozen fox skins," "a thousand cat skins," "a dozen wild cat skins," "a snake skin," "a bag of pepper," "a bag of incense," "a marten skin," "a thousand sand eels," "a load of lead." Altogether, if the customs came to much, the worthy Abbot must have had provided for him nearly every article he needed for domestic use and consumption in his monastery.

In early days, we gather from the monastic Domesday, Fordwich had to contribute to ship service for the Realm, but when the decay of the town as a port began, this tribute fell gradually into oblivion.

"In the reign of King Henry VIII. an Act passed for making that part of this river navigable which lies between Canterbury and Fordwich, so that lighters and boats might come to each alike; notwithstanding which nothing appears to have been done in it. Perhaps this might be owing to the difference which then subsisted between the Archbishop and the city, which caused him to build at Otford, instead of Canterbury, as he at first designed. However, in Queen Elizabeth's time Mr. Rose, an alderman of Canterbury, made an attempt to put the above Act in execution, and render this stream navigable; and besides being a great benefactor and encourager to it in his life-time he, by his last will, left £300 towards this useful undertaking. The consequence of which was that for some time there were a few lighters, and boats navigated this stream as high as Canterbury; but now, and for many years since, there has been no passage for them above Fordwich; but between that place and Sandwich there is a constant traffic carried on by means of this river, which is of some, though of no great benefit to the city of Canterbury, and its neighbours."—Hasted's "Kent." vol. i. p. cxxxii. (1778).



PRISON BELOW COURT-HOUSE.

In 1491 Sandwich contributed £40 "towards the ships," and Fordwich "allowed at one whole 15th and 10th." In the second year of Queen Elizabeth (1559) the head port seems to have recognised the fact that Fordwich was no longer in a position to contribute her full quota to the Cinque Port expenses, and consented to a composition for an annual tribute of twenty shillings. But in 1588 the patriotism of the little place was such that they contributed money towards the ships being fitted out at Sandwich to meet the Armada. The illegal exactions of Charles I. in the matter of ship money were strenuously resisted by the Freemen of Fordwich in common with the other ports. In 1639 the Council in Whitehall addressed a letter to the Mayor demanding the sum of £10 0*s*. 4*d*. before Michaelmas, the ship money charged upon the town for 1638, but the town successfully refused to pay it. I dare say that "4*d*." irritated them—it was menacingly precise.

Some idea can be formed of the varying fortunes of Fordwich by noting the receipts obtained from the town crane. This lading and unlading implement (besides its employment when the ducking-stool was called into requisition) was farmed out, and in 1515 it brought in revenue 14*s*.; a hundred years later, in 1616, it was let for £15 15*s*.; in 1687, £25 10*s*.; and in 1719, when it was worked by the Corporation, a profit of £27 9*s*. was made. Mr. Woodruff, in his book, says that within living memory as many as seven barges were regularly engaged in plying between Sandwich and Fordwich Bridge, freighted at times, it is feared, with something less innocent than coals. A cargo of spirits was sometimes put on shore under cover of the night, before the town quay was reached, and transferred to waggons which were awaiting its arrival on the river-bank. An old inhabitant remembered three barges bringing 300 tubs of spirits in one night under coals. The tubs were put into waggons at a place called "Hale-mile-bank," below the church, and taken to Dover.

Though to-day at Fordwich the ducking-chair, the two press-gang drums, and the old Civic Council House engross the chief attention, in the Middle Ages the place was seemingly more renowned for its trout[11] than for anything else. The excellence of this fish—sea trout, of course—was pronounced, and elicited the praise of gourmands and gourmets all over the county of Kent, and even further afield. The Rev. Samuel Pegge, who compiled his list of Kentish sayings in 1730, says their reputation had passed into a proverb, and that a noble lord, William, Earl Cowper, had lately caused himself to be made Mayor of Fordwich for the privilege of having one now and then. "They differ from all others," says this old writer, "in many considerables, as greatness, colour—cutting white instead of red when in season, cunning—not being taken with an angle, and abode—remaining nine months in the sea, whence they observe their coming up almost to a day." Nearly endless were the disputes and the law suits over this fishing. The Freemen and the Abbot of St. Augustine's were constantly at loggerheads over the subject, and a long suit between Lord Teynham and others in the reign of James I. was finally determined in favour of the Freemen, but during its course party feeling ran so high in Fordwich that the Mayor and others were actually indicted in the Chancery of the Cinque Ports for inciting to riot and violence. The fishing was with nets, and the season lasted from April until September. During the season the nets were placed in position by the town sergeant at 6 p.m. and taken up by him at 6 a.m. next morning, when the fish were carried to the person who owned the turn. These "turns" were highly prized. They were reserved in a strict order of precedence to notable persons, and were never extended to outsiders except as a special mark of favour for signal service to the town. Thus in 1739, when the Corporation desired to make some acknowledgment to Sir George Oxenden "for his immense services to the town," he was granted "a night's fishing in the ware, in turn next after the Archbishop of Canterbury." When anyone offended the town, on the other hand, his dire punishment was the withdrawal of the fishing right. In 1744 the town clerk, one Benjamin Didier, incurred the citizens' displeasure, and by many negatives the order was enrolled: "He shall not have no more turns in the ware." In 1671 the recorded turns began with the Mayor "until he takes a trout," and then went through a long series of names till the Mayor again had two nights' fishing together, "then the Jurats and every Freeman in course, as they shall severally dwell according to the course of the sun, from the house of the Mayor for the time being."

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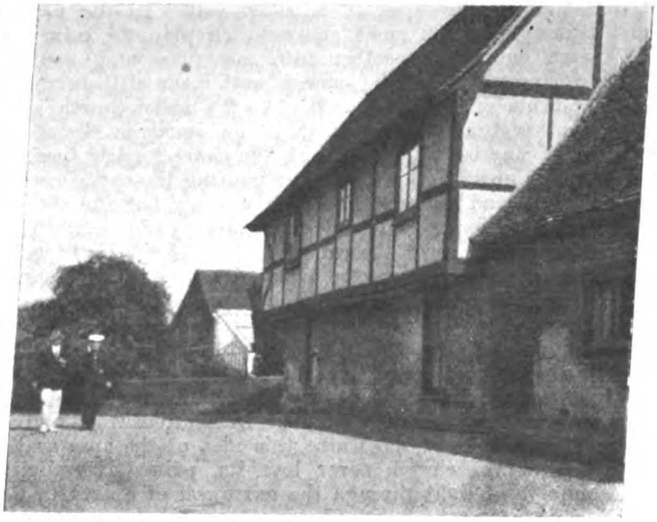
[11] "Below Fordwich, and to the mouth of the river in Pegwell Bay, there is still a different sort commonly called Fordwich trout, though it is supposed this fish never breeds in the river, but comes from the sea. They have been much more numerous formerly than they are at present, owing to the mouth of the river, where it empties itself into the sea, being so much narrower and shallower than it used to be, when the tide ran stronger and flowed farther up. These trout are sometimes taken of ten or twelve pounds weight, and generally upwards of four. They are sharp-snouted, and their flesh of a yellowish cast."—Hasted's "Kent," vol. i. p. cxxxii. (1778).

The Mayor was elected by the Freemen and the ceremony used to take place in the church, and the twelve Jurats were similarly chosen. There were all Justices of the Peace within the bounds of the town, and possessed almost unlimited jurisdiction in criminal as well as in civil cases. They acted as a sort of joint-stock coroner, and it is related that in quite modern times the office became so distasteful that one sensitive Mayor ordered the town sergeant to tie a troublesome corpse found floating in the Stour to the stern of a boat and tow it outside the limits of the liberty. Neither Mayor nor Jurat was allowed to evade the responsibilities of office. Should there be any shirking or attempt to shuffle off the incubus of official life the whole community was directed to proceed to the house of the shirker and "with hooks or other instruments drag it to the ground." The mention of hooks indicates that the houses of Fordwich at that time were wooden-frame houses.

ANCIENT COURT-HOUSE.

In the eighteenth century the business transacted by the Court of Sessions sometimes became very petty, if not peculiar—at least, so it seems to us to-day. Still, the records are of interest, throwing as they do much light upon the social amenities of the village community of that period. A typical agenda paper, as it may be called, is that of the "Presentments" to the Grand Jury on January 27, 1729. These include "Jno. Morent and Charles Steward are severally presented for not coming to Church." "Wm. Smith is presented for not driving to pound hogs running about the streets." It will be noticed that these presentments are for sins of omission, not of commission. The penalties enforced for *not* doing this and that are not given. Probably a public reprimand met the justice of the case in most instances. I inquired for the pound where straying animals were incarcerated, but failed to find any record of its location. Like many interesting things at Fordwich, only the memory remains.



HALF-TIMBERED HOUSE OPPOSITE THE RECTORY

Called the "Manor House," for no better reason than that it was once occupied by a person of the name of "Manners."

The town had two maces,[12] now preserved at Canterbury, one of which, about 10 inches in length, bears the arms of Charles II. between the letters C. R. and the Cinque Port arms on the foot. On the upper part of the stem is the date 1665 and the letters T. N., the initials of Thomas Norton, the then Mayor. The other is 41 inches long, and is a fine eighteenth-century mace of silver gilt with elaborately-chased stem surmounted by an arched crown. The bowl is ornamented with a crowned rose, a thistle, and a female bust between the letters G. R. Inside are the Royal Arms. Hasted, the historian of Kent, says the mace was presented to Fordwich by Admiral Graydon, of Hermesland, and was made out of Spanish dollars taken at Vigo in 1702.

The Common Seal represents a one-masted ship, with one yard, on which the sail is formally furled. The seal of the Mayoralty represents a "lion passant regardant in base a fish in a basin," with the legend around it *S. Maioris de Fordwico.*

(To be continued.)

GLASGOW INSTITUTE OF ARCHITECTS.

A quarterly general meeting of the Institute of Architects was held on the 11th inst. in the Secretary's chambers, 115 St. Vincent Street, Mr. Charles R. MacKintosh, F.R.I.B.A., Vice-President, in the chair. The Secretary reported with regard to the matters dealt with by the Council since the previous general meeting. The following were the principal items: (1) The election of Mr. Jas. Carruthers to the Council in consequence of the death of Vice-President R. D. Sandilands; (2) Motherwell Housing Scheme Competition, assessor appointed on the recommendation of the Institute; (3) the reference made to the death of Dr. Honeyman, R.S.A., a former President of the Institute; (4) conference with Building Trades' Federation *re* building contracts; (5) the Institute's suggestions regarding Cathedral Square lay-out; (6) the architectural design of the proposed cross river bridge. Attention was also drawn to the Institute's dinner on February 18.

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[12] "It has a mace belonging to it; and the Mayor, the same as at Sandwich, bears in his hand, when exercising his office, a black wand. By antient custom, the bell of the church is tolled at 12 o'clock at night at the going out of the old Mayor, and the new one must be chosen before 12 o'clock of the morn next ensuing. The mace, which is very handsome of silver gilt, was given to the Corporation by Admiral Graydon."—Hasted's "Kent," vol. iii. p. 605 (1790).

ROYAL ACADEMY LECTURES: ARCHITECTURE.—IV.

THE fourth and concluding lecture dealt with

THE SUMMIT OF GOTHIC STYLE IN FRANCE AND ITS DECLINE.

In his first lecture Professor Prior had explained how the three items of architectural expression which were the contributions of Classic architecture to the beginning of the mediæval were the arch, the column, and the curved wall. The concluding lecture dealt specially with the latter—that is, the apse or circular wall. In the nave and transepts of the great abbey-church plan the column and arch developed together into the pier and vault. Gothic experiment on the curved wall made still further developments of pier and arch. As the abbey-church got its great eastward enlargement in an immense choir or chevet, it may be called, perhaps, the characteristic special creation of great Gothic art. It was using the experiments which nave and transept had been making, but the chevet carried these experiments to extraordinary fineness. The peculiar conditions of the curved ending of the choir were creators of style, because the difficulties they raised became the stimulating factors of Gothic advance to its consummate achievement.

The apse of the basilica had been simply a curved wall, with a wood roof concealing the semi-circular coving. No windows were thought necessary; internally the whole wall space was decorated with mosaic. In South Europe and in the Romanesque of the Rhine this idea of the apse as the ending of the church never lost its primal simplicity. Admission of light through the narrowest of apertures was an easy matter in South Europe.

But the Norman builders found that a deep shadow crowned the vista and so introduced upper windows to remove the gloom. This was easily done with the simple apse. When, however, the apsidal endings were laid out on a more extended plan with periapsidal passages and apses opening from them, the difficulty of lighting became urgent. To meet this, windows in apse walls were multiplied all round on the ground floor, but even so they were far from lighting the chevet-centre—the altar that was the centre of devotion. No windows could be set above, for the high coving of the main apse head had to be abutted by the vault of the periapsidal passage, and this again by the small apse walls.

At first in Picardy, where the chevet was experimented in, the recessed chapels of the apse were kept shallow. With shallow chapels, first the windows were less distant from the altar centre, and secondly the roofs of these chapels were less blocking above. Even then the upper lights could scarcely be got between the abutting roof of the periapsidal passage and the springing of the semi-dome that covered the apse, and the whole lower part of the chevet remained dark.

Nevertheless, the chevet was to grow to still greater dimensions under the exigencies of ritual. Out of the pressure of ecclesiastical dictation and the insistent pressure of the practical need of lighting came the flying buttress, the most extraordinary invention of mediæval style, and, as its consequence, the marvellous development of vaulting height in French cathedrals. The first step was breaking the continuity of the abutting roof that spanned the periapsidal aisle, so as to allow windows being placed in the wall of the inner apse, almost at the crown of the vault. The constructions by which these devices were rendered possible were those of the ribbed vault, by which the whole weight of the web was conveyed to a single point in plan.

As long as the apse was small and low, a thickening of the pier outside above the periapsidal vault and the abutment of the transverse arches across the periapsidal passage took the line of thrust, the strut-post, as it were, into the walls between the apsidal chapels, where there was a body of wall to hold it in place and prevent it kicking. But when the vault was large and lofty the pressure could not be controlled by a single line of strut; it required support right at the top and for a long way down. The flying buttress so developed as a continually supporting abutment all the way up the pier that carried the ribs of the apse. And when, as came in the ambitious planning of great churches as early as the middle of the twelfth century, a double aisle was given to the choir and accordingly a double passage taken round the apse, the difficulty of lighting was enormously increased, for the windows were further off for lighting the centre of the sanctuary on the ground floor. Then the most extreme tenuity of construction was required in order to allow the supports to interfere as little as possible with the window lights. We find, as well as slender circular pillars in the apse, the shafts between the windows are reduced to smallest widths, and the whole bulk of the wall is concentrated on radiating lines, along which the thrust of the arches was taken outside by a series of flying arches. As magnificence of church-building increased there was a continual fining away of all the bulk of masonry, a continual substituting of lines of thrust for inertia of mass.

This was, therefore, the experiment, the adventure, of Gothic style that marks its passage from the era of Romanesque. The aspiration was, as it were, one of flight—of lifting stone into the air always higher and higher, and for this end the making of stone always lighter and lighter, till the solid walls of the basilica are resolved into a scaffolding of buttress. Stone was become the precious thing, and the labour of man was endless in chasing, facetting, and cutting it like a diamond. In the energy of this stone-shaping it was re-created, as it were, from an inert senseless mass into a living, almost breathing creature. So did the Gothic builders succeed in giving a soul to stone.

The French cathedrals grew steadily greater in area and more magnificent in creation from 1180 to 1280. The greatest, Rheims, Bourges, Amiens, were laid out in succession from 1215 to 1230, and were carried on to about 1270, each larger than its predecessor. Then followed the choirs of Le Mans and Beauvais, the most enormous of all, which, like many of the French designs of great cathedral building, remain unfinished. The extraordinary activity and creativeness of French style ceases rather abruptly, and after 1270 the history of the Ile de France architecture till 1470 is curiously barren.

Besides construction, there were other features of the church fabrics which, certainly in the eyes of their builders, were of an importance to which the mere building scheme yielded at all points. The structure of a great mediæval church must be judged as being the framework of a sacred enclosure, but also, and just as significantly, as the framework of a sacred doctrine. This doctrine was presented to the faithful in three special exhibitions—by the sculpture, by the glass, and by the sacred fittings and images. Mediæval architecture must never be regarded as bare walls. Nowadays we mostly see it as such, or as the backing of contents which are completely at variance with the enclosing architecture. Both the delicacy and artistic fitness of the ancient churches cannot now be realised, save by going to museums and noting the splendid and precious things that were once in churches, and thinking these back into their places in the great architecture of the Middle Ages. And for the brightness and the fancy of it all look at mediæval manuscripts and their illuminations, which in miniature may suggest the brilliance and variety of mediæval art. Best of any church in England or France, Westminster Abbey may in some degree, despite its dinginess, present that wealth of internal fitting of shrine, image-sculpture, and monumental erection to which mediæval church-building was not only a frame, and by which it was a picture.

The simplicity and grandeur of sculptural expression was directly displayed in the service of religious exposition, just in the same way that the simplicity and grandeur of construction grew into the expression of the fabric. There came in this way that mid or central Gothic style which may be called especially the product of the Ile de France, when the enthusiasm of building came to its zenith in the third quarter of the thirteenth century, and simultaneously did the religious expressions of sculpture. The sculptural intention of religious art (and all the artistic forces which make for this expression) underwent, at a certain crisis of the story, a change, which shifted its appeal from objective dogmatic representation to the subjective emotional.

Twelfth-century Romanesque sculpture was symbolical; it represented religious ideas under the signs of decorative intention, its scheme was derived from the mystic theology of the East. Then in the discovery of free figure-work Gothic sculpture became intellectual. The statuary on the church porch was a homily expressed in figures of sacred personages—its representation was that of a religious truth necessary for the salvation of mankind. The ranges of statues at Chartres, at Rheims and Wells, at Amiens are dogmatic expositions of the Christian faith. But later, in the fourteenth and fifteenth centuries, Gothic sculpture turned to address the senses, became emotional. Its object was graphic representation and feeling, and its appeal was to fancy and sensibility.

[Professor Prior illustrated this part of his lecture by some remarkable lantern slides, and in doing so paid a warm tribute to Mr. Arthur Gardner for his loan of the unique photographs.]

When about 1275 something sensibly passed out of the heart of sculpture, something passed out, too, of the heart of building. Rheims and Amiens were by that time the most finished of the great French cathedrals. They had developed all those engineering feats by which the walls of a great cathedral were displayed as a network of stone and glass, and its structure from foundation to pinnacle developed on the fitting together of shaped and pieced traceries, traceries of wall and buttress, dependent for their stability on the counterpoise of thrust and abutment. The wall, all glass, and its exterior all a skeleton of buttress abutment. In the direction of actually lightening the mass of stone building, the physics of the material could allow no further advance. Experiment was therefore by the necessities of the case shifted to another idea. Hitherto all the devices of stone shaping had been in constructive science—in fining down the substance to the exact working dimensions required by structure. Note the shift of idea. The craft of stone turned from the practical actual reduction of constructive mass to a simulative apparent reduction. It was to make construction look lighter that the continual invention of the mason worked.

In the window the attenuations of arch shapes led to an arched tracery, but the excess of this attenuation led to a compromise of arch forms. In the flying buttress the scaffold methods of stone shoring exaggerated slenderness and hid its substantial mass with pinnacle and crocket, the frilling and lace of construction. On all sides the mass of wall was riddled by constructive divisions till it became a cellular body—that is to say, its cohesion began to depend less on the big structural mechanics of pier and arch and wall than on the interlacement of cunningly fitted pieces. In fact, the wall was returning to the mechanical basis of Roman concrete. And significantly, in so doing, the forms of ancient construction—the flattened arch and columnar pillar—reappeared, and architecture had been structurally Romanised in Northern Gothic some little time before the classical tradition declared itself by new motives of decoration.

The motive of the later advances of Gothic style lay in the multiplication of structural features, but at the expense of structural expression itself. In the case of the column, the shafts were multiplied till they were shafts no longer. In windows, the arches were multiplied till they interfered with one another and became patterns; and in the vault the ribs, once constructional, became entirely ornamental.

The west front of Rouen gives the contrast of the 1200 feeling of architecture and that of 1500—the former severe, constructional, purposeful in its representation of the faith; the latter a purposeless exhibition of skill in what can be called only stone netting, with gables that are no gables and windows that light nothing. The Gothic items of building have become formulæ of decoration in no different way than the Classic orders in Roman building became stage scenery—a decoration with as little expression of the building faculty as if they had been a matter of paint on the surface.

It was at all this triviality that the gorge of the Renaissance rose. The return to Classic inspiration was not a foul torrent, surely, as Ruskin described it, but the natural healthy reaction from extravagance and heartlessness—the return to a bigger sense of architecture.

ART IN LONDON.

THE WORK OF THE LATE SIR ALFRED EAST, R.A.

MESSRS. ERNEST BROWN & PHILLIPS deserve well of the art-loving portion of the public for having amassed at the Leicester Galleries such a fine show of the lamented Alfred East's craft. We little thought, when attending the opening ceremony of the Kettering Art Gallery last summer, that the "angel of the brink" would so soon launch his death-conveying lance against the breast of this doughty artist, despite the then serious state of his health. His own district of Kettering is permanently enriched by the works of his hand, presented by himself to the place of his nativity. Here, in this loan collection, London is temporarily the gainer by a fine display of etchings, water and oil-colours to the number of one hundred and fifty. Alfred East was an artist of environment; the vibrant notes of his sensitive organism were responsive to the touch of Nature in her various moods. Regard such oil-colours as "Golden Autumn," "Sunset after Storm, Walberswick," "A Norfolk Village," "Autumn in Spain," and "St. John's Wood," and such water-colour work as "Pont de l'Arche, Normandy," "El Escorial," "Near Overstrand" (No. 10), also "Segovia Cathedral" (Nos. 15 and 37), the latter wrongly catalogued, by-the-by, and "Segovia Castle" (No. 45); here are varied works under various aspects of Nature, but we feel transported to the several spots. The note of tenderness is very prevalent in Sir Alfred's work, but in order to do justice to our critical faculty we must at this point say that the artist could at times strike a note not accordant with our senses, such as "Une fête champêtre," "Wind-swept Trees," and some others. We regard the portrayal of "Gommers Haugh" in No. 82 as too obtrusive for the tender foreground and middle distance. For their fine qualities, attention should be directed to No. 80, "A Silvery Landscape," and to the etchings, "In the Elan Valley," "Last Days of the Tuileries," "The Swollen River," and "Willows in Moonlight." But at last it does injustice to so many of the exhibits to select a few for special mention, that we think it well to stop here and now from further criticism.

WOMAN AND CHILD IN ART.

ONE of the natural pleasures attendant upon a visit to an exhibition of Old Masters is the anticipation of seeing works hitherto uninspected—works whose fine qualities may combine with the charm attaching to novelty, to imbue the canvases with a special fascination. Whether the admission be approved or not, we would disclaim any great interest in an Old Master merely by reason of its age, unaccompanied by evidences of adequate attention devoted to the canons of Art.

With the object of the Second National Loan Exhibition at the Grosvenor Gallery we are in full sympathy, for the proceeds are to be dedicated to the purchase (for the nation) of works by contemporary British artists. . Of the ten dozen exhibits, more than a third have never hitherto been submitted to general public inspection, and though this fact aroused a certain measure of interest, yet it was a bare dozen of these that made any strong appeal to us. There are not a few people who would seem to regard it as an impertinence for adverse criticism to be levelled against an Old Master; but as long as such criticism is based upon intelligent consideration not Raphael, nor Titian, nor Rubens need be held sacred in that respect.

There is this to be added in regard to any feeling of disappointment experienced, and that is that it is only reasonable to suppose that the choicest of the Masters have long since found their way to the public gaze and appreciation. But, despite this preface, it is to be understood that the exhibition under review is far from devoid of charm. Better examples of Raeburn, Reynolds, Rubens we have indeed seen, but in compensation are to be found some gems by Romney and some excellent works by Angelica Kaufmann, Mme. Vigée Le Brun, John Hoppner, and others.

Burne-Jones is represented by "Aurora," where the rhythmical swing of the graceful female figure is to be noticed. Of Hoppner's art there are eight examples, and of these special attention may be directed to the portrait of the Countess of Derby (Miss Farren), a work not previously exhibited, and "Lady Frances Peacock" and "Miss Blake" show Hoppner's art to the best advantage. Sir Henry Raeburn's "Mrs. Simpson" displays a virile touch, but the curiously dark splash of colour at the tip of the nose is discordant; this, also, is one of the works new to the public.

There are numerous canvases by Reynolds and Lawrence. Attention must be directed to the family portrait group limning Viscount Melbourne's children; this, together with the canvases of "Miss Mary Horneck" and "Alexander, tenth Duke of Hamilton," are the best of the Reynolds shown.

Several of Sir Thomas Lawrence's works prove highly attractive; "Caroline, fifth Duchess of Richmond," "Lady Maria Villiers," "The Sisters Fullerton," "Mrs. Hemming," "Lady Palmerston," and "Lady Leitrim and her Daughter" are most masterly. Hogarth's portrait of the Hon. Edward Montague is the best of the three examples of this master. Gainsborough's portrait sketch of his daughter Mary is very attractive.

But two of the gems of the collection are George Romney's hitherto unexhibited "Ambassadress" and portrait of Mrs. Oliver and baby; the infant truly merits the description that it is portrayed "with such truth to nature as to impress the spectator with an idea of hearing it respire"; the "Ambassadress," for which Lady Hamilton sat for Romney, is the last portrait which he painted of her. It forms a perfect picture, and is enticingly attractive.

Pieter de Hooch's "Golf Players" has his peculiarly pleasing touch in the red-quarry paving and the distant village. Franz Hals' portrait of Marie L'Arpe is very effective work, and Mme. Le Brun's portrait of La Marquise d'Aumont is as good as anything in the whole collection. "L'Odalisque à l'esclave," by J. A. D. Ingres, is marvellously effective; the pose and the painting of the nude figure are excellent, and the scheme of colour is one that would suggest the drowsy overladen atmosphere of the harem.

Sir Peter Lely is represented by two previously unexhibited portraits of ladies, painted in his characteristic style. Zurbaran's portrait of a lady as St. Elizabeth of Hungary shows a charming subject, most skilfully modelled and portrayed. Goya, Velasquez, Rubens, El Greco, and others we have passed by without individual notice, but space must be found to record the presence of Miss Kaufmann's masterly presentment of Lady Caroline Damer and the good modelling and colour shown in Mr. George Watson's portrait of his son.

In conclusion, we must note Tintoretto's powerful work of "Leda and the Swan." It is highly pictorial, and, new as it is to the public, it will be welcomed with enthusiasm, despite the somewhat shady nature of the mythological story embodied in the picture.

MR. W. RUSSELL FLINT'S WATER-COLOUR SKETCHES.

Sketch is indeed the correct word for Mr. Flint's work on exhibit at the galleries of the Fine Art Society in New Bond Street, for with comparatively few exceptions there is a lack of finish, and too often there is a clumsiness of line which prove distasteful. But it will be more grateful to our feelings to call attention to some of the works which we approved. As the best of those on view we regard "Japanese Scotland," "Gossip on the Piazza, Taormina," "St. Fillan's Hill," "Ilex Gloom, Villa d'Este," "Subiaco" (No. 36), "By the Ionian Sea," and "A Study of Rowan and Birch Trees." This does not exhaust the work that we found pleasing, but the total proportion was small. At times Mr. Flint has a nice direct and virile touch, and uses a clean palette; at other times the touch is feeble, the colour dirty and crude. Too often his sketches lack luminosity; but one point we can unstintedly praise, and that is his portrayal of trees, and it is upon this note of praise that we would prefer to rest.

MR. THOMAS McLEAN'S WINTER EXHIBITION.

In the small gallery were ten worthy representatives of the British school, whilst the large gallery contained examples of Continental work, French, Spanish, German, and Dutch. Mr. J. W. Goddard is an exponent of the art of Lord Leighton on one hand—of Alma-Tadema elsewhere; but his figures stick to the background unfortunately. The purity of his colour-tones is unsurpassable, and there is a luminosity in his work truly remarkable. W. P. Frith's "Salon d'Or" carries one back to the second quarter of last century; the picture tells its own story in the smallest details, and the technique is thoroughly in keeping with the subject and the composition; we prefer this to "Ramsgate Sands" or "The Railway Station." Mr. Farquharson's "Weary Waste of Snow" is well representative of this artist's delightful work. Orchardson's "Four Generations," though undoubtedly clever in its technique leaves much to be desired. The figures of Queen Victoria and King George are the best, but the whole effect is one of "pose." Mr. J. M. Swan's "Orpheus" may attract some, but to our mind the movement of the man is displeasing, the best figure being the leopard sprawling at his feet. Mr. Clausen's "By the Seashore," showing a girl knitting, is very good in its ensemble, but the figure is somewhat angular.

M. Jules Dupré's "L'Orage" seems to embody the spirit of the storm, and we contrasted, to the Englishman's disadvantage, Van Marcke's "Vaches au Pâturage" with Sidney Cooper's "Canterbury Meadows" in the small gallery. The three works by Corot proved attractive, "Matinée de Printemps" being deeply rhythmical. Josef Israels' one canvas, of course, showed good work, even if not enchaining our attention. M. Fantin Latour was represented by five of his marvellous flower-pieces—to him first place in this class of work, let who may be second. F. C. Cazin's "Evening" is full of rhythm. Other exhibits, good as they might be, appealed to us with less vigour, but the whole show was one of deep interest, commanding the attendance and attention of all cognoscenti.

NEW "UNDERGROUND" POSTERS.

Since early in the seventies when Fred Walker designed his famous placard advertising "The Woman in White," many painters have been ready to turn their talents to poster work —no doubt finding in it a relaxation. Names like Sir E. J. Poynter, Herkomer, Anning Bell, Wilson Steer, and Frank Brangwyn are not familiar in that branch of designing, but these and many more might be mentioned as among English poster-artists. It would be misleading to include Sir John E. Millais among them, even though, as Mr. Spielmann asserts, "Bubbles" introduced a revolution in favour of artistic advertisement. For Millais was furious when the manager of Pears' Soap first called at his studio with specimens of that advertisement. "Bubbles" had been painted as a labour of love, with a grandson for model; later it was sold with its copyright to the proprietor of the *Illustrated London News*, who, after using it as a supplement, resold it to the soap makers. It may be mentioned, however, that the painter became somewhat mollified by the excellence of the reproduction. There arose at the time an outcry against this so-called debasement of art.

During the subsequent thirty years posters have found many brilliant exponents, and there has simultaneously been a steady forward tendency among the rank and file.

A somewhat startling testimony to the value of this kind of publicity has recently been afforded by the enterprise of the Underground Railways of London. Certain members of the Senefelder Club were commissioned to design posters in lithography. A notable point about this commission is that the artists seem to have been allowed unrestricted choice as to subject and treatment. In the set of seven there is only one poster which directly refers to the "Underground," and that is a clever bird's-eye drawing by Mr. Joseph Pennell, of Charing Cross, with the river as background. Mr. Frank Brangwyn shows a corner of the London Docks in delightful harmonies of brown and black. The most architectural drawing is a view of Trafalgar Square by Mr. Kerr Lawson, in which St. Martin's Church is rendered with fine effect. But the other artists do not seem to have thought even remotely of producing an advertisement, and so were untrammelled in treating their subjects, whether it was a reaper, the interior of a theatre, Chiswick Mall, or a male dancer in tennis costume. Whether that is good or bad business is no concern of ours. Certainly, it opens the way to good art. Hoardings may in time become real picture galleries, instead of blatant appeals to the passing eye. The new series are attracting considerable notice. It behoves railway bill-stickers to give them the best possible frames—not, for instance, round a curved pier.

REPRESENTATIVE EXHIBITION OF BRITISH ARCHITECTURE AT PARIS, MAY 1914.

A joint committee of members of the Royal Institute and of the Architectural Association has been formed to get together a collection of drawings, &c., representative of British architecture, together with students' drawings, for exhibition in Paris early in the month of May next. The proposal to hold the exhibition emanates from the Société des Architectes Diplômés, of Paris, to whose good offices, it will be remembered, the profession in England were indebted for the most interesting exhibition of drawings by students of the Ecole des Beaux-Arts held by the Architectural Association at the Tufton Street Galleries last year. The exhibition now to be held in Paris was originally intended to be composed mainly of English students' drawings, but it was ultimately resolved to include a representative collection of British Architectural work, and for this reason the Société des Architectes Diplômés have invited co-operation of the R.I.B.A.

The exhibition will comprise three main sections: (1) Historical; (2) modern work; (3) students' work. Scottish and Irish exhibits will be grouped separately to show their historical and modern development. Modern work of a representative character will be shown limited to buildings actually carried out.

It is understood that the exhibition will be officially opened by the President of the French Republic.

The Chairman of the Joint Committee is Mr. Reginald Blomfield, R.A., President R.I.B.A., and the Hon. Secretary, Mr. P. Cart de Lafontaine.

By a typist's error in the description sent us the Rathborne Convalescent Home was said to be lighted by "Fitz" Safety Petrol Air Gas. This, we now understand, should have been "Litz" Safety Petrol Air Gas, Messrs. Bailey & Chapman, Ltd., of Keighley.

SHEFFIELD SOCIETY OF ARCHITECTS AND SURVEYORS.

"REINFORCED Concrete and its Application to Architectural Building Work" was the subject of an illustrated lecture delivered at a meeting of the Sheffield Society of Architects and Surveyors, held at the University last week. The lecturer was Mr. Gilbert Heathcote, B.A., of London. The President of the Society (Mr. A. F. Watson, F.R.I.B.A.) occupied the chair.

After giving a short outline as to the origin of reinforced concrete, and a short history of its progress up to the present day, Mr. Heathcote gave clear and concise facts to show that it is a material which has come to stay; first, owing to its ever-increasing strength, and secondly, because no annual maintenance charges of any consequence have to be expended upon it.

The lecturer strongly deprecated the present methods generally adopted by users throughout the country in dealing with reinforced concrete designs and estimates. He outlined what he thought to be the best manner in which to undertake work of this nature, in the interests of the architect, his client and the contractor, and also, as he considered, in the interests of the whole future progress of this form of construction in England.

THE G.P.O. AND ST. VEDAST.

IT is interesting to note that Colonel Hellard, in the recently issued report of the London Traffic Branch of the Board of Trade, has recommended that the suggestion so long put forward by the London Society, that the building line for the new buildings on the Post Office site should be set back at the southern end to allow of a new thoroughfare to Liverpool Street being made in the future, should be adopted.

Colonel Hellard says: It has also been proposed that a new street should be constructed in the City, to lead from the east end of Newgate Street to the corner of London Wall and Finsbury Pavement. In view of the construction within the next few years of St. Paul's Bridge and the widening of St. Paul's Churchyard, whereby a large amount of extra traffic will be discharged into this open space at the east end of Newgate Street, an outlet to the north-east towards Liverpool Street and Bishopsgate, such as has been suggested, seems to be of great importance, as it would undoubtedly tend to relieve the present congestion in Mansion House Street. The construction of such a street in the future would be facilitated if in the course of rebuilding the Post Office sufficient space can be left for it without having to interfere with St. Vedast's Church.

WELSH NATIONAL MEMORIAL SANATORIUM.*

THE King Edward VII. Welsh National Memorial Sanatorium, Pont-y-Wal, South Wales, will be the largest, and one of the first, if not the first, sanatorium to be erected under the National Insurance Act. The proposed building was illustrated by seventy sheets of drawings.

The site purchased is an ideal estate of about 375 acres, sloping generally to the south, but undulating and well-wooded, and commanding most beautiful views of the Black Mountains and other ranges of the Brecon district.

The plans provide a total of 304 beds for patients, divided as follows: Male ambulant patients, 125; female, 75; children, 48; children in isolation, 6; males and females requiring special nursing, 50; total, 304, which, with a staff of seventy-three, brings up the total to be housed to nearly 400.

The building was designed on strictest lines of rigid economy consistent with thorough efficiency and smooth working. In other words, the accommodation is in every respect ample, but the buildings, while of fire-resisting construction throughout, are of the simplest elements. Thus the pavilions are of ferro-concrete, with 3-inch external walls. Plastering and glazed brickwork are omitted generally.

The site selected for the sanatorium itself is on a southern slope, with a steep fall, but roughly level from east to west. The buildings are built on this east to west axis, and rise one above another at about 100 feet intervals, so that the patients in each pavilion look over the pavilions of their southern neighbours. This provides the ideal southern aspect and a beautiful prospect of the distant mountains.

The sexes are separated by the administration buildings forming a central bar from east to west, neither sex having any necessity to pass this bar.

The nurses' home is south of all, so that when off duty they are away from their "shop."

The drainage will be by a duplicated system, one main pipe for soil and another for rainwater. The soil will be carried to an outfall tank and treated, the effluent being taken to the stream on the estate.

Rainwater will be stored for use in the boilers.

Water Supply.—Water will be supplied from Talgarth, and this will have to be taken to Pont-y-Wal House reservoir. There will be no storage tank in any building except for the steam boilers. This not only saves cost in the initial outlay, but pure water is drawn direct from the main.

Lighting Power.—The lighting throughout and the power for driving all machinery will be by electricity generated in the power house. There will be steam boilers in duplicate, each capable of doing the whole load. There will be two dynamos, each again capable of doing the whole work. It is proposed to provide an accumulator plant.

Heating and Hot-water Supplies.—It is proposed to heat, with steam pipes and radiators, the nursing block, the children's pavilions, the patients' dining and writing halls, the staff dining rooms, and the corridors of men's quarters. The drying, boot, clothes, and linen rooms of all pavilions will be heated off the hot-water services, as the heat in these is required all the year round. There will be no heat in the ambulant wards or workshops. The duty rooms of pavilions, the offices and all domestic rooms of female staff, the stewards' quarters and the lodge will have fireplaces.

The hot water will be raised in calorifiers next the boiler house, and thence circulated through the various buildings by means of pumps in the calorifier house. By this means water at a high temperature will be obtained at every draw-off valve at sinks, lavatories, and baths. The calorifiers are in duplicate. All condensed water and exhaust steam will be collected and utilised.

Sterilising plant will also be provided for clothes and sputum, a lavatory, post-mortem room, mortuary, boot-repairing room, workshops, &c., and large stores of all sorts to provide against impassable roads, strikes, &c.

Cost.—The Departmental Committee in Clause 4 of the introduction to their report recommend "grants up to three-fifths of the cost per bed (which is estimated at not exceeding £150) should be made for the provision of additional sanatorium and hospital beds for adults, provided that the total sum should not exceed £90 per bed." This has been interpreted to include land (following a clause in the interim report of the committee) and furniture.

This is far too inelastic. Sanatoria of thirty to sixty beds may be built for the money if the land is limited in area, and if plain slab concrete sheds with the minimum administrative buildings, earth closets, no machinery, boilers or plant, no electric lighting, &c., &c. ; but each sanatorium must be judged on its merits. Certainly, no large sanatorium, designed to comply with the requirements of the memorandum of the Departmental Sub-Committee, can be erected at the above-given cost laid down by the report interpreted as above.

One hears it said that a sanatorium has been erected somewhere for £60 a bed, but on investigation it will always be found that this means a shed of a few beds with a bathroom and water closet.

Again, one constantly hears it said that at Benenden the sanatorium cost £100 a bed. Now, that institution has 105 beds (with a few more in a tent). Of the 105, a pavilion containing twenty was a free gift, and the total cost of the other eighty-five beds, according to the published accounts, works out at £213 a bed without land or furniture; and the sanatorium has no electric lighting or generating plant (with its necessary building), no laundry, no covered way between its pavilions, &c.

The fact is, the cost of any large sanatorium is affected by distance from railway station; distance from brickfields or source of supply of other materials; drainage, or lack of it; water supply, or the lack of it; power and lighting plant; laundry; heating and hot-water plant.

Engineering plant of all sorts costs about 33 per cent. of the whole, while the cost of the patients' pavilions is about the same.

It has been stated that small twenty-bed hospitals or sanatoria cannot be built under about £200 per bed, with no laundries or generating stations.

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* A Paper read before the Royal Sanitary Institute by Mr. E. T. Hall, F.R.I.B.A., on February 10.

It must be borne in mind that Pont-y-Wal is a large village of 400 sick people.

Mr. Hall, in conclusion, said that when the tenders were received, which would be very shortly, they would know what the cost really is of such a sanatorium designed on the most economical lines.

They hoped to do the work at £150 per bed, excluding land and furniture; but materials, bricks, &c., are much more expensive at the site than in London or other large towns, and they could not commit themselves to any figure.

THE PLANNING OF SANATORIA.

An important memorandum on "Provision of New Residential Institutions for the Treatment of Pulmonary Tuberculosis" has been issued by the Local Government Board, over the signatures of Mr. Brook Kitchin, their architect, and Dr. A. Newsholme, medical officer to the Board.

The memorandum was prepared with a view to affording local authorities and others assistance in the provision of special residential institutions in connection with permanent schemes for the treatment of pulmonary tuberculosis. The unit taken in setting out the details has been 100 beds in buildings, with ten additional beds in shelters. The memorandum is as follows:—

Economy in Building.—In preparing this memorandum economy has been borne in mind throughout, but, it is believed, without any sacrifice of efficiency. The cost of an institution—apart from the cost and the character of the site—depends primarily on its planning; after this on the character of the materials used in its construction. The local circumstances must be taken into account in determining the choice of building materials.

Site.—In the selection of a site the most important considerations to be taken into account are: (1) area; (2) elevation in relation to surrounding country; (3) cheerfulness of outlook; (4) protection from certain winds; (5) subsoil; (6) drainage facilities; (7) water supply; (8) convenience of access.

(1) The area of land required for the site will depend upon the number of patients and the type of cases. The site of a sanatorium should be sufficiently large to permit of open-air employment of a considerable number of patients. It is desirable that a site of fifty acres in extent should be provided for 100 patients if land is readily available and the cost is low, but an area of not less than twenty acres may suffice for this number of patients where suitable land is difficult to obtain or the cost of land is high. It is desirable that in all cases an area of at least one-fifth of an acre should be allowed per patient.

(2), (3), and (4) The site should preferably slope gradually to the south, and be protected on the north and east by high ground, preferably wooded. In some districts protection from westerly and south-westerly gales may be desirable. The site should be moderately elevated above the country lying to the south of it.

(5) The subsoil has importance, not only as regards dampness or dryness, but also because the cost of building may depend somewhat upon its character. The main consideration is that the site should be dry. This must be secured if necessary by proper drainage, but a site requiring extensive drainage should, as a rule, be avoided.

(6) If drainage into a public sewer is impracticable, the site should be suitable for the provision of an adequate sewage disposal system.

(7) It will be necessary to ascertain that an abundant supply of pure water is available.

(8) The site should, if possible, be within easy reach of a railway station. The cost of carriage from the station to the site will form an important factor, not only as regards construction, but also in the subsequent maintenance of the institution. There is the further consideration that it is undesirable that patients who are acutely ill should be unduly remote from their relatives.

Buildings.—In residential institutions for the treatment of pulmonary tuberculosis the following provision will be required: (1) Patients' sleeping accommodation; (2) kitchen, dining hall, and offices; (3) staff block containing quarters for resident medical officer, matron, and staff; (4) outbuildings, including laundry, boiler house, disinfector, sputum destructor, mortuary, &c.

General Considerations as to Accommodation for Patients.—As the planning of the institution will depend on the stage of disease of the tuberculous patients proposed to be admitted to it, it is necessary to set out a classification of cases of pulmonary tuberculosis arranged from the standpoint of accommodation in residential institutions.

Group A.—Cases in which permanent improvement or recovery may usually be anticipated.

Group B.—Cases in which only temporary, though possibly prolonged, improvement may be anticipated.

Such cases will include: (1) Patients who may be expected to recover considerable ability to work, as a result of protracted treatment; (2) patients admitted for a short term for educational treatment; (3) patients with advanced disease, many of whom improve greatly under institutional treatment.

Group C.—Advanced cases requiring continuous medical care and nursing.

Group D.—Cases requiring special observation. (1) Patients admitted for the purpose of diagnosis; (2) patients needing to be watched, before the best form of continued treatment can be determined.

"Emergency" cases—e.g. patients with hæmoptysis, &c.—may come within any of the above groups.

For the sake of clearness, the term "sanatorium" is used hereafter to indicate an institution mainly devoted to the reception of patients in Group A, the term "hospital" to indicate an institution provided for the reception of patients in Groups B, C, and D, and the term "combined institution" to indicate an institution devoted to the reception of patients in all four groups.

Very commonly, however, patients in Group B (1) are treated in institutions intended for patients in Group A; but the advantage of the protracted treatment of patients in the former group in a sanatorium is somewhat doubtful. Occasionally patients in Group D may be received into a sanatorium, but such patients are usually better treated in a hospital situated nearer the patient's home than the sanatorium, when both institutions are available.

The patients in all four groups may be treated in a combined institution, in separate rooms or pavilions. This arrangement is most suitable for areas with a population too small to require the provision of 100 beds for patients in Group A. A combined institution should be so situate as to secure fairly easy access of relatives to patients acutely ill, while giving good local conditions for patients in Group A.

Sleeping Accommodation for Patients.—The sleeping accommodation provided in residential institutions for the treatment of pulmonary tuberculosis is commonly of one or more of the following types:—

I. Single-bedded rooms; II. two-bedded rooms; III. beds on both sides of a ward as in the ordinary isolation hospital; IV. shelters.

I. Single rooms are often desirable for patients who require a considerable amount of nursing whether in Groups A, B, or C. These rooms should be situated in the special nursing section. Single rooms may also be required for patients in Group D. The rooms for patients in Group D need not all be situated in the special nursing block.

II. Two-bedded rooms are suitable for all types of patients with the exception of the cases referred to above for whom single rooms are required.

III. Wards will generally be found useful for patients in Group B who are able to be up and about all day. They may also be used for some of the patients in Group A. If the wards are situated near a nurse's duty-room they may also be suitable for patients in Group B who require only a limited amount of nursing, and are not sufficiently ill to make the use of single-bedded rooms desirable.

IV. Shelters single or double bedded are suitable for patients in Groups A and B who are able to be up and about all day. Single-bedded shelters may also be useful for doubtful cases sent for diagnosis (Group D (1)) and for training patients with a view to the subsequent use of shelters at home.

Shelters.—Owing to difficulties in supervision and administration it is undesirable to have a large proportion of the sleeping accommodation in shelters, and as a rule provision of this kind should not exceed 10 per cent. of the total accommodation. Electric-bell communication should be provided between each shelter and the nurses' duty-room. These shelters may be used for training patients, about to leave the sanatorium, to sleep in shelters after their return home. It is desirable, therefore, that the shelter used should be simple in construction and similar to those lent out for use at home.

In deciding upon the kind and the proportional amount of the different types of sleeping accommodation the following general considerations should be borne in mind:—

1. It is desirable that patients in different stages of

disease should as far as practicable be treated in different wards or rooms.

2. It is desirable, in order to secure adequate and continuous attention to patients along with economy of staff, that, so far as practicable, all patients requiring special nursing should be treated in a section of the institution devoted to this purpose.

3. Subject to the foregoing considerations, there is no administrative or other difficulty in having patients in different stages of disease in the same pavilion.

The term "nursing section or pavilion" is used throughout this memorandum to refer to that portion of the institution set aside for the treatment of those patients who are not able to be up and about all day, but require a certain amount of special nursing or supervision, and the term "convalescent section or pavilion" to that portion of the institution allocated to patients who are able to be up and about all day and to take all their meals in the dining hall.

The special nursing section should be quiet and not liable to disturbance from the passing to and fro of other patients, and should be sufficiently near the central kitchen to permit easy service.

For a sanatorium, about 20 per cent. of the sleeping accommodation for patients should be in the special nursing section; for a combined institufion, it is desirable that about 36 per cent. of the sleeping accommodation should be so placed.

In a combined institution it is undesirable that any special pavilion or section should be used exclusively for patients with advanced disease. The pavilion or section used for these patients should also include accommodation in separate rooms for patients in Groups A, B, or D, requiring special nursing, rest in bed, or supervision. If this is done patients will not be led to suppose from the place where they are being treated that their cases are hopeless.

Types of Buildings.—The drawings which accompany the memorandum aim at giving an indication of the lines on which buildings for this purpose may be designed, and it is hoped that these may be of service to those who are engaged in the provision of institutions for tuberculous patients.

The following plans are appended to the memorandum:—

A. Block plan of a 100-bed sanatorium with three separate pavilions.
B. Block plan of a 100-bed sanatorium with a single pavilion.
C. Ground plan of staff block.
D. First floor plan of staff block.
E. Plan of dining-hall and kitchen block.
F. Plan of nursing pavilion for thirty-six beds.
G. Plan of convalescent pavilion for thirty-two beds.
H. Plan of two-storeyed pavilion for 100 beds.
I. Ditto (alternative design).

It will not usually be practicable to provide in a single one-storeyed building 100 beds in rooms or wards with beds arranged on one side only. Such an arrangement would necessitate a very long building, which may be expensive to construct, except on a level site, and which would be inconvenient to administer. For an institution for 100 patients it will often be preferable to arrange for three separate pavilions (Scheme I.); under some circumstances it may be found desirable to provide the accommodation in one two-storeyed building (Scheme II.).

If an institution for more than 100 beds is required, it will usually be preferable to adopt a modification of Scheme I., with at least three pavilions: one a special nursing section, and two separate pavilions for males and females respectively.

Schemes I. and II. have both been prepared upon the assumption that equal accommodation will be required for each sex. They may require modification in this respect according to local needs.

An arrangement is also shown by which ten beds between the duty-rooms in the special nursing pavilion in Plan F and in the central section of the ground floor in Plans H and I, ordinarily intended in each instance for five male and five female patients, can be utilised either entirely for male or entirely for female patients, as occasion may require. Some elasticity in the amount of accommodation for the two sexes is thus secured.

SCHEME I.

(Details of the various blocks are given in plans C, D, E, F and G.)

Scheme I. has been prepared to secure the advantages to be obtained by having one pavilion for patients requiring special nursing or supervision and two additional pavilions for male and female patients respectively, who are able to be up and about all day. This arrangement makes for efficiency and economy in nursing, and secures separation of the sexes more efficiently than is possible if all patients are treated in the same building.

It has been prepared for a combined institution and shows a special nursing pavilion for thirty-six patients, a pavilion for thirty-two male and a pavilion for thirty-two female patients. The plan can be modified so as to make it suitable for a sanatorium, by reducing the accommodation in the special nursing pavilion to about twenty beds and by increasing that in the separate pavilions for male and female patients.

The block plan shows that the central portion of the site is occupied by the staff block, kitchen and dining-hall block, and out-buildings, and by the special nursing pavilion; the eastern and western sections are occupied by the separate convalescent pavilions for male and female patients respectively. The portions of the site devoted to male and female patients are thus separated, so far as possible, by administrative and other buildings.

Special Nursing Pavilion (Plan F).—For convenience of service this pavilion is connected with the centrally situated kitchen and dining-hall block by a covered way about 60 feet in length. The plans show a central service kitchen. On either side of this kitchen is provided a nurses' duty-room and accommodation for ten patients in four double-bedded and two single-bedded rooms. It is intended that this central section should be used for those patients who are acutely ill. The north verandah will be useful for nurses attending on the patients. At the end of this verandah a hospital slop sink has been provided. It is desirable that arrangements should be made for heating some of these bedrooms.

At each end of these centrally situated rooms is a lavatory section; and, beyond this, in the wings is accommodation for those patients who require only a moderate amount of nursing. This accommodation may be provided either in double-bedded rooms or in small wards. The latter arrangement is shown on Plan F.

The section between the service kitchen and the duty-room on each side is practically cut off from the section beyond the duty-room. A small lavatory annexe situated behind the service kitchen, and containing two w.c.'s and one bathroom, has been provided for these sections. This arrangement makes it possible to use these sections entirely for male or entirely for female patients or for five patients of each sex. In the event of the sections being occupied by patients of different sexes, each section would have a separate w.c., but the bathroom would be common to the two.

Convalescent Pavilions (Plan G).—The sleeping accommodation is shown partly in double-bedded rooms and partly in a small ward. As patients occupying these pavilions will be able to take their meals in the dining hall no provision has been made for the service of food, and the pavilions need not be situated close to the central kitchen block. No provision has been made in these pavilions for special nursing, as it is assumed that patients requiring this will be transferred to the special nursing pavilion.

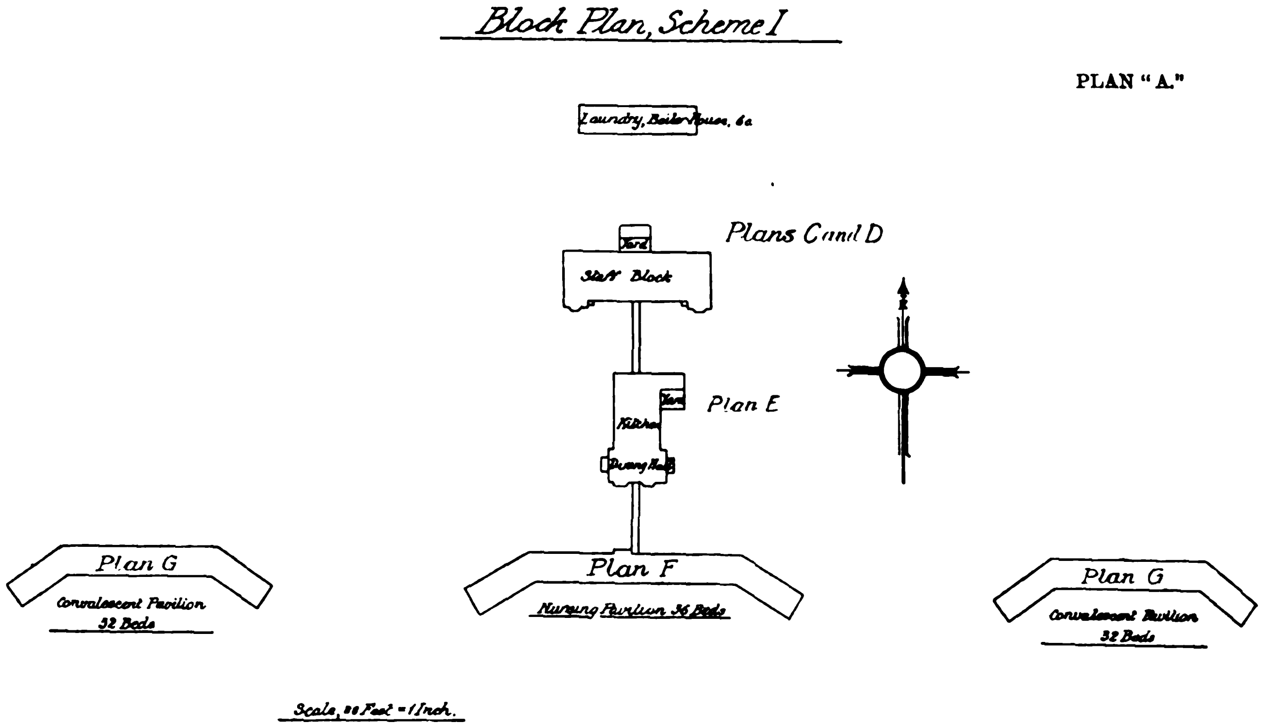
SCHEME II.

(Details of the various blocks are given in plans C, D, E, H and I.)

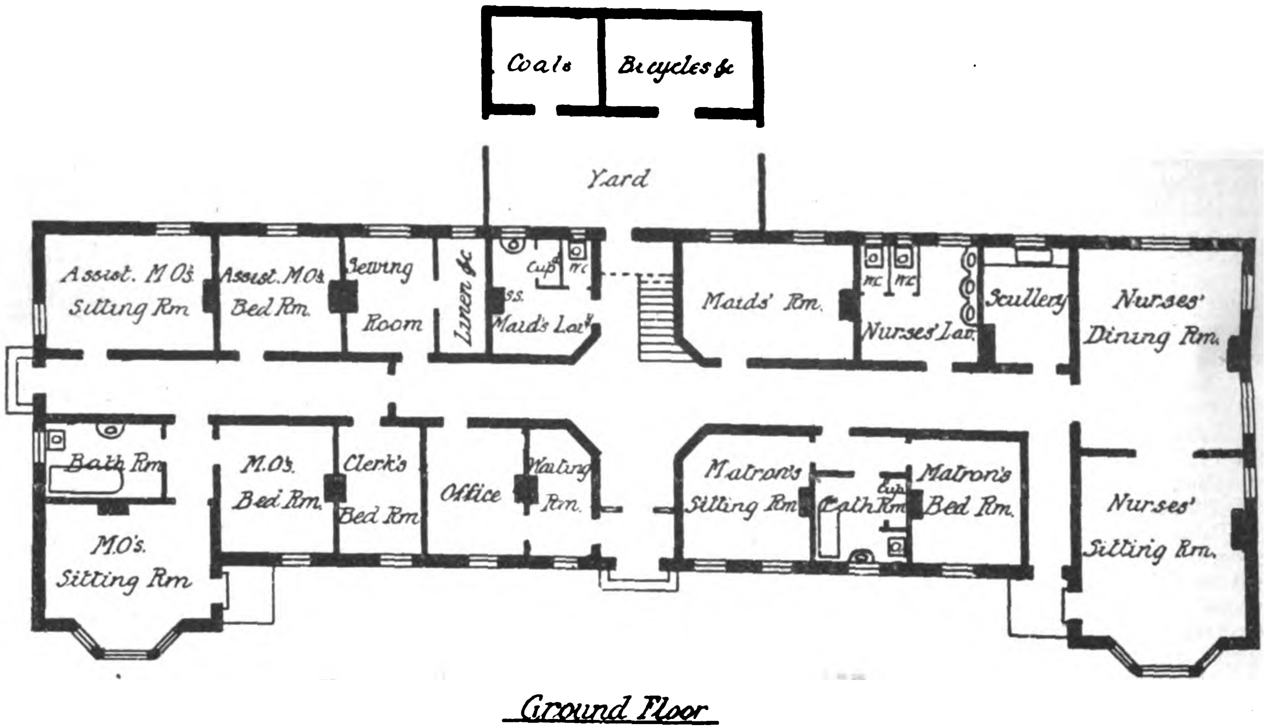
Plans of a two-storeyed building have been prepared to meet those cases where local circumstances make it desirable to provide the whole of the sleeping accommodation for patients in a single building. The plans have been prepared for a sanatorium. If it is proposed to use such a two-storeyed building as a combined institution, the plan can be modified to secure more accommodation on the ground floor, within the special nursing section.

Provision has been made for a centrally situated special nursing section on the ground floor. The general arrangement of this section is similar to that of the special nursing pavilion included in Scheme I. Arrangements have been made for the accommodation of patients needing little nursing supervision on the first floor and in the wings on the ground floor. As it is suggested that the first floor shall be used only by patients who are able to be up and about, only narrow balconies for access to the rooms have been provided in order that the lighting and ventilation of the ground floor rooms may not be materially interfered with.

It will be noted that the plan of the first floor differs from that of the ground floor, only one duty room having been provided.


Block Plan, Scheme I
Laundry, Boiler House, &c.
Yard
Staff Block
Plans C and D
Yard
Kitchen
Dining Hall
Plan E
Plan G
Convalescent Pavilion
32 Beds
Plan F
Nursing Pavilion 36 Beds
Plan G
Convalescent Pavilion
32 Beds
Scale, [illegible] Feet = 1 Inch.

PLAN "A."


Coals
Bicycles &c
Yard
Assist. M.O's Sitting Rm
Assist. M.O's Bed Rm
Sewing Room
Linen &c
Cup
W.C.
S.S.
Maids' Lav.
Maids' Rm.
W.C.
W.C.
Nurses' Lav.
Scullery
Nurses' Dining Rm.
Bath Rm
M.O's Sitting Rm
M.O's Bed Rm.
Clerk's Bed Rm
Office
Waiting Rm.
Matron's Sitting Rm
Bath Rm
Cup
Matron's Bed Rm.
Nurses' Sitting Rm.
Ground Floor

STAFF BLOCK.

PLAN "C."

General Observations.—Space for patients and height of walls.—The accommodation should be so arranged that a floor space of at least 64 square feet will be available for each patient; the distance between the centres of the heads of any two adjoining beds should not be less than 8 feet measured along the wall behind the heads of the beds.

Patients' rooms should not be less than 8 feet 6 inches high; wards should be higher, but may be carried partly into the roof and ventilated by openings in the gable end.

Doors should be made on the "stable door" pattern, so that in inclement weather the lower portion may be closed while the upper portion is left open. They should be constructed in the form of French casements with a clear opening of not less than 3 feet 6 inches, so that beds may easily be wheeled through them.

Windows should preferably be of the casement pattern and be hung "to fold" without mullions.

Baths should be provided on a scale of about one to twelve patients. They may be of enamelled iron and should be fitted with large taps and wastes to facilitate filling and emptying. Spray baths may also be provided.

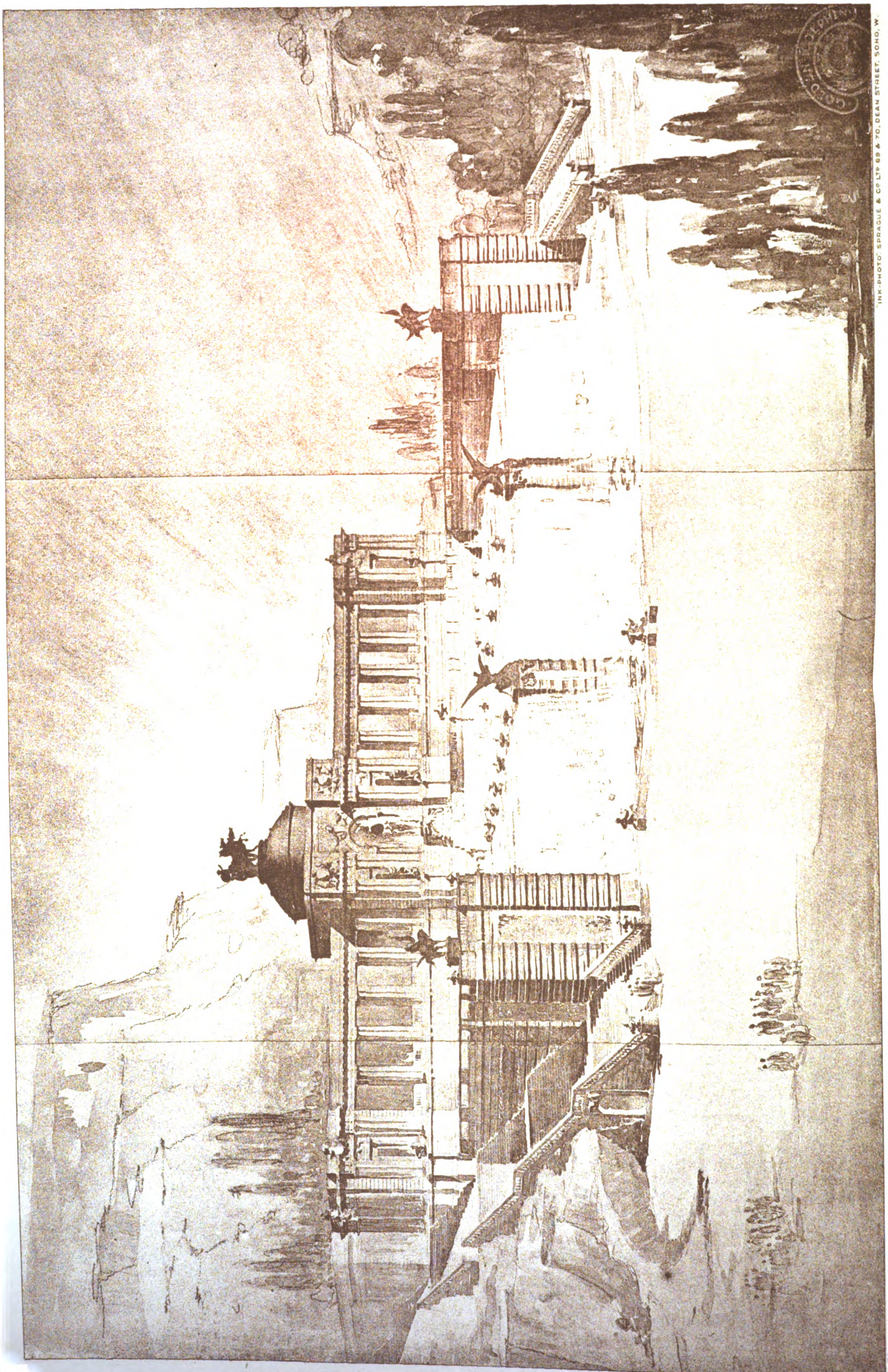
There should be at least one water-closet for every twelve patients. Hospital slop sinks should be provided in the special nursing pavilion.

Every institution should have ample storeroom accommodation for linen, clothes, &c., and lockers for boots and shoes. The provision of some arrangement for drying patients' clothes will also be advisable.

Day Shelters.—The question as to whether day shelters shall be provided will require consideration for each proposed institution: if verandah accommodation is not adequate, day shelters will be needed. These should be of inexpensive construction.

Recreation Rooms.—In view of the importance of continuous open-air treatment of patients, it is unwise to encourage them to collect in a recreation room, except for a very limited time, or on special occasions. In view of these considerations the dining-room has frequently been regarded as sufficing for the use of patients for recreation, lectures, &c. If it is considered necessary to provide special recreation rooms for use on wet days, or in winter evenings, these may conveniently be added at the ends of the pavilions for convalescent patients.

Kitchen and dining-hall accommodation (Plan E).—The block containing the patients' dining hall and kitchen for patients and staff should preferably be a one-storey building, which should be placed near to the administrative block and to the rooms for patients requiring special nursing. It



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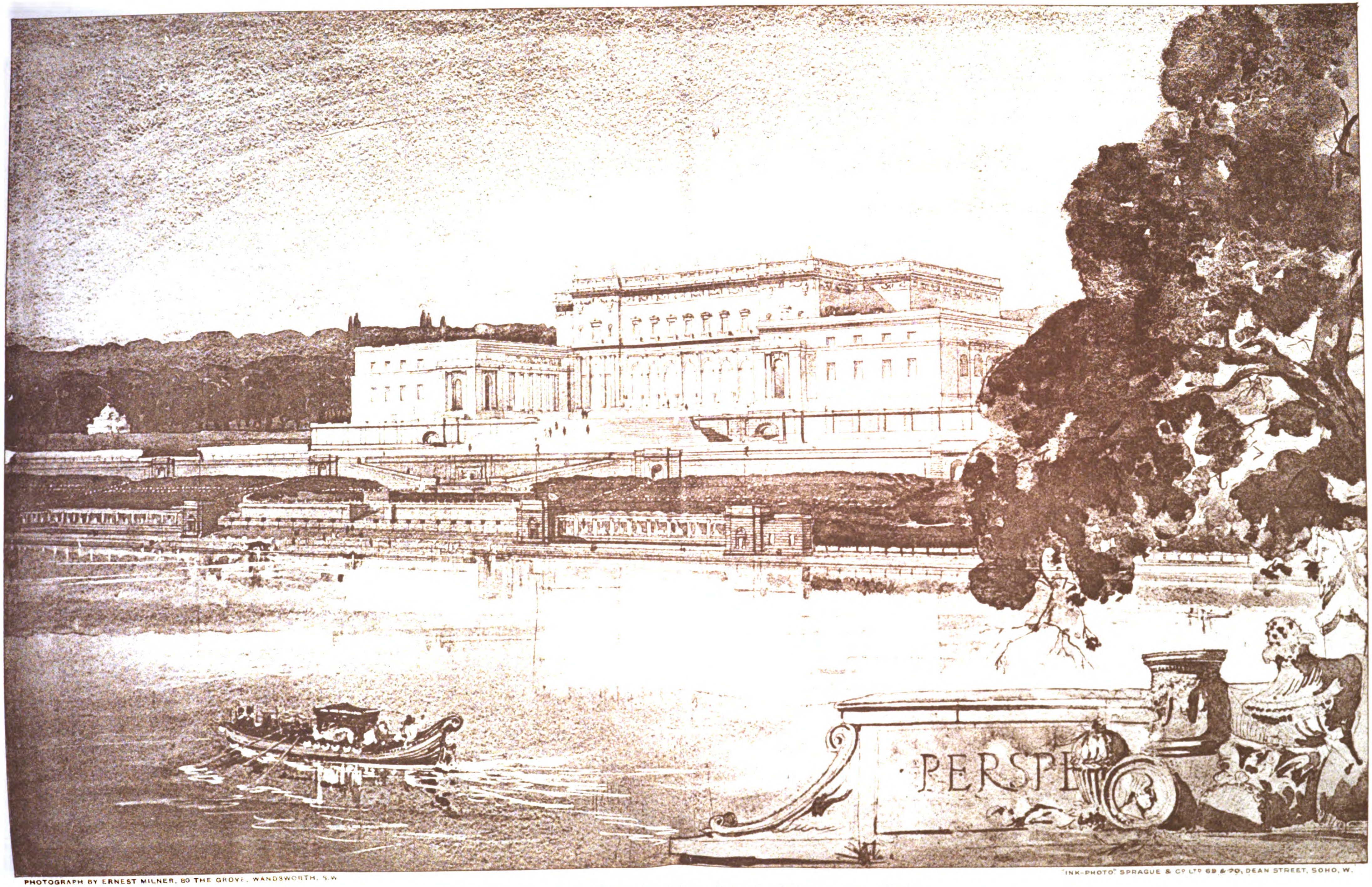
By Mr. TRENWITH WILLS.



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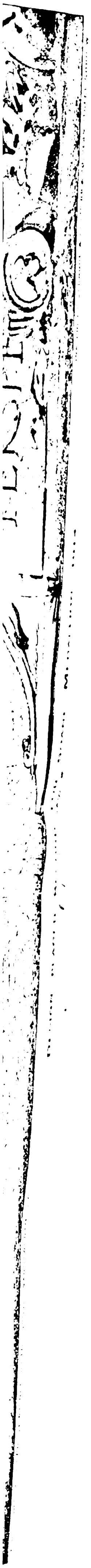

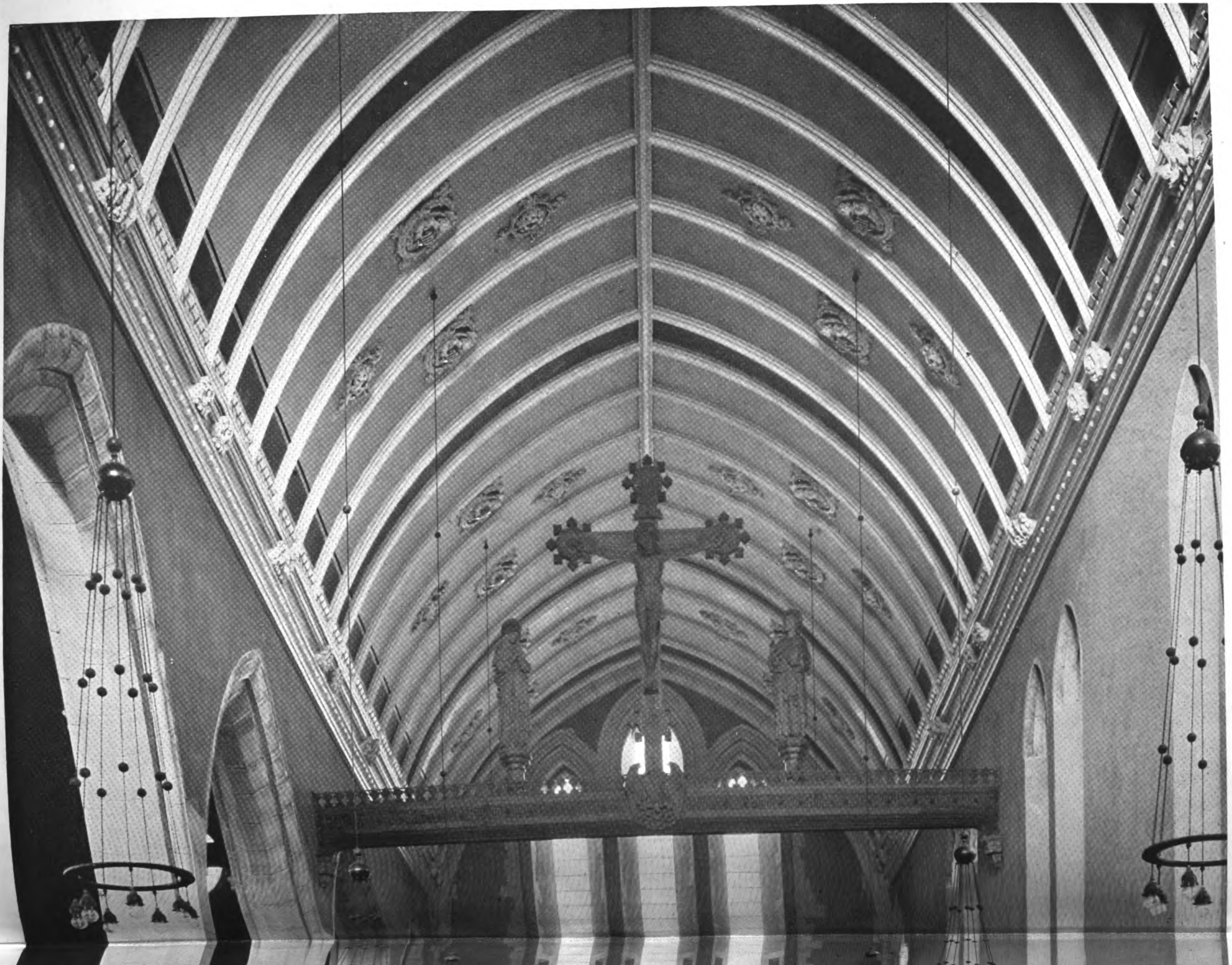

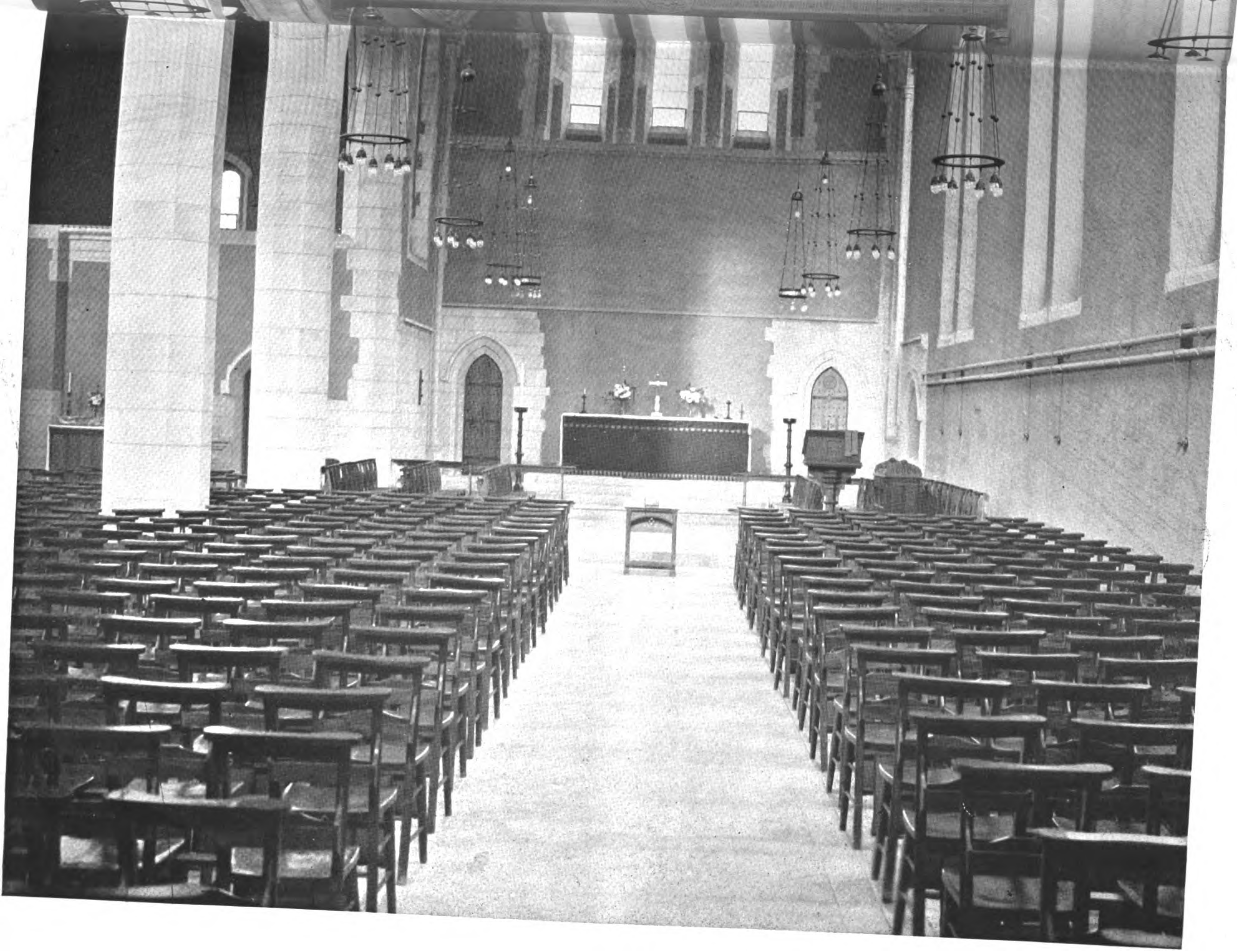

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MR. H. P. BURKE DOWNING, F.R.I.B.A., Architect.

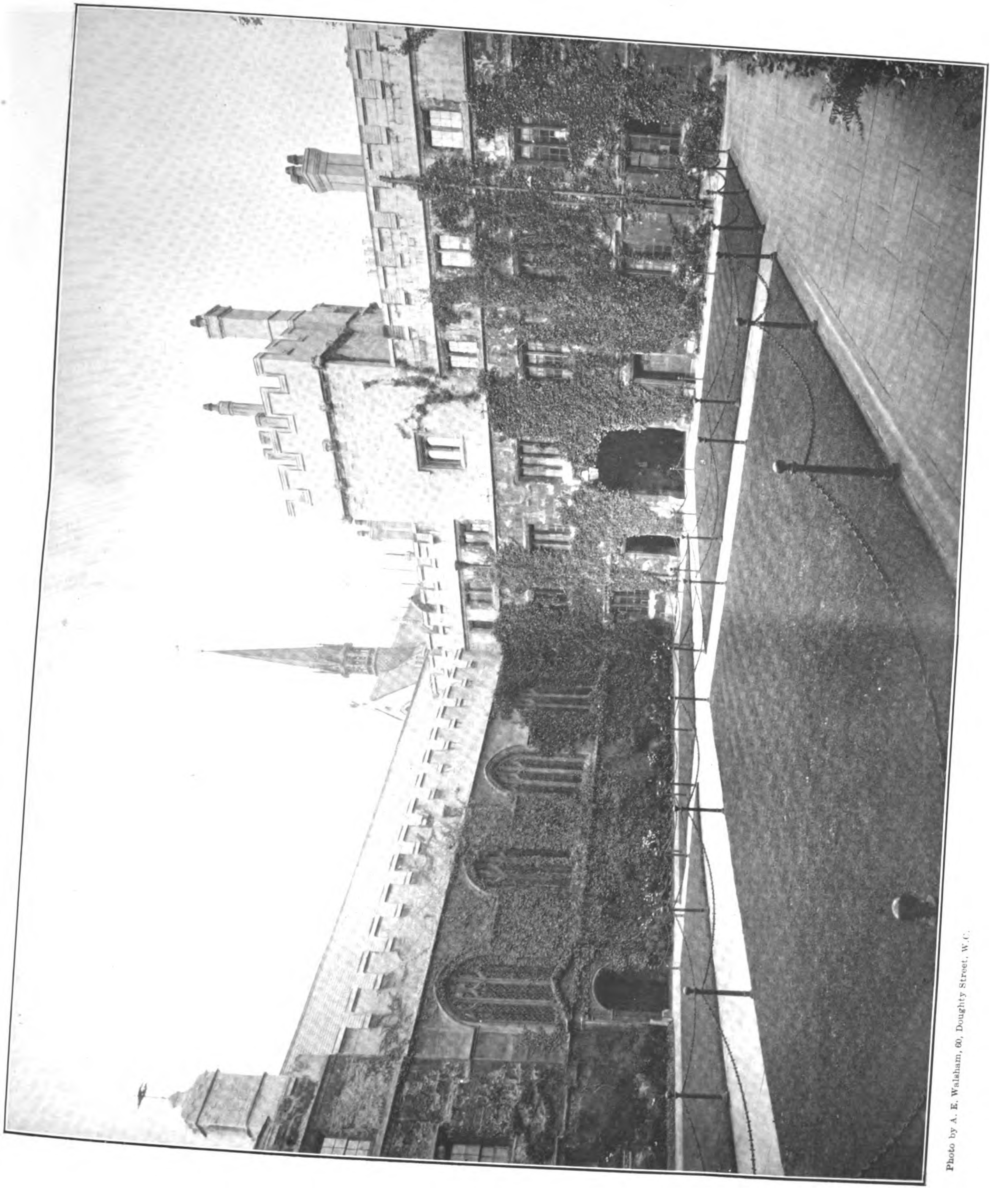

Photo by A. E. Walsham, 60, Doughty Street, W.C.

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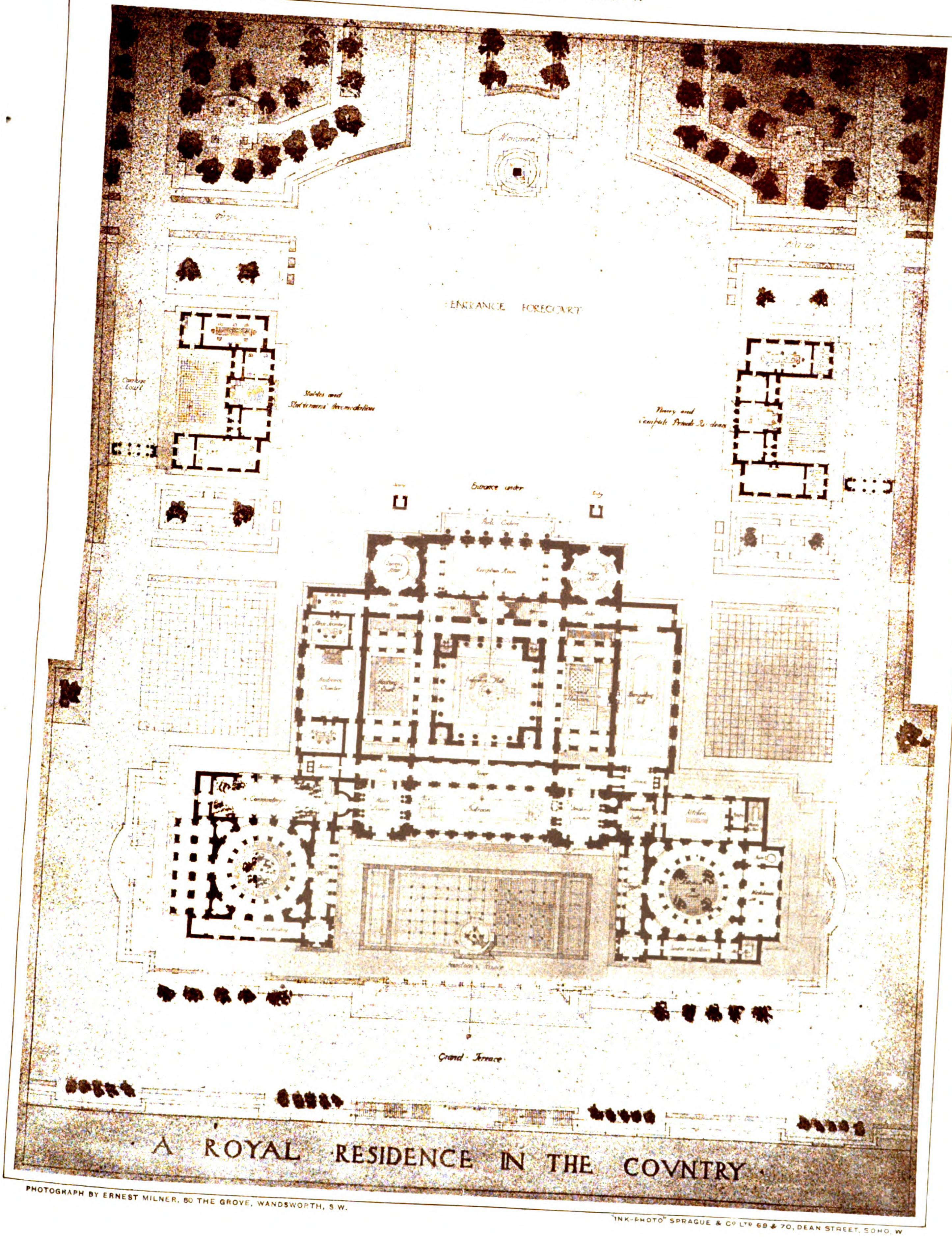
Sprague & Co., Ltd., Printers, 69 & 70, Dean St., Soho, W.

The Architect, Feb. 20th 1914.


Monument
Entrance Forecourt
Carriage Court
Stables and Stablemens' Accomodation
Nursery and Complete Private Residence
Entrance under
Porte Cochere
Reception Room
Saloon
Kitchen
Grand Terrace
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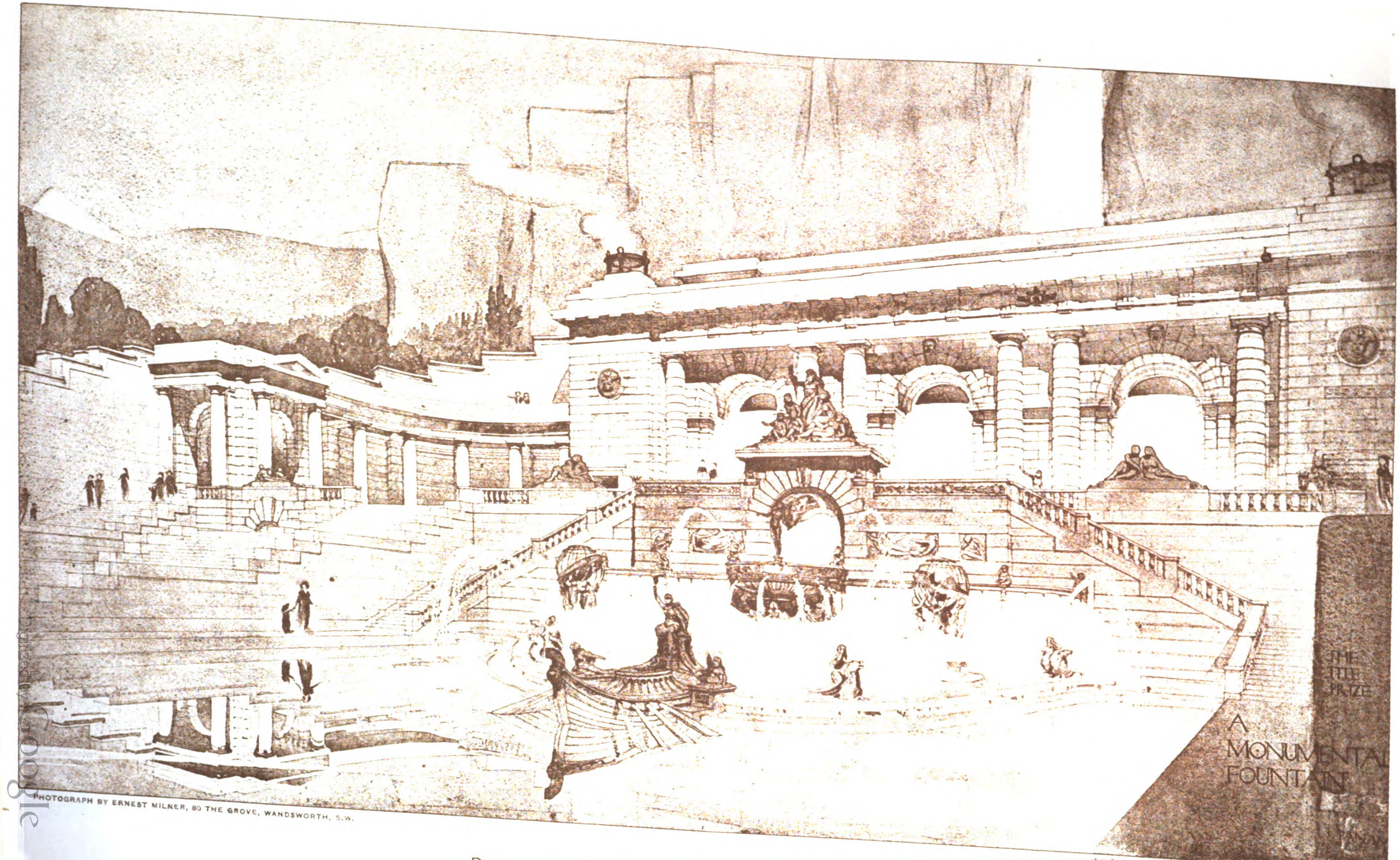
By Mr. H. CHALTON BRADSHAW, Rome Scholar in Architecture.

The Architect, Feb 20th 1914


THE TITE PRIZE
A MONUMENTAL FOUNTAIN

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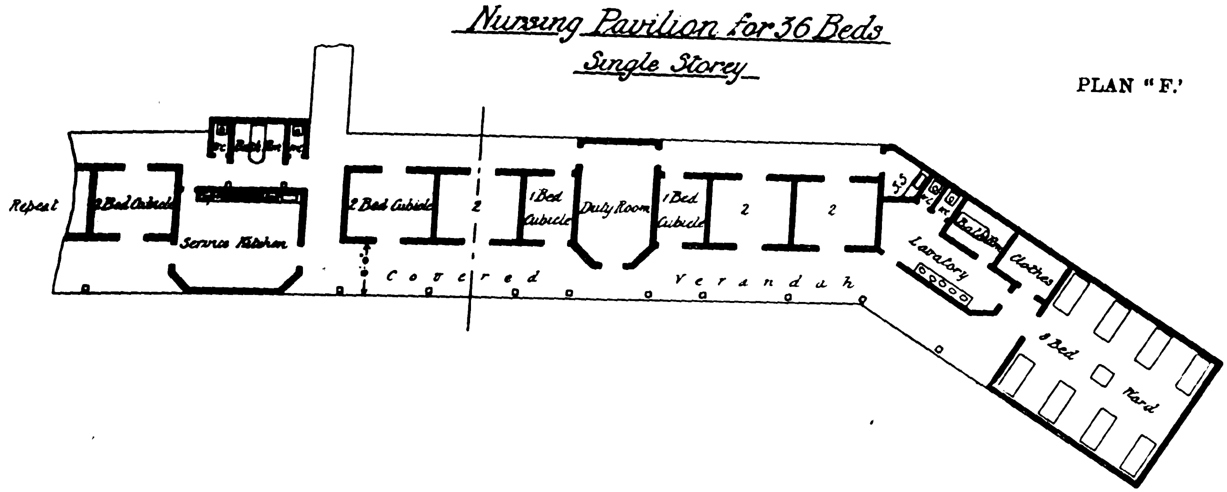
DESIGN PLACED SECOND FOR THE TITE PRIZE, 1914.

By Mr. A. G. SHOOSMITH.

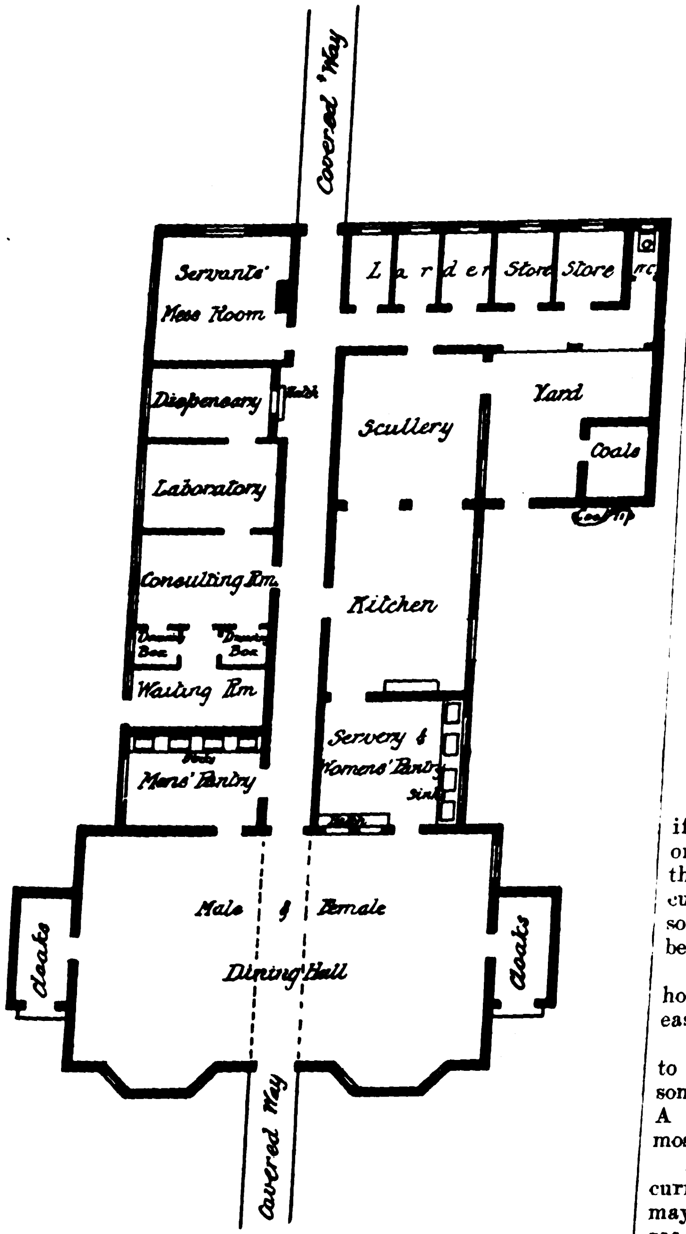

Nursing Pavilion for 36 Beds
Single Storey
Repeat
2 Bed Cubicle
Service Kitchen
2 Bed Cubicle
2
1 Bed Cubicle
Duty Room
1 Bed Cubicle
2
2
Covered Verandah
Lavatory
Bath Rm
Clothes
8 Bed Ward

PLAN "F."

may be connected with the special nursing pavilion, if desirable, by a covered way.

The dining hall should, if practicable, have a southerly aspect.

The consulting-room, dispensary, and laboratory, which should be centrally situated, may also conveniently be included in this block.


Covered Way
Servants' Mess Room
Larder
Store
Store
W.C.
Dispensary
Bath
Laboratory
Consulting Rm.
Dressing Box
Dressing Box
Waiting Rm
Scullery
Yard
Coals
Coal Lift
Kitchen
Servery & Womens' Pantry
Sink
Mens' Pantry
Male & Female
Dining Hall
Cloaks
Cloaks
Covered Way

DINING HALL AND KITCHEN BLOCK. PLAN "E."

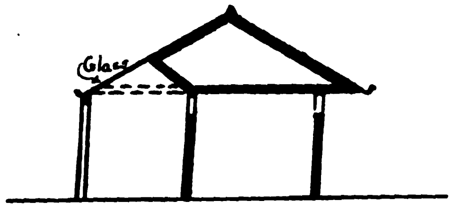
Unless other accommodation is available for the male domestic staff, provision may be made for them in an upper floor of the kitchen and dining-hall block above the store-rooms, &c.

Staff blocks (*Plans C and D*).—The position of this building should be selected with a view to giving the greatest facilities for economical service and administration. The accommodation for a sanatorium with 110 beds will include medical officer's quarters, offices, matron's quarters, dining-room for nurses, bedroom accommodation for the nurses and servants. Each nurse should have a separate bedroom of an area of about 100 square feet. Usually one nurse will be required for twelve patients; but more will be needed if a considerable number of patients with advanced disease are being treated. Baths and water-closets should be provided in the proportion of not less than one to each twelve nurses or servants.

It is desirable that the principal cooking for the staff should be done in the central kitchen block, so that a separate fully-equipped kitchen is not required in the administrative block. A small kitchen pantry with food store is shown on the plan adjoining the nurses' dining-room. This could be provided with a small range or gas-cooker for minor cooking.

Out-buildings.—The laundry should consist of receiving-room and washhouse, drying-room, and ironing and delivery room. Mortuary accommodation may be provided in the same block.

The amount of boiler-house accommodation will depend on the amount of steam required for laundry, disinfector, heating and hot-water supply and for driving dynamos



Cross Section

PLAN "F."

if electric current is to be generated in this way for lighting or other purposes. Special provision should be made for the sterilisation of sputum and for the cleansing of sputum cups. Unless suitable arrangements are available elsewhere, some form of disinfector for clothing and bedding should be provided.

Hot-water Supply.—An ample and constant supply of hot water is desirable, and the system should be capable of easy extension.

Heating and Lighting.—It will usually be unnecessary to heat the patients' quarters excepting the dining hall and some of the rooms for patients requiring special nursing. A system of low-pressure hot-water heating will be found most economical for this purpose.

Electric lighting should be employed where electric current is available or can be produced economically. It may be necessary to use coal-gas, acetylene, or petrol-air gas: these illuminants have been found to be fairly satisfactory for use in sanatoria if suitable fittings are provided and adequate precautions are taken against fire.

Construction.—Where, owing to local circumstances, the use of brickwork would be economical, cheap bricks may often be employed faced externally, if necessary, with rough-cast

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or cement. Walls in exposed positions should be of hollow construction.

In some districts other materials may be less expensive and may be employed, such as steel framing carrying terra-cotta slabs, or concrete slabs or blocks plastered internally and cemented externally, or timber-framing lined internally with asbestic sheeting or expanded metal lathing plastered with a hard setting plaster, rough-cast or coated externally with weather boarding chemically treated. The roofs should be of simple construction and may be covered with slates, tiles, or asbestic material. The floors of verandahs should be of impermeable material.

A HOUSE FAMINE.

In the House of Commons debate on the Address in reply to the Speech from the Throne Mr. Royds said that he had asked a very large number of builders how the land taxes had affected the building trade in their district, and had received replies from 500. That was not a secret inquiry, and was perfectly fair and above-board. It was impossible publicly to disclose the names of all those builders, because many of them said that in consequence of the Budget they were on the verge of bankruptcy. But the Chancellor of the Exchequer or anyone he might choose to appoint would be at liberty to see printed copies of the replies. They were all substantially to the same effect, and stated that the Chancellor's legislation had destroyed credit and frightened mortgagees, and had seriously affected the building trade.

The result was that the country was practically approaching a house famine. He had made inquiries of the town clerks of forty of the largest towns in England as to the number of uninhabited houses. Unless something was done by the end of this year there would hardly be an empty house in England. In 1901 there were 56,000 uninhabited houses in those forty towns; in 1911, 47,740; and in 1913—about six months ago—the number went down to 24,000.

That was a most alarming state of affairs. The population was being driven into insanitary and back-to-back dwellings. Slum clearances could not be made because there were no houses to put the people into meantime. The credit and security of land could only be restored by repealing the measure that destroyed it.

ON DRAWING INKS.

We have sometimes been asked to say what is the best drawing ink. Nowadays this means the best kind of ready-prepared liquid ink. Our answer has been that to some extent it depends on the draughtsman and what he wants to draw, but after an extensive experimental acquaintance with many varieties we pin our faith to Higgins', as we find do the majority of our professional friends; white label, when we want a waterproof ink, and red label for fine work and other times when waterproof quality does not matter. In our pupilage days we used to make our own bottle ink by rubbing up the stick of Indian or Chinese ink—gold dragon if possible—and adding a drop or two of liquid ammonia. In one office in which we worked the principal gloried in the possession of a cast-lead saucer, in which we ground the ink, the strong point being that it took the glossy shine out of the ink without any apparent disadvantage. Stephens' ebony stain is fancied by some we know for drawing, but we have not tried it. In buying bottle ink we prefer the 8-ounce size, as the small size is, to our thinking, not economical, and is less comfortable.

BUILDING PROGRESS IN THE PROVINCES AND SUBURBS.

A LIST OF WORKS PROJECTED OR COMMENCED.

(N.B.—Local Authorities, architects, and others are invited to submit full particulars for insertion in this weekly list. Where districts are not entered against names of architects and builders the address is as a rule local.)

ENGLAND.

Cambridgeshire.

March.—Business premises: additions and alterations, for the Peterborough Co-operative Society. Messrs. Townsend (A.R.I.B.A.) & Fordham, architects, Cross Street, Peterborough.

Cheshire.

Ellesmere Port.—Wesleyan Methodist Hall (500 sittings) and Schools (for 550 places), Whitby Road. Mr. A. Brocklehurst, architect, 30 Brown Street, Manchester. Messrs. Mayers, Sons & Co., contractors, Canal Side, Chester.

Cornwall.

Falmouth.—Tea-house. Gyllyngdune: enlargement and improvement, for the Corporation.

Cumberland.

Cockermouth.—Post Office: enlargement and alterations (£500).

Derbyshire.

Bamford.—Parish Church: Hopkins Memorial Vestry.

Derby.—Carnegie Library, London Road.

Picture House, Babington Lane: extension.

Eckington.—Halfway Council School: re-modelling (£2,000).

Smalley.—Public Elementary School for 150 places.

Devon.

Bratton Clovelly.—Public Elementary School, Boasley Cross, for fifty places.

Dartmouth.—Boys' Council School (£4,900).

Kingsbridge.—Grammar School for 120 scholars (£9,000).

Sidmouth.—School premises. Mr. P. Morris, A.R.I.B.A., County Education architect, 1 Richmond Road, Exeter.

Totnes.—Drill Hall and Headquarters, for the Royal 1st Devon Yeomanry and 5th Batt. Devon Regiment. Messrs. Ellis, Son & Bowden, F.S.I., architects, Bedford Chambers, Exeter.

Durham.

Crookhill.—Proposed Church Hall and Sunday School.

Durham.—Workhouse: infirmary.

Gateshead.—Public Elementary Voluntary School (for 600 places), Hawk's Road.

Hebburn.—Hospital: extension. Mr. H. Patterson, Council surveyor.

Lanchester.—Smallpox Hospital. Mr. G. T. Wilson, architect, 22 Durham Road, Blackhill.

Oakenshaw Colliery.—Working Men's Social Club, &c.

Sunderland.—Eye Infirmary, Burdon Road.

Willington.—Social Club, Commercial Street: additions.

Essex.

Grays.—Hospital: fever pavilion. Mr. G. M. Shiner, A.R.I.B.A., architect, The Gate House.

Sible Hedingham.—Smallpox Hospital (£1,500).

Gloucestershire.

Avonmouth.—Cold Stores: additions and alterations. Messrs. R. Wilkins & Sons, contractors, 20 Bishop Street, St. Paul's, Bristol.

Avonmouth Docks.—Office accommodation, for Messrs. T. Borthwick & Sons.

Workshops extension and erection of offices, for Messrs. J. Shearman & Co.

Bristol.—Proposed Council School, Baptist Street, Baptist Mills.

Winchcombe.—Twelve cottages, Greet Road, for R.D.C. (£2,300).

Hampshire.

Southampton.—Baptist Church buildings, Church Street, Shirley. Messrs. Spalding & Myers, F. and A.R.I.B.A., architects, 36 and 37 King Street, London, E.C.

Hertfordshire.

Stevenage.—Police Station and Court House (£5,000). Mr. U. A. Smith (of Hatfield), County Surveyor.

Tring.—House, Bulbourne Road, for Mr. J. Bushell.

Motor-house and Stables, Miswell Farm, for Lord Rothschild.

Isle of Wight.

East Cowes.—Workmen's dwellings.

Kent.

Plaxtol.—Six cottages, for Mr. J. Allcorn.

Lancashire.

Bolton.—Houses, Greenmount Lane, Heaton, for Messrs. W. H. Morris & Sons.

Eighteen houses, Hulton Lane, for Mr. J. J. Harrison.

Semi-detached houses, Church Road, Smithills, for Messrs. Radcliffe.

Nine houses in Normanby Street, Hulton, for Messrs. Hughes Bros.

Prospect Mill, Prospect Street: additions, for Messrs. Barlow & Jones, Ltd.

Offices, Park Hill Street: extension, for Messrs. Townson & Sons, Ltd.

Burnley.—Elementary Schools, Lionel and St. Cuthbert Streets.

Burscough.—Two villas, Turnpike Road, for Messrs. Turner & Billington.

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THE EVENT OF 1914.

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ENGLAND—*continued.*

LANCASHIRE—*continued.*

Crompton.—Six cottages and house with shop, Duchess Street, for the Duchess Spinning Company.

Five shops, Market Street, for Mr. J. Milne.

Rutland Mill: cotton warehouse.

Failsworth.—The "Streetbridge" Inn: rebuilding. Mr. A. Ogden, architect.

Gregson's Bridge.—Stables, for Mr. J. Gradswell.

Liverpool.—Church, Derby Lane, Old Swan. Mr. G. Gilbert Scott, F.R.I.B.A., architect, 7 Gray's Inn Square, London.

Lytham.—Six houses, Mythop Avenue, for Mr. J. W. Haworth.

Manchester.—Picture Theatre, Billiards Hall, &c., Brick Street, West Gorton. Messrs. J. Stott & Sons, architects, 5 Cross Street.

R.C. Church, Longsight (£7,100).

Prestwich.—Five hundred houses, Poleshill Hall Estates. Mr. P. Hathersall, architect, Bury New Road.

Radcliffe.—Thirty houses and two shops, for Radcliffe and Pilkington Co-operative Society, Ltd. Mr. J. T. Proffitt, architect, 2 Mount Street, Manchester.

LEICESTERSHIRE.

Coalville.—Mining Institute for the Technical Education Committee.

Hinckley.—Sixteen workmen's dwellings, Rugby and Coventry Roads (£2,720).

LINCOLNSHIRE.

Grimsby.—Workhouse: extensions and improvements (£11,600).

Lincoln.—Two houses, Kingsway, for Mr. W. F. Berry.

Sixty-two houses, Bathurst Street, for Mr. W. T. Priestley.

School, Friars' Lane: additions for the Trustees.

Council School (for 700 places), Mount Street (£9,250).

Stamford.—Council School. Council surveyor.

Ulceby.—The "Brocklesby Ox" Inn, for Messrs. Hewitt (Tower Brewery of Grimsby).

MONMOUTHSHIRE.

Bedwellty.—Isolation Hospital.

NORFOLK.

Acle.—Working-class dwellings (£750).

NORTHAMPTONSHIRE.

Northampton.—Post Office, St. Giles' Street. Mr. A. A. Clarke, builder, 65 Waterloo.

NOTTINGHAMSHIRE.

Nottingham.—All Saints' Parish Room and Sunday schools, Lenton Boulevard: rebuilding.

OXFORDSHIRE.

Headington.—Cinematograph Theatre, London Road, for Mr. H. Froude.

SHROPSHIRE.

Clun.—Secondary School.

SOMERSET.

Frome.—Victoria Hospital: extensions and improvements (£1,250).

STAFFORDSHIRE.

Newcastle-under-Lyme.—"Central" Hotel: alterations.

Stafford.—Borough Hall: alterations (£2,500). Borough engineer.

County General Infirmary: laundry.

Factory, St. Patrick's Place: alteration for Messrs. Burton & Riley.

Premises, Marston Road: extension for Mr. T. Lloyd.

Walsall.—125 working-class houses.

Willenhall.—Public baths (£2,000). Council surveyor.

SURREY.

Farnham.—School of Art: enlargement for the County Education Committee.

Hindhead.—Licensed premises, Beacon Hill, for the Surrey P.H. Trust Co., Ltd.

Ripley.—Six cottages, for Lady Lovelace.

Tadworth (near).—Workmen's cottages for Epsom R.D.C.

SUSSEX.

Horsham and Shoreham-by-Sea.—School Clinics and Tuberculosis Dispensaries (£1,000 in all).

WARWICKSHIRE.

Birmingham.—Public Elementary School (for 1,200 places), Nansen and Naseby Roads, Saltley.

Stratford-on-Avon.—Thirty-six Council cottages.

YORKSHIRE.

Bradford.—Infirmary.

Proposed P.M. Chapel, Great Horton (£2,000).

Highburton.—Workmen's dwellings, for Kirkburton U.D.C.

Saltburn-by-the-Sea.—Isolation Hospital.

Scalby.—Twelve workmen's dwellings (£2,280).

Sheffield.—Baptist Church, Hillsborough (£3,000).

WALES.

Aberystwyth.—Business premises, Northgate Street. Mr. A. Evans, architect, North Road.

Cardiff.—Stables and garage, Cowbridge Road. Messrs. Thomas & Harding, architects, Queen's Chambers.

SCOTLAND.

Buckie.—Post Office.

Cambuslang.—West Parish Church: re-construction of halls and vestry.

Giffnock.—Church and halls (£2,700).

Glasgow.—Club buildings, M'Culloch Street: addition for Kingston Bowling Club.

Camlachie Goods Station: offices for N.B.R. Co.

Premises, Caxton Street: additions for Messrs. Barr & Stroud, Ltd.

No. 54 Great Clyde Street: buildings for Messrs. Symington & Co.

No. 107 Kelvinhaugh Street: offices and workshop, &c., for Messrs. J. Weston & Co.

Largs.—Offices on the Pier for the G. & S.W.R. Co.

Paisley.—South U.F. Church: halls (450 sittings), £1,900.

Tarbert.—Hotel: alterations. Mr. J. Campbell, contractor.

Tranent.—Picture House for Mr. Wallace.

Troon.—Tenement of houses in Bank Street and Titchfield Road, for Mr. D. Jones (of Kilmarnock), £1,900.

PATENT SPECIFICATIONS PUBLISHED, FEBRUARY 12, 1914.

Selected and abridged by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

No. 1,108. Jan. 15, 1913.—M. S. Turner, 10 College Road, Windermere, Westmorland. Hot water system.

1,630. Jan. 20, 1913.—William Thompson, 54 Duke Street, Birkenhead. Pressed panels or imitation carvings.

1,678.—Jan. 21, 1913.—V. S. Needham, 5 The Hermitage, Richmond, and F. G. Needham, 48 Brodrick Road, Upper Tooting, S. Apparatus for heating water.

2,091. Jan. 25, 1913.—B. C. Wotton, 381 London Road, Thornton Heath, Surrey. Fireproof windows.

2,535. Jan. 31, 1913.—Albert Scott, Wolf Hall, 195 Alexandra Road, Acock's Green, Birmingham. Glass roofs, skylights, and the like.

3,195 Feb. 7, 1913.—John Shanks, Tubal Works, Barrhead, Renfrewshire. Baths.

3,697. Feb. 13, 1913.—E. C. M. Willmott and T. E. Smith, 29 St. Mary Street, Cardiff. Apparatus for casting concrete walls, floors, and roofs.

3,906. Feb. 15, 1913.—D. W. Oliver, 120 Bunhill Row, E.C. Window sashes.

4,576. Feb. 22, 1913.—Rudolf Ochschism, Eisenbahnstr 16, Berlin. Grinding and polishing machines for wood, marble, and the like.

6,697. March 18, 1913.—Richmond Ettling, 48 Stanhope Road, Swanscomb, and William Chappell, 58 Parrock Street, Gravesend. Artificial stone, concrete, and the like, and materials therefor.

6,963. March 22, 1913.—H. M. Hunt and Fred Leakey, both of 3 and 5 Rosemary Street, Bristol. Automatic locking device for lift-well gates.

7,465. March 29, 1913.—T. J. Grace, Empire Street, Haberfield, N.S. Wales. Expanding gate.

8,082. April 7, 1913.—F. C. Jones, 216 Upper Thames Street, E.C. Device for the preventing of rattling caused by movement of window sashes.

13,749. June 13, 1913.—E. A. Berry, of Z. A. Berry & Sons, Regency Street, Westminster. Water-heating means.

15,361. July 3, 1913.—Heinrich Bruning, Mosleshohe, near Oldenburg, Germany. Device for regulating the flow of rainwater from roofs.

17,447. July 30, 1913.—Frederick Thackeray, 3 Cambrian Terrace, Gwaelodygarth Road, Merthyr Tydfil, Glam. Sewers, conduits, and culverts made with curved slab linings fixed together *in situ* and cased with concrete *in situ*.

18,093. Aug. 8, 1913.—D. Burkhard-Abegg, Feldbacham Zurichsee, Switzerland. Reinforced concrete structures.

18,467. Aug. 14, 1913.—J. R. Clay, 1 Worcester Road, Bootle. Repairing cracked or damaged pipes.

23,433. Oct. 16, 1913.—J. H. Moore, 200 Woodstock Road, Oxford. Earth closets.

THE GREAT FIRE AT BLYTH

"Poilite" (Asbestos-Cement) Ceilings.

BRITISH MAKE.

REMARKABLE TESTIMONY.

From the "NEWCASTLE DAILY JOURNAL," January 20.

"In the building a considerable amount of damage was done, and, but for the fact that an asbestos ceiling had been put in between the ground floor and the first storey, in all probability it, too, would have shared the fate of the older premises."

From the "NEWCASTLE EVENING MAIL," January 19.

"Fortunately for the safety of this new building, it has been fitted with fireproof ceilings."

From CAPTAIN NAISBITT, Chief of the Urban District Council Fire Brigade.

Messrs. Bell's United Asbestos Co., Ltd., Blyth : January 23, 1914.
Dean Street, Newcastle.

GENTLEMEN,—With reference to the fire which occurred at Mr. James Marshall's Northumbria Confectionery Works in this town on Monday last, it is a great pleasure to me to be able to testify to the satisfactory manner in which your Asbestos Cement Sheets behaved under the very severe test to which they were put.

Had the ceiling of the ground floor in the large new building not been lined with these sheets, I am firmly of opinion that, in spite of all our efforts, nothing could have saved the whole of this building from being involved.

The flames from the old premises, which were completely gutted, extended throughout the whole length of the ground floor, which is about fifty feet long, and the heat was so intense that many of the windows were melted, and the door at the extreme end was badly burnt.

On examination after the fire the sheets were found to be intact, and the floor joists to which they were nailed, as also the wood flooring above, appeared to be undamaged.

You may make use of this letter in any way you think fit, as I consider that the above facts cannot be too widely known in the interests of property owners generally.

Yours truly,
(Signed) FRED NAISBITT, Captain U.D.C. Fire Brigade.

From Mr. MARSHALL, Owner of the Buildings.

Northumbria Confectionery Works, Blyth :
January 23, 1914.

Messrs. Bell's United Asbestos Co., Ltd.,
30/32 Dean Street, Newcastle-on-Tyne.

DEAR SIRS,—In reply to your query, I am glad to express my entire approval at the way in which your "Poilite" Sheets acted in connection with the recent fire at my premises.

It is my opinion that the presence of these sheets enabled the firemen to confine the fire to the ground floor of my large new premises, thus saving them from being burnt down, as was the case with the adjoining older premises.

I readily give my permission for you to publish this letter if you desire.

Yours faithfully,
(Signed) JAMES MARSHALL.

It should be noted that the fireproof ceiling to which reference is made in the foregoing consisted of "Poilite" Sheets only 5-32" thick, nailed direct to wood, nothing whatever of a fireproof nature being present between the sheets and the wood flooring above.

Sole Manufacturers of "Poilite"—

BELL'S UNITED ASBESTOS CO., LIMITED

SOUTHWARK ST., LONDON, S.E.

18,394. Aug. 13, 1913.—H. J. Williams, 112 Avenue Road, Southampton. Device for holding doors in a closed or open position.

23,089. Oct. 13, 1913.—Dated under International Convention Oct. 11, 1912. Arturo Giberti, 8 Via Paduina, Trieste, Austria. Reinforced concrete floors or ceilings, and centreings therefor.

23,569. Oct. 17, 1913.—Dated under International Convention Nov. 8, 1912. Thomas Goldschmidt A. G., 18 Salkenbergsweg, Essen-on-the-Ruhr, Germany. Method of and means for purifying water.

24,022. Oct. 23, 1913.—Alfred Diss, Pelham's Lane, High Street, Colchester. Sanitary dry closet system and apparatus therefor.

24,540. Oct. 29, 1913.—Dated under International Convention Oct. 31, 1912. S. W. Milsson, Heimdalsgatan 1, Stockholm, Sweden. Lattice work framings for supporting ceiling and wall plaster.

8,913. April 16, 1913.—Ezra Hatton, 110 Sackville Street, Manchester. Skylights or ventilators.

9,115. April 18, 1913.—J. S. Fairfax, architect, Holborn Hall, W.C. Construction of cottages.

10,510. May 5, 1913.—E. W. Brock, 5 Priory Road, Keynsham, Somerset. Manufacture of glass tiles for wall lining and the like.

18,009. Aug. 7, 1913.—J. B. Mat, 140 rue de l'Aquduc, Brussels. Flushing apparatus for water closets.

1,646. Jan. 21, 1913.—H. V. Flinn, 3 Lancaster Avenue, Liverpool. Firegrates and fittings therefor.

1,708. Jan. 21, 1913.—Alfred Hammer, Oesterholzstr 118, Dortmund, Germany. Concrete floors and ceilings.

3,481. Feb. 11, 1913.—G. A. Phillips, Speedwell Works, Sherbourne Street, Birmingham, and A. W. James, 2 Linden Road, Bournville, Birmingham. Means for carrying shop-window shelves and other shelves.

5,078. Feb. 28, 1913.—W. W. Townshend, Mortimer House, Hereford. Direct heating geysers.

6,895. March 20, 1913.—J. C. Blythe, Hexham Villa, Birtley, Durham. Brick and similar kilns.

10,587. May 5, 1913.—H. J. Glen, 39 Museum Street, Bloomsbury. Emergency doors for theatres and other buildings.

13,351. June 9, 1913.—Edward Flanagan, 3,531 North 11th Street, Philadelphia, U.S.A. Automatic fire extinguishers and fire alarms.

14,596. June 24, 1913.—François Cancalon, 37 rue de l'Entrepot, Roanne, France. Reinforced building constructions.

14,630. June 24, 1913.—J. B. Harvey, Melville Bank, Ardoch Grove, Cambuslang, Glasgow. Spigot and socket joint particularly applicable to fireclay, stoneware, earthenware, and like pipes.

26,346. Nov. 17, 1913.—Richard Kilburn, William Pritchard, and J. Hopkinson & Co., Ltd., Britannia Works, Birkby, Huddersfield. Ball stop valves.

17,844. Aug. 5, 1913.—Nelson Thomas, 23 Middleton Road, Dalston. Grates for open fireplaces.

17,948. Aug. 6, 1913.—Peter Hesemann, 116 Friedrichstr, Dusseldorf, Germany. Adjustable apparatus for opening and closing fanlights and other top windows.

20,252. Sept. 8, 1913.—Wilhelm Brasse, 8/10 Louisenstr, Iserlohn, Germany. Slabs for facing walls, ceilings, and the like.

21,572. Sept. 24, 1913.—Dated under International Convention Sept. 25, 1912. J. N. Edelin, 708 Black Building, Los Angeles, California, U.S.A. Hasps.

24,682. Oct. 30, 1913.—G. B. Gianotti, 8 Via Balbo, Milan, Italy. Mosaic.

Any of the above specifications may be obtained from J. D. Roots & Co.

ON Saturday last the Royal Commission on Housing (Scotland) paid a visit to the co-partnership estates at Ealing and at Hampstead, where they had the opportunity of seeing how financial success has followed the restriction of the number of houses to about ten per acre, securing to the residents the advantages of open spaces, institutes, and clubs within easy reach of their homes. Sir Henry Ballantyne and his colleagues were much interested in the developments that have taken place, and at both suburbs visited the blocks of flats that have been erected as well as the houses of different capacities providing accommodation for all classes of tenants. Several houses were in course of construction, and these were inspected by some of the expert members of the Commission anxious to ascertain the adaptability of various materials to Scottish requirements.

Correspondence

[The Editor will not be responsible for the opinions expressed by Correspondents.]

Barnsley Town Hall Competition.

SIR,—This competition has been banned by the Society of Architects, and its members have been requested not to take part therein owing to the unsatisfactory nature of some of the conditions. I ask your co-operation in enabling me, through the medium of your paper, to get into touch with other responsible architects, especially those who do not belong to any architectural body, and to invite them to act in unison in this matter. The remedy is in the hands of individual architects, and it is in their own interests and that of the profession of which they are members that they should refuse to have anything to do with architectural competitions the conditions of which are not in accordance with certain recognised principles.

It is not so much a question of membership in any architectural body as of membership in the profession. The object of promoters of architectural competitions presumably is to obtain the best professional services, and it is time that architects, as well as architectural societies, should use every effort to convince promoters that competition regulations which do not embody the essential requirements of the profession cannot be expected to achieve their object, and also that there is such a thing as professional etiquette in the architectural profession.—Yours faithfully,

C. MCARTHUR BUTLER,
Secretary of the Society.

Feb. 16, 1914.

North British and Mercantile Insurance Company's Offices, London.

SIR,—In *The Architect* dated February 6 appears an illustration of the building belonging to the North British and Mercantile Insurance Company in Waterloo Place, London, and of which we are the architects. This issue illustrates also in particular the bank fittings and screens in that part of the ground floor occupied by the Bank of Montreal.

These fittings were designed by Mr. Ernest Flint, of Coleman Street, E.C., the architect to the Bank of Montreal, and such have been carried out by him in conjunction with ourselves.

Would you kindly mention these facts in your next issue and oblige?—We are, dear Sir, yours very faithfully,

THOMPSON & WALFORD.

Leadenhall Buildings, London, E.C.: Feb. 16, 1914.

Re Fire at Saracen's Head Buildings, Cock Lane, E.C.

SIR,—We shall be extremely obliged if you will kindly allow us to contradict the statement that the amount of damage at the above was £6,000, as estimated. We are pleased to say that it does not amount to anything like this sum, and that the ordinary business on these premises is being carried on as usual, and prompt measures will be taken to reinstate. The insertion of this letter in your next issue will be much appreciated.—We remain, yours faithfully,

PATMAN & FOTHERINGHAM, LTD.
James F. Parker,
Managing Director.

100 and 102 Theobald's Road, London, W.C.:
February 13, 1914.

Norwegian Architecture.

SIR,—In your issue of Friday, February 6 last, you have kindly published Mr. Nordhagen's and our perspective design for the new church at Rjukan, Norway. But I am sorry to see that you have called our designs examples of Swedish architecture, although we both are Norwegian architects living and working in Norway.

Will you kindly in your next issue of your paper put in a note telling your readers our real nationality?—I am, dear sir, yours faithfully,

CARL BERNER.

Kristiania: February 11, 1914.

[We regret that by a clerical error the designs of Mr. Nordhagen and Messrs. Berner were attributed to Sweden instead of Norway.—ED.]

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THE ARCHITECT

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FORTHCOMING EVENTS.

Saturday, February 28.

Architectural Association: Visit to the Mappin Galleries, Zoological Gardens (Messrs. Belcher & Joass, architects), at 2.30 P.M.

Monday, March 2.

Architectural Association: Paper entitled "Architecture and Environment," by Mr. W. S. Purchon, A.R.I.B.A., at 8 P.M.

Tuesday, March 3.

Manchester Building Trades Exhibition: Opening ceremony at 3 P.M. (March 3-14).

Nottingham and Derby Architectural Society: Exhibition and criticism of designs for "A Parsonage House," by Mr. J. Howitt, F.R.I.B.A., at 8 P.M.

Wednesday, March 4.

Royal Archæological Institute: Paper entitled "The Corbridge Excavations, 1913," by Mr. R. H. Forster, LL.B., F.S.A., at 4.30 P.M.

Institute of Sanitary Engineers: Paper entitled "Sewage Disposal and Works Management," by Mr. J. E. Farmer, at 8 P.M.

Northern Architectural Association: Meeting at 7.30 P.M.

Friday, March 6.

Architectural Association: Exhibition of Educational Cinematograph Films, at 8 P.M.

GARDEN CITY MOVEMENT UP-TO-DATE.

ALTHOUGH we have contracted the habit of talking about garden cities, it ought to be remembered that the true garden city is yet an institution of the future, with the sole exception of Letchworth. Garden suburbs and garden villages have multiplied and are multiplying, but the true garden city, *urbs in rure*, has but one single exponent. For a garden city is not merely a collection of residences, each of which has its own garden, not even when the houses are picturesquely located and well designed individually, and limited in number to twelve to the acre, or when the roads have grassways and trees and are laid out to provide closed vistas. The true garden city is a self-contained town, industrial, agricultural, residential, and essentially provides a belt of open country, devoted to agriculture and recreation between the central town area and the suburbs. The country, that is to say, is brought into the middle of and forms an organic part of the city, a protective belt against overcrowding and a convenient source of supply for the city's daily needs of such portion of its sustenance as comes direct from the land.

The incorporation of the country within the city is not only a benefit to the town-dwellers but brings the rural and the agricultural workers within reach of many of the advantages of the town, education, amusement, and all the services of civilisation, thus tending to check the inclination of rural workers to flock into the towns and to neglect the countryside to the detriment of effective and intensive agriculture, and of the national physique.

But if the true garden city is still to seek we have some of its features adopted more and more in the swelling number of garden suburbs and garden villages. A garden suburb provides that the normal growth of existing cities shall be on healthy lines, and though the adoption of these lines necessitates a wider area for the housing of any given number of inhabitants and a consequent still further extension of the distance of the country from the town, it makes for the better health and more pleasant surroundings of the inhabitants of the garden suburb.

Garden villages, such as Bournville and Port Sunlight, are garden cities in miniature, but depend upon some neighbouring city for water, light, and drainage; they have not the valuable provision of a protective belt of country, and are usually the centre of one great industry only. Thus, though they are a valuable and welcome change from the too prevalent slum-dwellings of the factory worker in towns, they fall short of the full development of the garden city ideal.

The progress that has been made up to the present time in the development of garden suburbs and garden villages is well depicted in the brochure* recently issued by the Garden Cities and Town Planning Association. Herein we have given in schedule form a summary of the present position of those estates and societies of which particulars are available—fifty-eight in all. Besides these we are told there are a number of estates recently started which have not yet made sufficient progress to warrant inclusion in the schedule. A very large majority of the undertakings of which particulars are given consists of public companies or societies of public utility under the Provident Societies Act, limited to a dividend of 5 per cent.

The formation of societies or companies with limited dividend has been an important element in the development of co-partnership housing or tenant ownership system which has reacted upon the garden city or garden suburb movement with a mutual impetus in the direction of better housing conditions. The principle of co-partnership housing began in 1901 under the inspiration of Mr. Henry Vivian, and co-partnership tenants' societies have been formed in various parts of the country, and are in course of formation in English-speaking countries across the seas. Many are now federated in the Co-partnership Tenants, Limited, a society which has secured public confidence and has now fourteen societies in membership. The cost value of their land and buildings is already a million and a quarter sterling, and the estimated value of the houses when the estates now being developed are completed is £3,450,000. Besides the instances in which co-partnership tenants' societies have been formed in federation with the Co-partnership Tenants, Limited, the principle has been adopted in many other cases also, even on private estates, as, for example, in the Caxton Gardens Cottage Club, a small industrial concern promoted by Messrs. Billing & Sons, Limited, Printers, Guildford. It is solely a co-operative venture, which has erected twenty-four houses for the employees alone at a cost of £5,688, the land costing £1,250 in addition. In twenty years the occupants will have repaid capital outlay and interest on the scheme, and the houses become their own property. Co-partnership housing, it will be readily understood, is but an extension of the principle of the old building societies.

---

* *The Garden City Movement Up-to-Date.* **By Ewart G. Culpin (Secretary to the Garden Cities and Town Planning Association). (London: The Garden Cities and Town Planning Association).**

Following on similar lines the London County Council in the development of its Old Oak estate at Hammersmith has put into force a scheme for enabling tenants to purchase leases of their houses on the payment of a deposit of £5, and increased rent for the first fifteen, twenty or twenty-five years, sufficient to repay the amount expended. Approximately the increase of rent for fifteen years is one-third and for twenty years one-fifth of the normal payment for occupation only. Such an arrangement is a direct incentive to thrift, whilst increasing the interest of the tenant in his home and his sense of responsibility and importance as a member of the community.

The adoption of co-partnership principles in tenancy is not always directed toward ultimate separate ownership, but to permanent tenancy with an interest in the well-being and profitable conduct of an estate, so that while the dividend on capital is limited to a fixed percentage, any excess of profit beyond this is devoted to improvement of the amenities or the reduction of rent or a rebate on the same. In this respect there is therefore a difference between a co-partnership society and a building society of the older kind.

Garden-suburb principles of estate planning one need hardly to-day expound further than to mention that the two most important are the limitation of the number of houses to the acre and the decrease in cost of road construction.

The brochure we have before us includes in its survey of the garden-city movement an account of what has been done up to the present in Germany, France, Austria, Belgium, Holland, Italy, Hungary, Poland, Russia, and Spain.

NOTES AND COMMENTS.

The report of the Departmental Committee appointed by the Local Government Board for Ireland to inquire into the housing conditions of the working classes in the Irish capital is convincing evidence of the *impasse* at which we have arrived in the housing of the poorer members of the working classes, to say nothing of the work-shy and loafers, who, the Committee suggest, should more properly be dealt with under a reformed Poor-Law system. It seems to the Committee not undesirable, if large housing responsibilities are to be undertaken by the State or municipality, that such changes should concurrently be made in the Poor-Law as would admit of this undesirable class being specially dealt with.

The Committee estimate the average cost of the 14,000 dwellings which they consider required for Dublin at £250 each, and after discussing various methods of providing the money the one which they seem to favour most is the annuity system. On the annuity system the repayment of interest at 3 per cent. and principal would amount to £9 16*s.* 9¼*d.*, and would remain at this figure the whole sixty-four years of the loan. They, therefore, submit that the State might consent to advance money on this system, and they point out that this is already done in England in the case of loans for the housing of the working classes.

On the annuity basis the average annual expenditure per dwelling would be:—

	£	*s.*	*d.*
Interest and repayment of principal	9	16	9¼
Cost of public health services ...	2	0	0
Cost of insurance and supervision ...	0	11	5
Average cost of maintenance ...	1	15	5
Total	14	3	6¼

In order to pay this amount without any loss to the rates it would be necessary to charge an average weekly rent of *5s. 5½d.* The Committee believe, however, that an average rent of 3*s.* 7*d.* is at present all that could be reasonably charged, having regard to the fact that provision has to be made for the housing of a number of workers whose earnings do not admit of their paying rent commensurate with the cost of the accommodation they require. On these figures there would be a weekly loss of 1*s.* 10½*d.* to be met out of the rates, amounting to £1,312 10*s.* per week or £68,250 per annum, equal almost to 1*s.* 5½*d.* in the £1 on the rates. This amount would be an entirely excessive one to place on the shoulders of the ratepayers in view of the figure at which the rates stand at present. The Committee next show what would be the effect if the money were raised on the Labourers' Acts terms. Under the most favourable of these terms the rates would be required to pay about 11½*d.* in the £1, which they think would still be excessive.

Here, as we have before pointed out, we have the crux of the whole problem of the housing of the poorer working classes. To house them in the manner that in consequence of modern by-laws and sanitary regulations is now regarded as essential the dwelling costs 5*s.* 5½*d.* a week. The tenant cannot pay more than 3*s.* 7*d.* If he were a Frenchman, a German, or an Austrian he would be expected to pay, and would pay, 5*s.* 6*d.* out of the same weekly wage. One way out of the difficulty, theoretically, would be to educate the tenant to a higher proportionate rental. This has been done with success by the sweating house-owners of the East End of London and could easily be managed by legislative and executive authority.

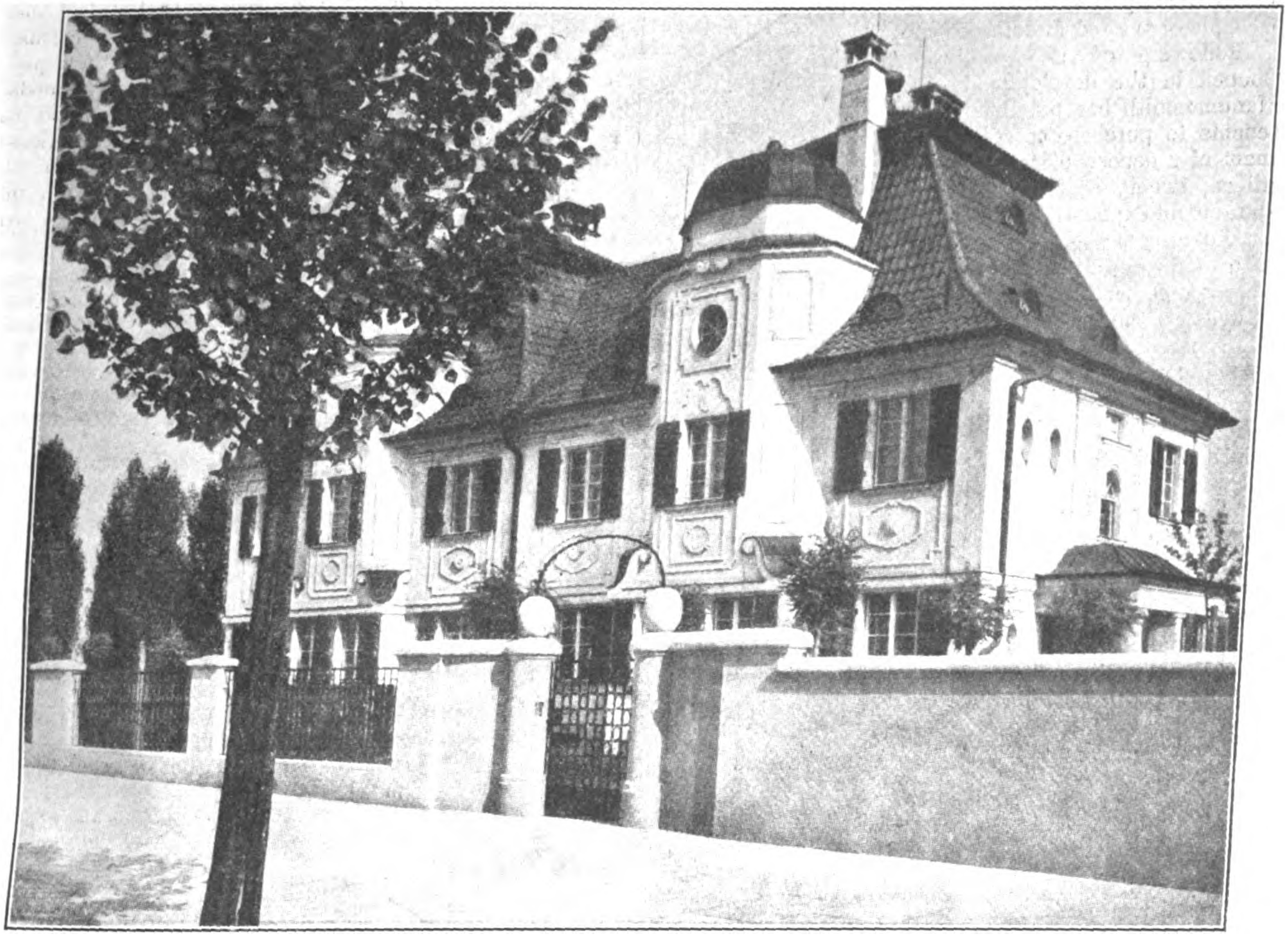
But if public opinion and public sentiment insist upon a higher standard of living in respect of housing accommodation than that to which our workers have become accustomed, it is scarcely fair to enforce that standard by a diminution of the tenant's tea and tobacco, which, though they might be called luxuries, have become so customarily part of life as to be regarded as necessaries. To attempt a solution of the problem by an enforced raising of wages would but be working in a vicious circle as the wages of the workers are a considerable part of the cost of houses, and if we raise the wage we raise the cost. National subsidisation then appears to be the only corollary to an enforced higher standard of housing, and it does not seem to us to matter very much whether it comes out of the tax-paying or the rate-paying pocket of the citizen, provided the incidence of the expense is fairly adjusted and the money wisely expended.

The Lord Mayor of Dublin, we note, rather resents both the report and the comments made upon it, which is scarcely astonishing but not convincing in view of the condition into which housing of the poorer classes in Dublin has fallen. The Lord Mayor's protest that the Corporation have done the best they could is two-edged and rather than a defence may be taken as evidence of the necessity for the future control of Dublin's housing being entrusted to some other authority than the Corporation.

One may credit with something more than a desire for mere factious opposition the arguments raised at a meeting of the Glasgow Corporation against a recommendation of the Parks Committee with reference to the celebration of the sexcentenary of the battle of Bannockburn, that with the view of encouraging figure and historical painting and increasing the number of pictures of that nature in the Kelvingrove Art Gallery, the Corporation should invite from artists finished sketches representing either some incident or the spirit of some epoch in connection with Scottish history. The price offered to the successful competitor for painting a picture on the lines indicated was to be 400 guineas. One member submitted that it was impossible for the Art Galleries Committee or any other committee to order art in the same way as they would order soap boxes or any other commodity. Art could not be pro-

MODERN EUROPEAN ARCHITECTURE.

GERMANY.



[From *Moderne Bauformen.*

PAIR OF SEMI-DETACHED HOUSES, NUREMBERG.—Professor Ludwig Ruff, Architect.

duced to order or specification, and he was surprised that a committee dealing with the Art Galleries of the city should come forward with such a nonsensical proposal as was indicated. Any man with the most elementary knowledge of art, knew perfectly well that whether it was in painting, in sculpture, or literature, the product of the artist was the result of the mood or inspiration and not the outcome of any commercial bargaining such as was proposed. The worthy councillor had undoubtedly got hold of an important element in art, but it was truly argued on the other side that if they went through the galleries of Europe they would find that every one of the greatest masterpieces of all time was without exception commissioned either by a king or a duke or by the ecclesiastical authorities. The committee did not want a painting of Bannockburn. They wanted the artist to give them the best inspiration in his soul of the spirit of Scotland. Glasgow in this way would be setting a worthy example to the figure painters, for whose work there was not a demand by private collectors because it was out of fashion.

The failure, more or less, of all preservative methods for preventing the corrosion of iron and steel lends point to the arguments of Mr. J. Newton Friend, D.Sc., Ph.D. (Carnegie Gold Medallist) in a paper read before the Staffordshire Iron and Steel Institute, on "The Corrosion of Special Steels." Dr. Friend urged that the enormously rapid rate of increase in the consumption of pig-iron rendered it imperative that we must, as far as possible, carefully conserve our stores of iron and steel. This might be done in two ways—namely, by avoiding unnecessary waste in the production of our finished articles, and by preserving those finished articles from disintegration and decay. Iron readily decayed or corroded when exposed to a moist atmosphere. Any man who could find means to arrest this corrosion, and thereby prolong the life of iron, would be doing the world an immense service. It was only within comparatively recent years that any serious attempts had been made to determine quantitatively the actual rates of corrosion of various kinds of iron and steel. There could be no doubt, however, that during the next decade a rich harvest of far-reaching results would be reaped, results of paramount importance to theoretical, practical, and technical science alike.

Dr. Friend described some of the best methods of determining the relative rates of corrosion of different samples of steel, and discussed the influence of the physical condition of steel and of alloying elements upon its corrodibility. Like copper, manganese had been sorely abused, he said, as rendering steels liable to rapid corrosion, but there could be little doubt that in this case it was the sulphur that was really to blame. The influence of carbon on the corrodibility of steel was unique, being complicated by a large number of variable factors. From a corrosion point of view the presence of silicon was very desirable, a practically incorrodible metal resulting with 20 per cent. of silicon. Phosphorus again in small quantities greatly enhanced the power of resistance of steel to corrosion, but other physical powers imparted to iron by the presence of phosphorus rendered the latter an undesirable constituent for most purposes. The same was, unfortunately, true in regard to silicon.

From May 18 to 21 there is to be held at the Imperial Institute, South Kensington, an Imperial Health Conference and Exhibition, having as its object an interchange of knowledge between the different countries of the Empire on the important questions of housing and town-planning and the care of child life.

The Conference and Exhibition is being organised by the Victoria League. In their preliminary prospectus the organisers explain that the Conference has been arranged in order to bring together those working for the improvement of social conditions amongst British people. They point out that the conditions prevailing in different parts of the Empire are widely different. At home there is the want of space for the crowded populations. In the Colonies, on the other hand, there is plenty of space. It is on account of this diversity that special interest should come from the Conference, and much valuable information be exchanged. The subjects under discussion will include garden cities and suburbs, workmen's houses and model dwellings, infancy and health, the school child, and the child as a wage-earner. Delegates from both official and unofficial bodies at home and in the Dominions and Crown Colonies are being asked to attend, and arrangements are being made for papers to be written by those who have special knowledge of these subjects.

The Exhibition to be held in connection with the Conference will illustrate the subjects to be discussed. The housing and town-planning section will include models, plans, diagrams, and other illustrative objects, to which many of the garden suburbs will contribute. The children's section will include plans for schools, ideal clothing, methods of diet, health statistics, safety appliances, and a model of an ideal day nursery.

LONDON COUNTY COUNCIL.

Works Department Redivivus.

An attempt to resuscitate the defunct Works Department of the London County Council was made on Tuesday last, when Mr. Stanley Holmes moved that it be an instruction to the General Purposes Committee to report to the Council as to the steps necessary for the re-opening of the Works Department forthwith, in order to re-establish the independence of the Council against contractors, and to provide once again for the execution of work by the direct employment of labour, in order to ensure the maintenance of trade-union wages, hours, and conditions in all works carried out by the Council

With a Municipal Reform majority on the Council, the attempt was foredoomed to failure, and nothing eventuated but a reiteration of the old Progressive argument against the dependence of the Council upon outside contractors for the execution of its municipal work.

In the course of the discussion a serious statement was made to the effect that, under present conditions, no attempt was made by contractors to genuinely tender for the Council's work. It was alleged that, on the details of a contract becoming known, an arrangement was arrived at by the contractors that one of their number should work out the necessary estimates of cost, and that other firms of contractors should, for appearance sake, submit tenders at higher prices, the intention being that the firm destined to get the work should have a clear field without competition, and thus be assured of securing the contract.

Major Gray, chairman of the committee, in closing the discussion, asserted that his party had not the slighfest intention of re-establishing the Works Department, and on being put to the vote the motion was defeated by sixty-seven votes to forty-four.

Architect's Department.

Reporting upon the position of the Council's architect, Mr. W. E. Riley, the General Purposes Committee stated that they were impressed by the extent and importance of the duties attaching to his office. Since his appointment the volume of capital work executed under his supervision had increased about tenfold, while the maintenance work of his department showed a corresponding increase. The committee asked the Council to place upon record its appreciation of Mr. Riley's services, and, while they did not suggest an increase of his salary, they were of opinion that, in the event of Mr. Riley, who is sixty-one years of age, being in the Council's service at the age of sixty-five, the addition of ten years should be made to his period of service for the purpose of calculating the retiring allowance payable to him. To this course the Council assented. It may be mentioned that Mr. Riley's salary during the whole period of his service has been £2,000 a year.

COMPETITION NEWS

Barnsley.—Members and Licentiates of the Royal Institute of British Architects must not take part in the Town Hall competition because the conditions are not in accordance with the published regulations of the Royal Institute for architectural competitions.

Bath.—The Education Committee received 103 competitive designs for the proposed secondary school. Mr. Henry T. Hare, F.R.I.B.A., the assessor, decided that the design No. 4, by Messrs. Hickton & Farmer, FF.R.I.B.A., of Walsall, best fulfilled the requirements. The plans numbered B7, by Messrs. McKewan & Madeley, AA.R.I.B.A., Birmingham, were placed second, and the authors will receive a premium of 50 guineas. Those sending designs which the assessor considered worthy of commendation were Mr. E. Cratney, Wallsend-on-Tyne (2); Messrs. Trew & Davis, Gloucester; Messrs. Eedle & Mayers, London; Mr. E Harding, Brixton Hill, S.W.; Mr. S. B. Russell, London; Messrs. Lucas & Lodge, London; and Messrs. Munby & Chetwood.

Derby.—Mr. E. R. Sutton, F.R.I.B.A., has given his award as assessor in the competition for two proposed Carnegie branch libraries. The competition was limited to local architects, of whom eleven sent in designs. Mr. Sutton has recommended for adoption the plans of Mr. Arthur Eaton, St. James Street, and Mr. C. B. Sherwin, of St. Peter's Street.

Mill Hill.—Any members of the Society of Architects who have been invited by the Hendon Education Committee to take part in the Mill Hill County School competition are requested not to do so without first ascertaining from the Secretary whether the conditions are such as can be approved by the Society.

ILLUSTRATIONS.

EXTENSION OF THE CHRISTIE LIBRARY, MANCHESTER UNIVERSITY.

This addition to the buildings of Manchester University, erected from the designs of Mr. Paul Waterhouse, M.A., F.R.I.B.A., was recently opened by Lord Morley.

NEW PORTER'S IOLGE, MANCHESTER UNIVERSITY.

This little building also is a recent addition by Mr. Paul Waterhouse to the University.

GRAINGER'S PORCH, ELY.

This picturesque piece of old Ely is the subject of one of the drawings made by Mr. H. St. John Harrison on his tour as holder of "The Architect Travelling Studentship," 1913.

OXFORD COLLEGE SERIES, No. 130.—JESUS.

We this week give a view of the later or back Quad of Jesus College. A historical account of the college appeared in *The Architect* of February 20.

The London County Council Education Committee recommend that additional public elementary school accommodation be provided as indicated hereunder: (1) About 400 places by the erection of a new school in the neighbourhood of Stamford Hill (Hackney); (2) about 256 places by the enlargement of the Enfield Road L.C.C. school (Hackney); (3) about 1,000 places by the erection of a new school in Hoxton (west of New North Road); (4) about 1,000 places by the erection of a new school in Hoxton (east of New North Road); (5) about 300 places by the erection of a new central school to replace the Millfields Road L.C.C. central school (Hackney); (6) about 350 places in the neighbourhood of the Berkshire Road L.C.C. school (Hackney); (7) about 1,400 places in South Hackney (Hackney); (8) about 384 places by the enlargement of the Eleanor Road L.C.C. school (Hackney); (9) about 1,000 places by the erection of a new school in Bethnal Green, S.W. (north of the Great Eastern Railway); (10) about 800 places by the erection of a new school in Bethnal Green, S.W. (south of the Great Eastern Railway).

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

AN ordinary general meeting of the Royal Institute was held at Conduit Street, W., on Monday evening last, the 23rd inst. Mr. Ernest Newton, A.R.A., Vice-President, occupied the chair.

The death was announced of Mr. James Hine, formerly of Plymouth, who was elected a Fellow of the Institute in 1864 and was transferred to the class of Retired Fellows in 1907. Also of Ernest Barraclough Crossley, of Nottingham, elected Associate in 1907.

Mr. Paul Waterhouse, M.A., F.R.I.B.A., then read a paper, which was illustrated by lantern slides, on

LONDON RAILWAY STATIONS.

There are, it seems, 299 railway stations within the Metropolitan area. I propose merely to offer some considerations relating solely or chiefly to the greater termini, of which we have a dozen: Euston, King's Cross, St. Pancras, Liverpool Street and its ally, Fenchurch Street, Charing Cross and its Cannon Street appendage, Victoria, London Bridge, Paddington, Marylebone, and Waterloo.

The terminal stations of London are the points at which the greatest city of the earth's best country gives its welcome to the world at large. Perhaps, therefore, the first thought which arises in contemplating them is the question, "Do these welcomers give their greeting in terms worthy of the city that they represent?"

I fear we must admit that London prefers to enhance the climax of its hospitality by showing to the approaching pilgrim less cordiality at the outset than is extended later on; and that the retreating visitor often finds the pangs of separation modified by the sense that steals over him during the final ten minutes of his stay that, after all, London is a fairly ugly and inhospitable spot.

In railway stations, as in other things, London has paid the penalty which falls upon pioneers—the penalty of being too easily outpaced by its successors. There is, however, for railway stations, as for all other products of human contrivance, an ideal which is worth the seeking, even if it cannot be found, and, if found, cannot be copied.

Let us briefly take a survey of these twelve old friends, giving them praise and blame as they may seem to deserve them.

Euston comes first, being the terminus of that ancient London to Birmingham line which marked the earliest beginning of the steam approach to London. To Euston I do homage. There was nothing mean about Euston's birth. The London and Birmingham Railway meant big things from the very beginning. Euston Station was meant to be, and was, worthy not only of the great movement thus initiated, but of its future. That noble hall and that splendid Doric portico (since outraged by encroachments) bear a ratio to the line then existing glorious out of all proportion when compared to any subsequent displays of London railway architecture. The platforms and their roofs certainly are an anti-climax, but Euston is setting its house in order.

The glazed-roof problem is a difficult one, and it cannot be said that in this matter we have always gone from good to better. St. Pancras, one of the earliest roofs, is still far and away the best. Sir Gilbert Scott, in the full blast of Gothic energy, astonished the railway world with a quasi-mediæval external elevation, and the engineer, far from letting him down with a disappointment, played up to him in an extraordinary manner. Instead of designing a commonplace truss and decking it with scraps of ecclesiastical castings, he made the discovery that a giant pointed arch, with a concealed tie beneath the rails, was the form best suited to his needs. The resultant effect is amazing. For grace, beauty of form, and sheer magic of fitness the iron and glass roof of St. Pancras Station gives me unqualified pleasure. It has an *élan* and charm which would be convincing even if it were a bit of sacrifice to Gothic etiquette; but when one discovers that it is no mere concession to style, but an example of direct, untrammelled engineering skill, the respect due to it is spontaneously given.

The only completely new terminus built under the eyes of my own generation is Marylebone, the London goal of the Great Central. To it we must look for London's latest utterance in Station craft, and we look—with disappointment. It was conceived and born under the ægis of that mischievous theory that, if only the street front of a station is masked by an ostentatious hotel, the station proper (or improper) can be left to the engineer.

Let me speak courageously on this point. I will admit freely that stations have primarily a utilitarian function to perform, also that railway companies are not primarily either philanthropists or patrons of art. But the doctrine that, in the platform part of a station, beauty and design are unimportant is, in London at least, an unworthy doctrine. We architects know quite well what we mean when we say that there is no class of public building to which it is impossible to impart at least distinction. Railways have rather overlooked the fact that mere size, instead of excusing ugliness, conveys an absolute obligation to avoid ugliness. We have in the stations a repetition of the old and sad story of the Thames iron bridges. It is a good rule of civic decency that beauty is always possible in small things, but that in big things it is imperative.

Paddington, perhaps, is a bad shot at the beauty target. But at least it was a shot. Wyatt was called in, and perhaps Wyatt failed. His affectation of the Moorish mode was unhappy, but it was well-intentioned. There is certainly grandeur in the big arcuated spans of the glass roofs, which are worlds removed from the timid and prosaic horizontality of our later efforts. Paddington again almost enters the region of romance from its enshrinement in Frith's picture.

King's Cross might be named after Landseer's picture, "Dignity and Impudence." One can hardly find a more striking combination of vigour with debility than its south elevation. In the sheer strength of direct purpose the engineer flung up those two cyclopean arches, and in between them he set out to design an architectural climax which should unite and crown the whole design; the result was failure—he turned his drama into a farce. The offer of a prize of five guineas to architectural students under twenty-five would produce more than one good scheme for raising this elevation to nobility at a cost of under £500. But why has King's Cross forgotten all this time that it has a forecourt—or at least a foreground? For many a year this rather shapeless but valuable site was dedicated to the display of rustic seats and summer-houses. At last, when tube railways came into use, a little pink stationette arrived; but the position which it assumed bids defiance to any possible scheme for laying out this open space in some sort of relation to the great building behind it. I confess I am amazed. Land is in this district extremely valuable, yet a spare corner of important frontage is first wasted and then misapplied. London is a wonder-city.

Charing Cross succumbed (as regards its glass and iron roof) to premature decay, and was rebuilt in the manner which I am still unwilling to regard as the last word in the steel artist's vocabulary of beauty. Cannon Street still maintains, when viewed from the river, an almost picturesque suggestion of one of the minor entrances to the Infernal Regions.

To Holborn Viaduct I will be generous, and forget its existence. I have always admired the architecture of its hotel front, but as a station it is quite conspicuously inglorious.

Civilisation has many grudges against history. One of these is the regret that railways and steam were not invented in the time of the Romans. The Romans would have left us a lesson in the laying out of railway routes. A railway station would at least wear as well as a basilica or a public bath. Here and there—perhaps even on our own island plot—there would still be standing vast majestic piles of monumental masonry serving the very purpose for which Rome had reared them. The advantage would be immense, for not only should we find in them that ancient sanction without which, as architects, we are so often timid, but also, and conversely, we should be rid of the excuse of expediency which is supposed to justify the deformity of all architecture connected with distinctly modern needs.

It is obvious that whenever a railway line makes up its mind to enter the heart of a metropolis it must do one or other of three things. It may come in on the level, in which case it either obstructs existing streets and roads or threads an ingenious track through a roadless region. Euston is on the level, and solves some of its difficulties by frank obstruction, others by diving under the primrose roots of Primrose Hill.

In default of coming in on the level it may sink below the general surface in a cutting. This was Paddington's idea—it is also the device adopted at Liverpool Street. But the measure is only a half measure, and the roads which cross the railway outside the station have to climb for the necessary bridge height.

The third course, which was adopted by nearly all the South London lines, is a courageous policy of overhead travel, necessitating miles of arched and bridged causeway. It cannot be said that these long rows of arches have added to the beauty of the Surrey side, though in a ruined London some centuries hence they may possess an interest not unlike that of the aqueducts on the Campagna. It is this high-level device which makes possible the crossing of the Thames at Charing Cross, Blackfriars, and Southwark.

There is a fourth expedient, not yet adopted in London, which I may call the policy of the Quai d'Orsay. In idea this is splendid—it is partly splendid in execution. The trains are kept below ground, the booking offices, waiting halls, and administrative quarters being all on the street level. Thus space is halved, or nearly halved, and the upper level departments gain greatly in dignity. But the train platforms suffer in light, comfort, and convenience. Moreover, it is impracticable to have steam engines employed in these basement domains, and it becomes necessary to exchange steam for electricity outside the underground portion of the route.

The Waterloo which first superseded the Nine Elms terminus was a very poor and mean affair. But recent years have shown a very hearty development, and the new station has about it many of the elements which one hopes to see in the station which is aware of the dignity due to its size.

Victoria, again, is a notable instance of reconstruction. The gentleman who designed the blank wall in Buckingham Palace Road did it right nobly. It is true that Victoria's iron roofs, though lofty, are uninspired, but the worst fault of the station is its inordinate size or, rather, its inordinate length. The lack of width had to be compensated for by forward extension, with the result that the distance from the booking office to the railway carriage is in many cases immense. A wider station farther to the south-west would really have been more satisfactory.

Liverpool Street is also a monster, but it gets over its difficulties by lateral expansion, and here the man who happens to know at which side of the station it is best to enter may often save the precious minute necessary to his object. The high and low level entrances for passengers and the bridge connections from platform to platform are cleverly arranged—specially in view of the fact that the great bulk of the passengers are luggageless suburbans.

The station, or rather stations, at London Bridge are relics of the intermediate barbarism between the prophetic courage of Euston and St. Pancras and the mean modernism of St. Marylebone. We are a very unambitious people, and in public matters very ungrasping. London Bridge Stations are a fair type of the kind of thing we accept as good enough for us.

Architecture is either worth nothing in the scheme of civic economics or it is worth a great deal. If it is recognised as acceptable and permissible, I should venture to say that no building within the Metropolitan area which is visible to a minimum of 100 people per diem and is worth a minimum of £10,000 should under any consideration whatever run the least risk of being justly described as unarchitectural. Under this most moderate canon I excommunicate the railway stations at London Bridge.

But apart altogether from the question *what* a railway station should be, there is another question—namely, *where* the station or stations should be. In fact, the great question of disposition—and this is after all of as great importance.

There are still a few people who imagine that in a Utopian London there would be not many termini, but one. In a few seconds we will dispose of this strange idea. Centralisation of either roads or railways is, except in a very small town, a terrible mistake. Such concentration would have almost incalculable disadvantages. The single station, in the first place, would be so large (at least 160 acres) that we should have to walk a furlong to reach our train. In the second place, none but *habitués* would have a reasonable chance of finding a train at all. And, thirdly, the confusion and crowding would be very great. Outside the station the vehicular crowding would be an even grosser evil than the tangled vortex of pedestrians within. Another trouble would be that the discharge of so huge a multitude at a single spot would result in a great overcrowding of the means of local transport, omnibuses, trams, and tubes, at that centre.

In thinking over this question of centralised stations I asked myself whether there might not be something to be said for the idea of a pair of termini, one on the north, collecting all the lines that serve the northern, western, and eastern trunk lines; another on the south or Surrey side, gathering together the South Eastern, South Western, Brighton, and Chatham lines. These two main stations could be linked together by a series of parallel lines passing under the Thames or, if a really decent bridge could be designed, *over* the Thames. It is rather surprising to discover with what comparatively small alterations of route the various railways could be assembled for this purpose.

But I threw this idea also aside, feeling that, though in a less degree, the evils of concentration—viz., undue size of station and undue congestion of road traffic—applied to this also.

London has suffered too long from the false idea that the regions on the south side of the Thames are either nonexistent or inaccessible. The theory that to be within striking distance of the Metropolis you must be on the left bank is quite a ridiculous one. It dates from the days when London Bridge was either not yet built or was the only bridge.

In course of time railways crossed the Thames. There are now four such bridge crossings. One, the least objectionable, is that which conveys the two main lines from Victoria Station. Another is the monster which issues from the jaws of Charing Cross. A third is the disfigurement adjoining Blackfriars Bridge, and the fourth is that which feeds Cannon Street. For these three last I contend with fervour that there is no need. I go farther and predict with equal fervour, and some measure of hope, that in due time they will confer on the beauty of the Thames the homage of graceful disappearance.

Were the riddance Utopian it would be worth praying for, were it Quixotic it would be worth paying for, but if it is good business let us have it at once, and prove that the useful and the beautiful are indeed one.

Discussion.

Mr. H. V. Lanchester, in proposing a vote of thanks, said he was sure they all felt that Mr. Waterhouse had given them a great deal to think about, especially as to what was in his mind behind what he said. The lecturer tried to put into an hour what was worthy of very much larger handling. The first thing that struck him when Mr. Waterhouse was talking about the great roofs of railway stations was that although St. Pancras inside was a magnificent thing, and one sympathised with his sympathy, yet it and all other great roofs were out of scale with the rest of the Metropolis. Something of a more delicate architectural design was wanted. Cannon Street was the one instance where an effort was made to balance the roofs by two towers. Mr. Waterhouse had expressed hopefulness for Waterloo; personally he (the speaker) always thought it was a pity the station was not something different, for at present it looked a mere chunk of building. The station, too, was approached badly. On the Continent the approaches would certainly have been managed better. He had been told that the eminent engineer of the South Western Railway, together with his directors, went to see the most important railway stations in the world and incorporated their merits in Waterloo. Practically they may have done this, but æsthetically they certainly have not. Perhaps they purposely left the æsthetic side out of account. Considering how much of the London-Brighton line is electrified, he wondered whether it might not have been possible to escape the inordinate length of Victoria by constructing a double-decked station. He would like to ask whether it would not be a more economical method to make the great London stations through, and not terminal, stations. There must necessarily be a great waste of time and money with the latter in such operations as shunting. If all such things could be done outside, instead of inside, the city it would surely be more economical. The underground railways were, presumably, already constructed in the main; at any rate, it was too late for a general scheme. But London did have immediately coming upon it a necessity for a general scheme of street improvement and road traffic. There were signs that Londoners would come to realise that such a scheme was absolutely needed. Without it they would indulge in the same waste of money and extravagances as were committed in connection with the tube and other stations.

Mr. Frank Potter, General Manager of the Great Western Railway, said if the charming paper did nothing else it must make them furiously to think. If railway men were given an opportunity of rearranging the approaches to the great Metropolis they would not arrange them as at the present day. It had always been a matter of great surprise to him that Brunel and Wyatt had been able to look forward so far as they did in designing a station which for nearly sixty years answered the demands of an extending traffic, for it was only within the last few years that an extra line outside Paddington had had to be made. As a practical man, he quite agreed with what Mr. Waterhouse had pointed out about the disadvantages of a centralised station.

Mr. H. H. Statham cordially agreed that an effort should be made to render railway termini impressive to the incoming foreigner. For that reason he had always had the greatest respect for the man who put up the portico at Euston, even though it was not exactly what would be put up now. The portico was built on a grand scale, and showed an appreciation of the idea of making an entrance architecturally effective. He had always considered it architecturally a mistake to front a terminus with an hotel, out of which it was impossible to get much character. Rather it should be like the portico of a great road which goes all over the country and conveys all kinds of people. At Victoria there was an ingenious middle line of rails, on which the empty trains could be put so as to leave room for the incoming ones. It was truly regrettable the way in which railway stations were disfigured by advertisements. He remembered going over Victoria to see the just-completed extensions and admiring the clean brick walls. The engineer tried to prevent them putting up advertisements, but his directors would not listen, saying it was a matter of business. It was impossible to get a station to look well where that was done. He wished directors would consider whether the gain in credit by any such sacrifice would not compensate them for the loss of money. With regard to the walking necessary in order to go from one underground station to another, might it not be possible the authorities calculated that the exercise would be beneficial?

Mr. G. A. T. Middleton differed from Mr. Waterhouse's idea that Charing Cross and Cannon Street were wrongly placed on the north side of the river. He had had the same idea some years ago, but had changed his opinion.

Mr. E. P. Warren remarked that Mr. Waterhouse had made his subject, which might be very possibly scientific and a little dry, quite charming. One thing he would like to say with regard to the possibility of fine terminal stations was that it was impossible to expect a fine station until it was provided with a fine approach. In France the smallest station possesses a fine Place de la Gare. In London it was possible to hope for a fine approach only if it were provided by the authorities, or at the least if the authorities greatly helped. It was almost inconceivable that a civilised nation which had built such a station as St. Pancras should allow it to have such approaches. A general interest and pride in its railway stations should be fostered among the citizens at large.

Mr. Charles Morgan, engineer of the London, Brighton and South Coast Railway, said the question of terminal stations had been very specially brought to his notice from early pupilage days. He had been privileged to act as engineer for the enlargement of Victoria Station. He had had necessarily to approach all such questions from the pounds, shillings, and pence point of view. It was impossible to go in for flights of fancy. In London they worked under very exacting conditions of space, and a square foot extra to the right or left might mean an outlay of hundreds or thousands of pounds. They were too hampered in all directions by the requirements of bodies like the L.C.C., the local authorities, the London Traffic Board, and the police. By the time all these have been satisfied the question of individuality is stamped out. If one remembered that Victoria Station had Buckingham Palace Road on one side and the South-Eastern on the other, it was easy to see that it would not be a commercial proposition to widen it. If he had a free hand he would not make a single platform longer than the longest train working. He had done his best at Victoria to get round the difficulty. The station was admittedly long, but he understood it was one of the easiest worked at the present day. St. Pancras roof was admittedly a very fine work; but he believed it would be the only one in this country. The expense of maintenance with such a roof in London atmosphere was out of all proportion to any benefits from architectural fancy. It was necessary to put up a roof of such dimensions as to be able to repair it and renew it without employing great scaffolding. It behoves railways to adopt something practical, irrespective of architecture. With regard to advertising, at the first proposition for a very magnificent advertisement the engineer has to say whether he can take it from a structural point of view. The time comes when they had to give way for the sake of the shareholders. Up go the advertisements, and all the beauty goes too. It had been suggested that at Victoria they might have had an underground and an overground station. That scheme was carefully thought out. At present one leaves the station at street-level, then the permanent way rises to get over Grosvenor Bridge. To get under the river it would be necessary to start the fall at Clapham. The latter scheme may eventually come. But not a high-level station. It seemed to him that Waterloo Station had been severely criticised. Personally he would feel extremely proud if he were its engineer. It will be from a railway point of view perfect. It is now as excellent a one as before it was an abomination.

The vote of thanks was then passed with acclamation.

Mr. Waterhouse having briefly replied to some of the points raised, the meeting terminated.

It was announced that a special general meeting will be held on Monday, March 9, for the election of the Royal Gold Medallist for the current year. This will be followed by another special general meeting, when the chairman will propose on behalf of the Council that, subject to the approval of the Privy Council, By-law 28 be temporarily suspended. Following these meetings a business meeting will be held for the election of members, and the consideration of the revised schedule of professional charges will be resumed.

FORDWICH, KENT.

By J. Harris Stone, M.A., F.L.S., F.C.S.

(Concluded from last week.)

Quite close to the old Town Hall or Court-house, standing in a low marshy situation near the river, is the church now dedicated to St. Mary-the-Virgin, though probably in times long gone by it may have been otherwise designated. The church consists of a nave with a north aisle and a chancel. There is one plain obtusely-pointed window north of the nave; the other windows of the nave are curvilinear, with square heads and labels, the tracery being delicate and good. Many of the windows have odd bits of ancient stained glass in them. The nave is divided from its aisle by three rude, pointed arches, without mouldings and with square piers. The chancel has one Norman window, and some square-headed rectilinear; at the east end a curvilinear one of two lights. The original edifice must have been Saxon, for on the south wall of the tower is a blocked-up entrance still showing a rude rounded arch of that period, beneath which a Norman arch was added later. Other evidences of Saxon work are to be seen in the north-east quoin of the nave near the junction with the north aisle.

At the west end of the interior high up on the wooden screen dividing the nave from the belfry are still to be seen the two little shelves for the six loaves of bread which were formerly distributed each Sunday to poor women of the parish under the bequest of one Thomas Bigg.[13] This quaint dole loaf-cupboard, devoid of any door, is 2 feet square and 8 inches in depth. Under the Parish Councils Act (the Local Government Act, 1894), this charity or dole was decreed to be a parish charity and not an ecclesiastical one, so that it came under the authority of that newly-constituted body. In effect, however, little change took place. The disposition of the loaves used to be made (it is now discontinued since the advent of the Parish Councils Act) by the parson and the two churchwardens, but when the Act in question came into operation it found the parson Chairman of the Parish Council and the two churchwardens members thereof. The change therefore was but in name. It is devoutly to be hoped that the restorer's hand, if ever laid upon the interior of this church, will spare these little shelves for the loaf-dole—such mementoes of the past are getting rare indeed.

The church is entered by the south door, as is usual. Here on the inside, immediately on the right, or east, side, and close to the floor, is a curious heart-shaped niche (only discovered in 1904, when the walls of the church were being cleaned and repaired), 2¾ feet in height and 1 foot 4¾ inches across, the bottom being a rough, unhewn monolith of hard stone. There is now no facing or door stone, though probably it once had such, making the niche an enclosure. Not unlikely this niche was the repository of the heart of some Crusader who died in the Crusades, and whose heart was brought back by his comrades, or servant, to be thus interred in the sacred edifice of his native place. A piscina at the east end of the south wall of the nave indicates a side altar having been there at some period.

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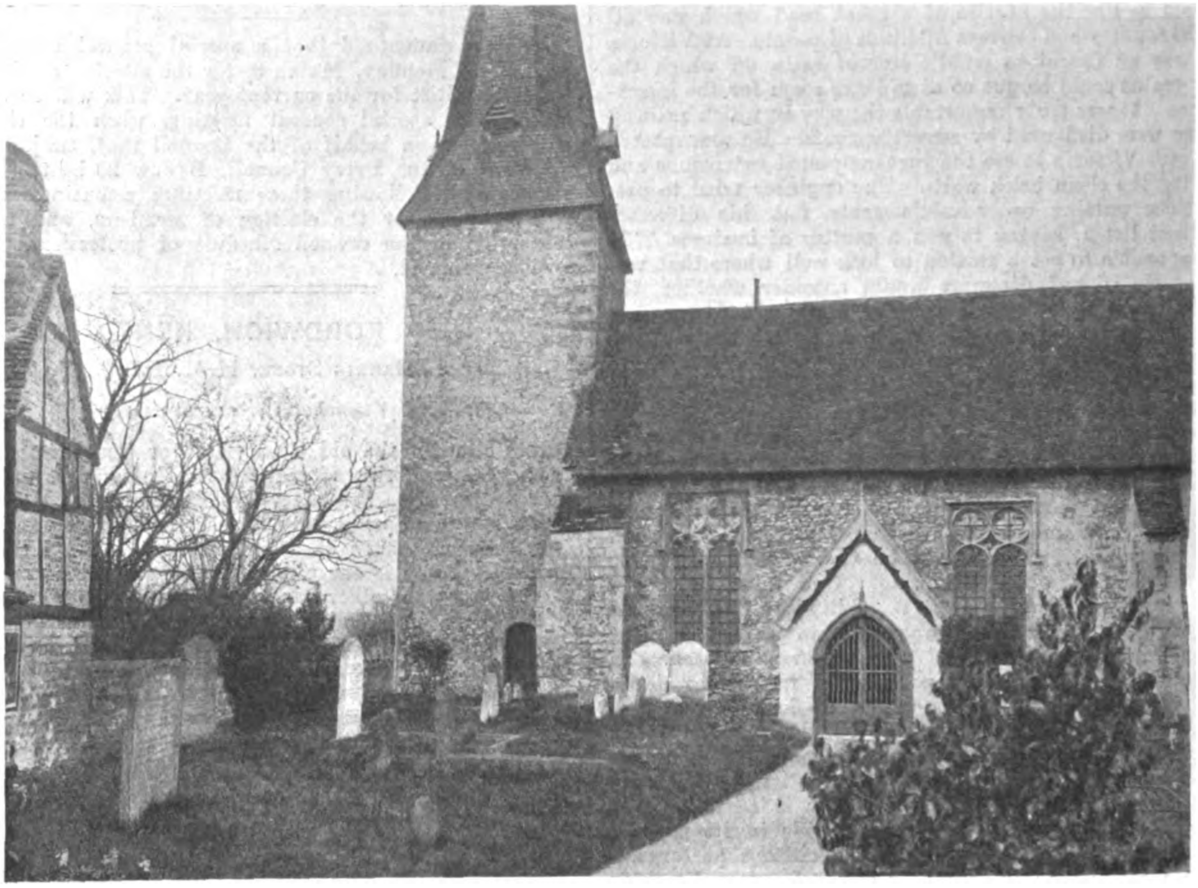
[13] "Thomas Bigg, by his last will in 1669, gave 50s. per annum, to be paid to the overseers of the parish, who if the money is neglected to be paid for six weeks are by power of the will to make distress for the same, to be distributed to the poor at the discretion of the overseers. Which money is given away weekly in bread."—Hasted's "Kent," vol. iii. p. 607 (1790).

But by far the most interesting object[14] to be seen in this old Fordwich church is the curious shrine-like tomb or sarcophagus now placed on the floor close up to the north wall near the west end. It is in reality a solid monolith, richly sculptured upon one side only with foliated leaves, arranged like tiles in a house, with small pillars, above which is delicate tracery.[15]



FORDWICH CHURCH FROM THE SOUTH.

At the back of this tomb, and cut into the monolith (the hand can be inserted behind, for the stone is not flush up against the church wall) are two oblong slots, some 6 inches by 3 or 4 inches wide, which seem to indicate that at some time or other the monument was attached to a wall, perhaps not in a recumbent position, as it now is. The interesting question is—Whose tomb was this? Some antiquaries think it as old as the fourth century. One thing is certain: it must have been placed above the remains of some eminent person, or to commemorate his death, for so highly finished and elaborate a monument would not have been carved to perpetuate the memory of a person of little importance. It has been conjectured by Sir Benjamin Stone and others that it might even be the tomb of St. Augustine, but of this there is no evidence. We know that he arrived in England in the year 597, and consecrated his first church at Kantwara-byrig, or Canterbury, but where he was buried and what monument, if any, marked his resting-place are not now matters of historic fact. He died on May 26, 604.

The belfry contains four bells, all cast by Joseph Hatch, bearing date 1624 to 1633, but devoid of dedication.

The eight o'clock, or matins, peal is still rung at Fordwich, or was.[16]

The bells are four in number:—

I., 27 in., "Joseph Hatch made me, 1633."
II., 31 in., same inscription, 1624.
III., 32 in., same inscription, 1633.
IV., 34½ in., "IOSEPHVS HATCH ME FECIT, 1633."

Joseph Hatch, the bellfounder of the Ulcombe Foundry, in the county of Kent, during the thirty-seven or thirty-eight years that he was founding, in spite of local and Metropolitan competition, did a business which may fairly be described as enormous. This is clearly proved by the fact that, in spite of the very large amount of recasting that has been done in Kent during the last two centuries, there are still 155 of his bells in Kentish steeples. He died, childless and wealthy, in September 1639, being buried at Bloomfield on the 17th of that month. The business then went to his nephew, William Hatch, who carried it on in troublous times—those of the Civil War and Cromwell's usurpation. Men were too busy with other matters to think of bellfounding, and consequently his tale of work is very poor compared with Joseph's. His largest lots are the ring of three at Lower Halstow (1662) and four at Minster-in-Sheppey (1663). His total is twenty-five only. He died in 1664, and with him the Ulcombe foundry came to an end. The founder of the firm was Thomas Hatch, of whose bells only two (whereof one is cracked) remain in the county. The cracked one is the treble of St. Margaret's, Canterbury, and the whole bell is the treble at Langley. They both bear date 1599.

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[14] "In the west part of the body of this church was placed a very ancient stone shrine against the wall, which, having been removed some years since, was cast out in the churchyard where, being soon likely to perish by being exposed to the weather, it was purchased by a gentleman and brought to the precincts of the cathedral of Canterbury, where it now lies. It is one solid stone sculptured only on one side, the back part having two hollows as if made to fasten it to the wall. There is no conjecture to be formed on whose account it was made and placed there."—Hasted's "Kent," vol. iii. p. 607. Sir Benjamin Stone, who has also photographed this interesting antiquity, says: "It has evidently been the topstone of an ancient Roman sarcophagus. I have photographs of two such tombs; one is that of the Emperor Honorius, brother of Galla Placida (he died 450). They were children of the Emperor Theodosius the Great. This monument is in the mausoleum of Galla Placida (now S.S. Nazario e Celso) at Ravenna, and another is of Pietro delig Ouesti in the same church. There may be truth in the supposition that this relic was once the cover of St. Augustine's sarcophagus, as it certainly was that of some important personage. It will be remembered that the saint came to England in 596 and landed in Kent."

[15] My measurements of this stone are: Length, 67 inches; height, 36 inches from floor level to top; width, 16 inches; leaves, 3½ inches across widest portions and 2½ inches long; plain shafts of the pillars, 6 inches in height; the tracery on their tops, 2¼ inches high; and the long band of carving above, before the leaves begin, 4 inches high.

[16] "Church Bells of Kent," J. C. L. Stahlschmidt (Elliot Stock, London, 1887).

The staircase leading to the second loft in the tower of Fordwich Church is composed of ancient steps, each made out of a solid block of rudely hewn wood. Staircases exactly similar may be seen in the main hall of South Kensington Museum, where, wisely, specimens have been preserved before they become extinct.

Upon rolling back the strip of matting that runs down the centre aisle of the church, about the middle of the edifice three brasses in excellent preservation come into view affixed to one of the paving-stones. The topmost one towards the west is a coat of arms, the centre is a very finely executed brass of a lady in Elizabethan costume with ruffles, expanding and many-folded, an illustration so perfect that a reconstruction of the dress of the period could be made from it by any expert dressmaker. Below is another oblong brass, with inscription cut in capital letters, some of the words being rather strangely divided. It runs as follows:—

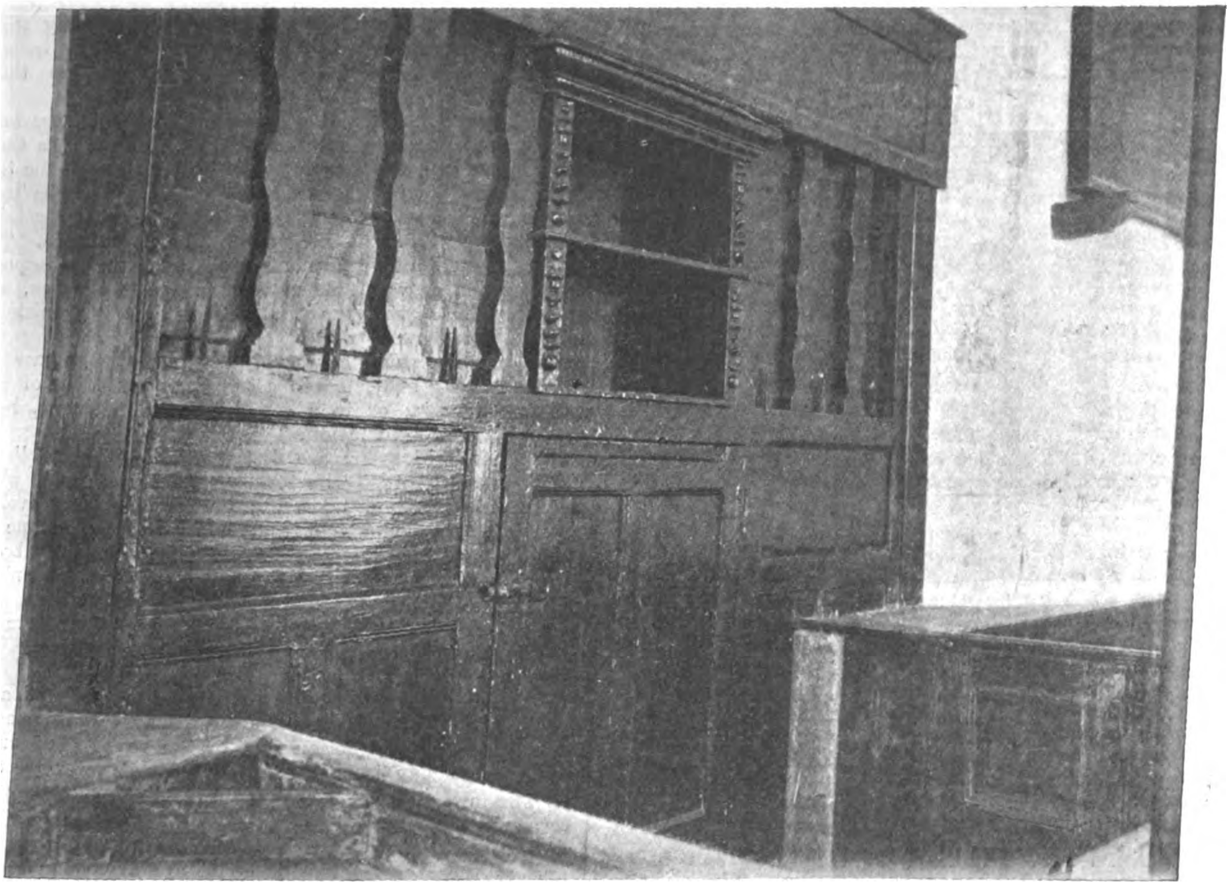
> HERE LYETH BVRIED YE BODY OF APHRA HAW-
> KINS WIFE OF HENRY HAWKINS GENT & DAVGH-
> TER OF THOMAS NORTON ESQ. WHO SCARCELY
> HAVING ARRIVED TO 21 YEARES OF AGE YET FVL-
> LY ATTAYNED PERFECTION IN MANY VERTVES
> DEPARTED THIS FRAYLE LIFE YE XVJTH OF JANV. 1605.

The Rectory, estimated at £200 per annum, is in the patronage of the Cowper family. To the earldom of Cowper was formerly attached the viscounty of Fordwich. The present Rectory was formerly the Manor House (not the half-timbered house now so-called, which only received its name because a person of the name of Manners once lived there), and, although it has been modernised, contains evidence of its antiquity in a fine fifteenth-century stone fireplace near the entrance door. It has also a water-gate to the river, and the garden wall of flint mixed with squared ashlar is part of the original wall of the Bailiffs of the Abbot of St. Augustine's.

The curious-shaped pyramidal spire of the church, arising from the plain, unbuttressed tower at the west end, is not covered with slates or tiles, but with thin pieces of wood commonly known as shingles, many of which near the top, or taper end, are obviously loose and about to fall off. With the exception of the ancient Saxon indications already referred to the tower appears Early English, and has a lancet window.

The pews are still pews, square boxes with high walls and with seats all round. That near the east end on the north side was the Mayor's pew, with the old wrought-iron brackets still affixed to the eastern edge for carrying the maces. Alas! those supports will never more fulfil their function, for the emblems of civic dignity are removed from Fordwich, and exhibited under a glass case in the museum at Canterbury, and it possesses no longer a Mayor or Corporation.

There is a north, or devil's, door kept shut, and near it, therefore singularly out of proper position,[17] is the ancient font. This is large in size, made of Purbeck or Bethersden marble, and of the Norman period, the bowl, square in outward form and lined with ancient thick sheet-lead, standing upon a round stout pillar, which once was cruciform but now with the angles filled up with cement. The bowl is moulded with plain, small, semicircular arches, and was once apparently supported by four pillars, for, on looking underneath it, one sees evidence of where the same were



DOLE, LOAF OR BREAD-CUPBOARD AT WEST END OF FORDWICH CHURCH.

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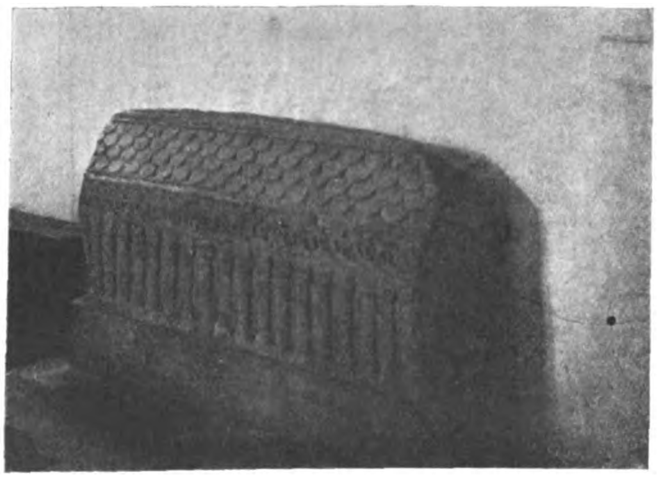
[17] Some may differ with me as regards the usual position of the font in churches, but I venture to think the consensus of opinion is that its proper place is close to the south door on the western side. I know that at St. Peter's, Rome, the font stands in the north wing of the transept, and it may be similarly placed in other cathedrals, but then, unless the cathedral was also a parish church, a font there is out of place, and cannot be taken for a criterion. By the Council of Meaux, 845, every priest was allowed to have a font placed in the porch, or, as St. Gregory of Tours says was the case in France, on the left-hand side of the entrance door. Though Whitgift says the original position was in the midst of the church or in the lowermost part but never at the church door, the font certainly stood in the last-named position in 1549, and Cosin says it should be not far from the entrance, and rightly, as baptism admits into the spiritual Church and to a share in the services thereof. But it must be remembered that once the font was usually movable, for in 1236 Edmund, Archbishop of Canterbury, ordered baptismal fonts to be kept under lock and key as a precaution against sorcery—"Fontes baptismales sub sera clausi teneantur propter sortilegia."

attached at the four corners of the monolith. The one pillar which now supports the bowl stands upon a base of a square stone.

The churchyard around the edifice contains fewer old tombstones than one would expect. Still, the old skull and crossbones period is represented with head-stones of 1705 up to 1769, and with the happier, more hopeful period of cherubs and wings which seems here to have started about 1752.

I wish to deprecate in the strongest possible manner the removal of the Fordwich relics to Canterbury. The two maces, the Custumal Book, the Common Seal, the Mayor's Seal, the Scold's Bridle, and any other Fordwich articles ought to be returned to, and kept in, their place of origin. People go to Canterbury to see Canterbury things, and these Fordwich curiosities are lost in the *omnium gatherum* of a town museum, no matter how well arranged. Those who visit Fordwich naturally expect to see there, on the spot, these Fordwich remains; they don't want to have to go to Canterbury to unearth them. The sooner the county orders them to be returned to their old dwelling-house the better. It is an act of unadulterated vandalism to divorce these priceless memorials of the past from the place of their birth. They belong to Fordwich, not to Canterbury. If the question be one of safe guardianship the county (or the nation if need be) should ensure their safe custody at Fordwich, no matter what the cost.



ANCIENT TOMB ON NORTH SIDE OF FORDWICH CHURCH

It is not as though Fordwich had no place in which to exhibit them. People go to Fordwich to see the very interesting Town Hall and these.

Before long, therefore, let us hope the intelligence of the country will see that Fordwich has restored to it its Custumal Book and other belongings. Already there are signs that more attention is being directed to the spot. Scarcely a day passes that a motor-car or motor-bicycle, as well as the ordinary bicycle and horse vehicle, does not pull up outside the little enclosed Press Yard, and visitors pass up the few steep stairs into the Council Chamber and peer into the prison cell beneath. Motors have certainly rendered accessible spots which before their advent were remote and neglected—a fact which is undoubtedly to be placed to their credit. When these banished articles are back in the Court House, after their temporary sojourn at Canterbury, the place will be still more interesting, and likely to be much more visited. Then, too, it will possess great educational value. A short time spent there provides graphic object-lessons of some interesting past history of England which would only be learnt by a long course of dry study. Children might advantageously be taken in batches to Fordwich and instructed on the spot, and I venture to say that what they learned in this practically illustrated manner they would never forget. In the classroom reigns, dates, events, old domestic customs, and such like branches of knowledge are dry subjects, and few young people assimilate them. Here, with the objects *in situ* and their historic surroundings of the place eloquently pleading, many of our old customs, ancient laws and institutions are realised, re-revivified, and grasped, not to be forgotten. If we bring up children devoid of all knowledge of what their ancestors did, how they lived, suffered, struggled, and endured, we nourish no patriotism in their breasts, but we merely leave them in the helter-skelter of present-day life to live for themselves alone. We simply engender a selfishness which cannot be for the good of the nation. The worship of their ancestors by the Chinese was not, after all, a bad form of religion—there are many not so good. We might do worse than engraft a little of it upon our Christianity, and it is just a place like Fordwich that makes us think a little of those who have gone before us, of those who have helped to make this Empire what it is.

THE PRESERVATION OF WOOD.

AT a meeting of the Royal Society of Arts on the 18th inst. an exhaustive paper was read by Mr. A. J. Wallis-Tayler, A.M.I.C.E., on the above subject. From it we take the following extracts:—

The advancing cost of lumber has brought home to the consumer the fact that the only possible offset to this enhanced cost is the use of preservative methods to prevent, or rather to retard, decay; and thus not only to lengthen the life of the wood in all its forms, but also to widen the field by bringing into use a number of less valuable species of timber.

Once divested of life, vegetable substances, in conjunction with animal substances, are liable to decay. Some kinds of wood are more apt to deteriorate rapidly than others, but all woods, under certain conditions, become deprived of their fibrous textures, and thus lose their properties.

Wood consists essentially of vessels and cells, the only solid parts being the coats which form them. In these vessels is the sap, the circulation of which through the tree is the source of its existence. On the death of the tree, however, the sap in the wood is liable to cause vegetable decomposition through the process of fermentation. The fact that putrefactive fermentation, and the subsequent decomposition of vegetable matter, is due to albumen, was discovered by Kyan, the inventor of the "kyanising" process of preserving wood.

The most common causes of decay are the presence of sap, and being subjected to alternating conditions of wetness and dryness, or to a combination of moisture, heat, and absence of ventilation.

Two kinds of decay are distinguished—"wet rot" and "dry, or sap, rot." The former, which may occur whilst the tree is standing, takes place where the gases evolved, principally carbonic acid and hydrogen, can escape the tissues of the wood, the sappy portions especially becoming decomposed. The latter, which takes place only in dead wood, occurs in confined places, where the gases evolved, finding it impossible to escape, enter into new combinations and produce fungi, which derive their nourishment from, and thus destroy, the wood.

By felling the timber at the proper season, and at the most suitable age, the tendency to decay can be somewhat reduced. For destruction due to the ravages of insects, the only remedy is treatment with some preventive agent.

The lower forms of animal and vegetable life, that is to say bacteria, fungi or spores, assisted by heat, air, and moisture, enter the wood cells and destroy the wood tissue, and as these destructive elements are always present and ready to attack organic matter, it becomes necessary both to destroy them and to render the wood impervious to them by the injection of some antiseptic or poison in liquid form.

The processes for the preservation of timber from decay, and from destruction through the boring of insects, may be classified under three headings: Drying artificially and hermetical protection from contact with the atmosphere by coating the surface with paint; the elimination of the sap of the wood by dilution or vaporisation; the impregnation of the wood with some antiseptic chemical substance which will form an insoluble compound with the organic matters in the sap.

The first and second of the above methods are only valuable where the timber is comparatively thin, is so placed as to be readily accessible, and is not in contact with the ground.

The earlier investigators whose processes gave the most satisfactory results were those who carried out their experiments between 1830 and 1840, and three processes dating from that period have survived to the present time—viz. the corrosive sublimate or mercuric chloride ($HgCl_2$), or kyanising process; the dead oil of tar or creosote oil, or creosoting process; and the chloride of zinc ($ZnCl_2$), or burnettising process, the first, or kyanising process being now less frequently employed owing to the greater cost of the agent and the longer time required to carry it out.

CONDITIONS NECESSARY TO ENSURE SUCCESS.

Two conditions are absolutely necessary in order that an antiseptic agent should produce useful results in the preservation of wood—viz. a proper liquid state at the instant at which injection into the wood takes place, and a reasonable cost.

The wood should, moreover, be properly seasoned or at the very least half-seasoned. In the best practice in Europe the wood is not treated until it has been seasoned from six to twelve months. In the United States, however, wood is usually treated four to six months after cutting, and generally with inferior results.

The whole problem involved in timber preservation is the replacement of the sap of the wood by some suitable preservative agent.

VARIOUS PROCESSES.

The Bi-chloride of Mercury Process or "Kyanising."—The preservative process usually known as "kyanising," from the name of the inventor, John Howard Kyan, who introduced it into this country in 1832, consists in steeping or soaking the wood in a solution of bi-chloride of mercury or corrosive sublimate ($HgCl_2$), the solution generally used consisting of 1 lb. of the salt to 99 lb. of water.

In America, where the process has recently been carried on in some localities owing to chloride of zinc and dead oil of tar or creosote oil for the "burnettising" and creosoting processes not being readily available, the usual rule is to allow the wood to steep in vats for a length of time depending upon its least thickness; thus if the timber is 10 inches by 12 inches thick it would remain in the vats eleven days; if 6 inches by 9 inches, it would steep for seven days.

Owing to the bi-chloride of mercury used as the antiseptic in this process containing hydrochloric or muriatic acid (HCl), which acts injuriously on iron, it has been found impracticable to attempt to impregnate the wood under pressure.

The price of corrosive sublimate is about 3*s.* 6*d.* per lb., against 4*d.* per gallon for creosote oil, and about 2*d.* per lb. for pure chloride of zinc.

The Zinc-chloride Process or "Burnettising."—Sir William Burnett's invention, known as "burnettising," was introduced in 1838, and the process consists briefly in the destruction of the tendency possessed by certain vegetable and animal substances to decay, by subjecting them to the action of chloride of zinc ($ZnCl_2$). The degree of dilution recommended by the inventor is one part by volume to fifty parts of water, and the impregnation is now most commonly carried out under a pressure of seven or eight atmospheres, as used in creosoting. In Germany, where the process is probably the most used, the wood is steamed under a pressure of from 60 lb. to 70 lb. per square inch, preparatory to burnettising. The solution employed is generally composed of 2.5 per cent. of zinc chloride and 97.5 per cent. of water.

The wood to be treated is first air-seasoned in the open or steamed in closed retorts to expel moisture. The first stage of the cycle consists in subjecting the wood in the retort to a vacuum, which is maintained until the solution is introduced, and the wood is completely submerged. Additional solution is then pumped in and the pressure increased to about 100 lb. or 125 lb. per square inch, until the required amount of penetration and impregnation is obtained; the remaining solution is then drained from the retort. The process lasts about seven hours fifteen minutes. A leading recommendation of this agent is its cheapness.

The Zinc-tannin or Wellhouse Process.—This process consists in subjecting the wood to be treated to the action of steam in a retort or impregnating cylinder for a period sufficient to open the pores and expel the natural saps, followed by a vacuum of from 18 inches to 26 inches to withdraw the vapours and free the wood from the condensed steam and volatilised saps. The antiseptic agent consists of a solution of zinc chloride of a strength of from 1.5 to 3 per cent., according to the nature of the wood, with a proportion of dissolved glue equal to one-half of 1 per cent. The solution is held in the retort at a pressure of from 100 lb. to 125 lb. per square inch for two and a half to six hours, after which it is forced back into the storage tank and a one-half per cent. solution of tannin or tannic acid ($C_{27}H_{22}O_{17}$) is introduced and held under the same pressure as before for about two hours. After the withdrawal of the latter the operation is complete.

The zinc-tannin process differs only from the "burnettising" process in the addition of the glue and the subsequent treatment with tannin solution. The glue and the tannic acid combine and form a leathery and insoluble product claimed to assist in rendering the wood impervious to the absorption and giving off of moisture, and thus to prevent the zinc chloride from leaking or being washed out.

The Dead Oil of Tar Process or "Creosoting."—John Bethel evolved in 1838 a practical process for the injection of hot creosote oil, or dead oil of tar, into wood to be preserved, the operation being performed in a closed vessel or retort under pressure. This process is now universally known as "creosoting," which, however, is a misnomer, as dead oil of tar or creosote oil actually contains no real creosote.

The substance owes its success as an antiseptic agent to the presence of insoluble non-volatile substances indifferent to the attacks of oxidation or putrefaction under the conditions to which its product is normally exposed.

The "creosoting" process undoubtedly gives excellent results, and is extensively used in this country and in America. Although the first commercially practical plant appears to be due to Bethel, an authentic record of the use of creosote oil, for impregnating timber, as far back as 1756 is said to exist. Bethel's experiments showed that by impregnating the wood with a minimum of 7 lb. of creosote per cubic foot satisfactory results were obtained in the case of railway sleepers; for marine work he considered that not less than 10 lb. per cubic foot was required. Other experimenters have employed from 10 lb. to 20 lb. per cubic foot.

A standard method of carrying out the creosoting process is as follows: The wood for treatment, having been carefully dried, is steamed and subjected in a retort to the action of a heated vacuum of from 22 inches to 24 inches, so that the thorough and uniform penetration of the preserving liquid or agent, essential to the highest efficiency, may be ensured.

The creosote oil or dead oil of tar is then admitted to the chamber, which latter is still maintained connected with the vacuum pump, at a temperature slightly above that of the boiling-point of the sap at the pressure in the retort at the time. During the time that the hot oil is surrounding the wood, and penetrating into the interfibrous spaces, any aqueous vapour that still remains in the wood rises to the top of the chamber, owing to its lesser specific gravity, and is drawn off by the pump, and when the chamber is completely filled with oil all the remaining moisture has passed off.

The exhaust pump is then cut off, and, to facilitate and expedite the impregnation of the wood a force-pump is started by means of which creosote oil is forced into the chamber or retort until the desired pressure, generally about 150 lb. per square inch, is attained. This pressure is held until the wood has received the required amount of the antiseptic agent. The oil remaining is then withdrawn from the retort and dumped into an underground tank, from whence it is pumped back into the measuring tank, the difference in the reading of the tank gauge before the oil is put into the retort, and after it is pumped back into the measuring tank, giving approximately the amount of creosote oil injected into the wood.

The impregnation being complete, the retort is opened, the treated wood removed, and another charge can be inserted. The above practice, it will be seen, consists of two distinct operations, the preparation of the wood and the impregnation of the prepared wood with the preservative agent.

To ensure success requires most careful attention and skilful management, and, of course, the provision of adequate and suitable appliances. The attainment of a more or less perfect product demands the consideration of the following points: The wide divergence in the characteristics of timber; the varying amounts of sap due to the lapse of time since, and the season in which, the tree was felled; its possible subsequent immersion in water for a longer or shorter time; the character of the soil and the conditions under which the tree grew, whether in a dense forest or a comparatively open country; whether it is of a rapid even growth, or of a slow intermittent one. To an experienced operator these conditions indicate in each case the proper course to be pursued, and failure to observe and to take them into consideration is to invite indifferent, uncertain, and, in the end, unsatisfactory results.

Of almost equal importance is a proper understanding of the circumstances under which the finished product is to be used. Timber for piers, wharves, and other structures in tropical waters, demand processes and degrees of thoroughness of treatment that are unnecessary in the harbours of more temperate climates, which latter are in turn more exacting than land and fresh-water constructions.

The time required to treat any particular wood depends upon the structure, size of wood, shape, the method of treatment of the wood. The full creosote process with 10-lb. treatment lasts seven hours.

The Rueping, or Rüping Process.—Briefly, this process, which is chiefly used with oil of creosote as an agent, consists in forcing compressed air at a pressure of from 80 lb. to 100 lb. per square inch into the pores or cells of the wood (previously either air-seasoned or steamed in a retort), and, at a higher pressure, creosote oil, without relieving the air pressure. In this country the usual practice is to force the compressed air into the wood at a pressure of about 50 lb. per square inch.

The retort is filled with oil by means of an equalising reservoir or pump, so as to avoid releasing the air pressure. The oil pressure thus started at from 80 lb. to 100 lb. per square inch is then gradually increased to about 150 lb. per square inch, compressing the air that has been forced into the cells or pores of the wood into a smaller volume, and allowing from about 10 lb. to 12 lb. of creosote oil per cubic foot to enter the wood.

Upon relieving the combined air and oil pressure, and draining the oil from the retort, a vacuum, or rather a partial vacuum, is produced therein, which permits the air enclosed in the cells or pores of the wood to expand and force out the surplus oil from the wood fibres, leaving the latter impregnated, according to some authorities, with from 4 lb. to 6 lb. of creosote per cubic foot, and, according to others, with as little as 2.2 lb. per cubic foot.

The Rueping process has been patented in Great Britain, Germany, and the United States. It was primarily devised with the object of reducing the cost of creosoting by preventing the heavy loss occasioned by dripping in the wood treated by the ordinary process.

The Saccharine Solution, or "Powellising" Process.—This process was first introduced by Mr. Powell, and is hence usually termed the "powellising" process. The exact composition of the solution used is a secret, but it is stated to consist mainly of sugar, with a small percentage of arsenic added, and probably several other ingredients.

The value of saccharine solutions for the preservation of wood is said to have been discovered from the fact that the timber of sugar vats is found to be to all intents and purposes everlasting. It is averred that sugar had never been employed for timber preservation before the idea occurred to Mr. Powell, which is probably true so far as treatment on a comparatively large scale is concerned.

The treatment is on the open-tank or immersion system, the treated timber being, however, subsequently subjected to artificial drying.

An advantage of considerable value possessed by this process is that green wood may be satisfactorily treated.

A microscopical examination of thin sections of wood treated as above, made by Professor Norman Rudolf, M.Sc., F.I.C., revealed the fact that the cells were swollen up, some being apparently filled with saccharine matter in a non-crystalline form, the saccharine solution having actually become a part of the structure of the wood.

The Vulcanising or "Haskinising" Process.—The vulcanising process, also known as the "haskinising" process, from the name of its inventor, Colonel Haskin, consists in roasting or subjecting the wood, which has been previously dried by steaming, to a temperature sufficiently high to coagulate the albumens contained in it, and in conjunction with pressure also to form new substances. In other words, the high temperature produces a resolution of the woody fibre and sap, and results in the production of wood creosote.

NATURAL OILS AS PRESERVATIVE AGENTS.

Recent experiments have demonstrated that natural oils can be used as preservative agents with a fair amount of success. It does not appear that such oils possess any antiseptic properties, but they serve the purpose of stopping up the open wood cells with a substance which becomes solid under ordinary temperatures, thus preventing heat, moisture, and air from penetrating into the wood, and obviating the assistance which they render to the decay-producing organisms in getting to work. This proposition seems reasonable enough, as it is generally held by timber experts that, in order to produce decay, moisture and heat must be present at the same time with access to the air.

Atlas Preservative Solution.—The composition of this solution is a secret. It is poisonous, and causes irritation of a passing nature on contact with the skin. The treatment of timber with this agent consists in the immersion in a bath of the cold solution of a strength of from 15 to 25 per cent. for a period of time dependent upon the size and nature of the wood to be treated. In the case of sleepers from twenty-four to thirty-six hours will be required.

After the treated timber is dry, it should, according to the makers, be given a coat of hot gas-tar, probably to prevent leaching.

Anthrol.—This is a proprietary antiseptic solution, made by the Anthrol Company, which can be used as a paint, or for the immersion or open-tank process. The solution is preferably employed in a heated condition.

Bellit.—This is also a proprietary solution possessing antiseptic or preservative qualities, and consisting of a 2 per cent. solution of dinitro-benzol and mineral oil. It has a boiling-point of 300° C. (572° F.). The mode of application is the same as with "Anthrol."

Burnettisine is a preservative solution made by Sir W. Burnett & Co., Ltd. It is used by the Post Office for telegraph poles where creosoting would be undesirable, also by railway, dock, and shipping companies. This agent is claimed not only to preserve the wood against decay, but to render it practically fireproof as well as strengthening it, and, moreover, to leave it clean and odourless. It is said to enter the heart of the wood and form an insoluble chemical combination that will not wash out.

Carbolineum.—Oils obtained from the distillation of coal-tar consisting of such oils heavier than water which, with tar-acids, help to form creosote. There are two well-known grades of this oil on the market—carbolineum Avenarius, a preservative solution, introduced over thirty years ago by Mr. Avenarius, and carbolineum "marque de lion." Carbolineum heated to from 65° C. to 94° C. (149° to 201.2° F.) can be either applied to the wood with a wire brush, or the timber to be treated can be immersed in a bath of the warm solution according to the open-tank method, the best temperature for the bath being 95° C. (203° F.), and the timber being allowed to remain in soak for from five to fifteen minutes, according to dimensions and character. Experiments have demonstrated that, in the case of hard woods such as oak and beech, the amounts absorbed by the woods in a bath of carbolineum at a temperature of 60° C. (140° F.) were not increased to any appreciable extent by prolonging the immersion to twenty minutes. It also appears that an increase in the temperature of the bath to 80° C. (176° F.) and over, has no effect upon the amount of the oil absorbed by the wood.

Jodelite.—Another proprietary antiseptic, used in a similar manner to carbolineum. The treatment by open-tank method takes from ten to forty minutes, in accordance with the density of the wood. The solution should be heated to from 82° C. to 94° C. (179.6° F. to 201.2° F.).

Microsol.—According to an analysis made by Professor Arth ("Preservation des Bois," Henry), this solution consists of sulphate of copper, 70 per cent., in crystalline and powdered form, sulphate of soda, sulphate of lime, small trace of free silicate, and a copper salt of sulphophenol. The treatment is the same as with carbolineum, the strength of the solution varying from 2 per cent. to 4 per cent., and the time required being twenty-four hours or more immersion, according to the nature, &c., of the wood. This preparation is well spoken of on the Continent.

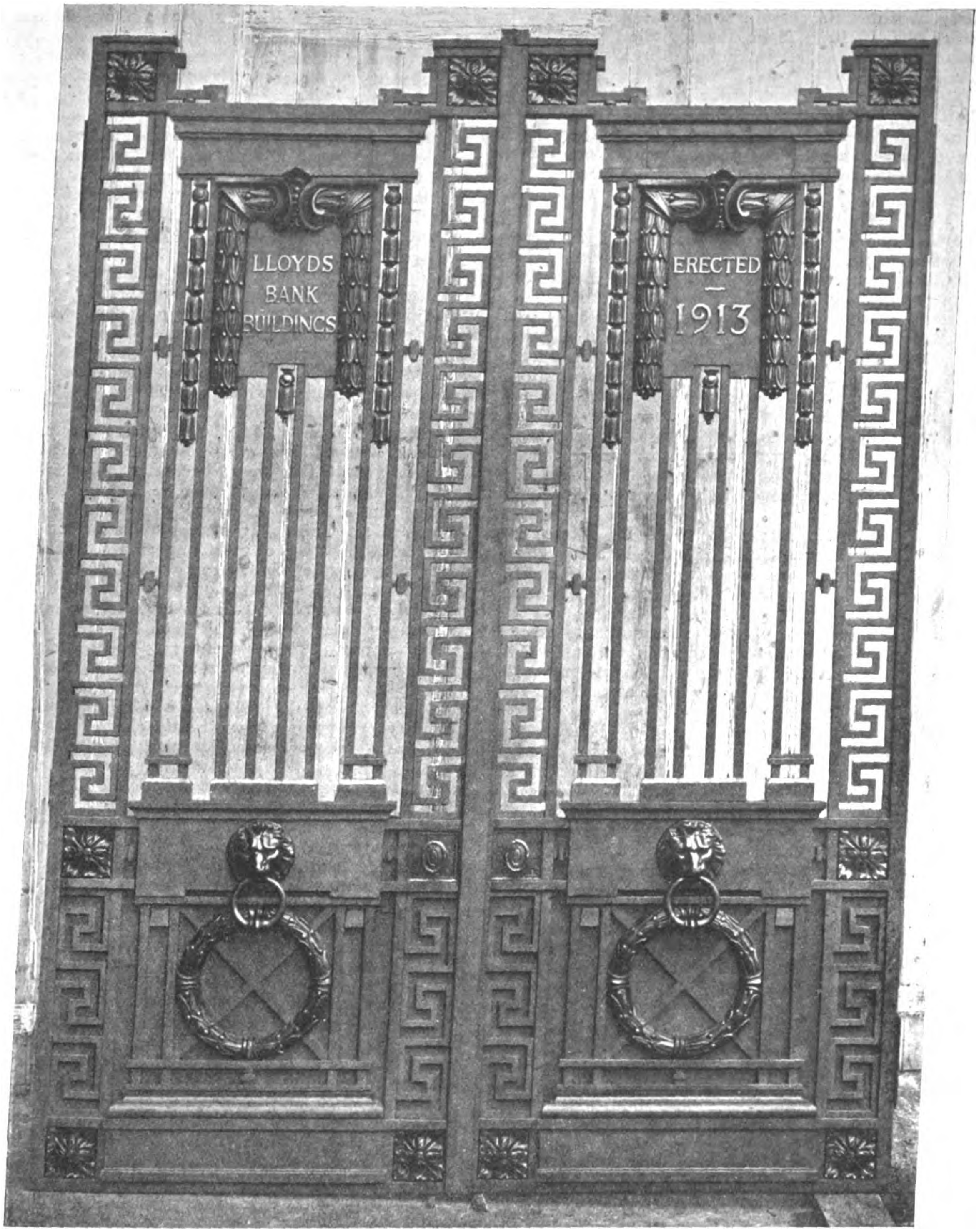
Solignum.—A proprietary antiseptic solution made by Major & Co., and applied with a brush, either cold, or when climatic conditions render it advisable heated to from 71° C. to 82° C. (160° F. to 180° F.). This solution has a tendency to work downwards.

Faleir's method of destroying the fungi of dry rot in buildings affected by heating beyond 40° C. (104° F.), which is the temperature at which the mycelium of the merulius is killed. Owing to the fact that wood is a poor conductor of heat, it is considered desirable to raise the temperature of the entire building to 42° C. (107° F.), and to maintain this temperature for at least two hours. It is important to be quite certain as to the exact nature of the growth, as if the fungi be grown inside the wood heat will only expedite the work of destruction, as fungi of this class flourishes more actively at the temperature fatal to the dry-rot fungus.

AMOUNT OF PRESERVATIVE ABSORBED BY VARIOUS WOODS.

In India the amount of absorption by hard woods, such as terminalia, tomentosa, and mesua ferrea, is stated to be 3 lb. per cubic foot; moderately hard woods, such as dipterocarpus tuberculatus, &c., 6 lb. per cubic foot; and soft woods, such as pinus excelsa, pinus longifolia, &c., 10 lb. per cubic foot.

In the United States the usual amounts of creosote oil specified to be injected are as follows: For railway ties



Pair of wrought and cast-iron entrance doors of severe but pleasing design, with cast-bronze modelled ornament, made by H. W. Cashmore & Co., 96 Victoria Street, London, S.W., for the new banking premises for Messrs. Lloyds Bank, Ltd., Manchester, of which Messrs. Chas. Heathcote & Sons were the architects.

or sleepers, from 10 to 12 lb. per cubic foot; for dimension timbers, from 15 to 20 lb. per cubic foot; for piles, from 20 lb. to 30 lb. or more per cubic foot. Other experts advise the injection into the wood, in the full cell creosote process, of from 6 lb. to 12 lb. of creosote oil per cubic foot, in the case of railway ties or sleepers, and from 10 lb. to 20 lb. per cubic foot in the case of timber and piling.

LIFE OF PRESERVED WOOD.

Mr. V. Herzenstein, in the Bulletin of the International Railway Congress (July, 1910), from information collected from a number of railway companies, gives the average life of creosoted sleepers to be as follows:—

Description of Sleeper	Main Line Years	Sidings Years	Total Years
Creosoted pine	15	5	20
Creosoted oak	18	7	25
Creosoted beech	20	10	30

Mr. Hausser, of the Midi Railway Company, France, in his report to the Seventh Session of the Railway Congress, says: "Although it is very difficult to lay down a rule that would be at all generally applicable, it may, however, be said that there is a unanimous opinion that pickling or preserving materially lengthens the life of sleepers, approximately doubling it in the case of oak, tripling it in the case of pine, and quintupling it in the case of beech."

The *Engineering News* (New York) states that results obtained in the United States show that, by the zinc-chloride or burnettising treatment, the life of the soft woods is more than doubled, meaning a life of from eight to twelve years for pine that usually lasts from two to five years. This is the mean life, the actual life being from five to over twenty years for treated pine ties or sleepers, against from two to seven for the untreated ones. Creosoting gives from 25 to 50 per cent. more life than the zinc-chloride process, but the cost of the former is three or four times that of the latter, and moreover, in the case of several woods creosote oil can only be caused to effect a superficial penetration. The injection of from 10 to 15 lb. of creosote oil per cubic foot of wood, according to Mr. Card, gives a life of from twelve to twenty years.

Mr. De Kermond (*L'Electricien*, Paris) states that official tests have shown that posts treated with copper sulphate have a life of thirteen years nine months; by the Kyan or mercuric-chloride process, nearly seventeen years; and by the creosoting process, nineteen years eight months.

Cost of Preservative Treatment.

The cost of pickling or treating wood varies considerably, according to the wood being treated, the process employed, and the country, or even the district, where the work is being carried out, &c.

The cost of creosoting in this country on the pressure system varies from 3*d*. to 5*d*. per cubic foot, in accordance with the price of the oil and the amount injected. For estate work the amount of oil used for impregnation is generally about .75 gallons per cubic foot, and the labour of attending to the working of such a creosoting plant is calculated at .5*d*. per cubic foot. At the present time the price of creosote oil is 4*d*. per gallon, so that the price works out at 3.5*d*. per cubic foot. Creosoting timber for railway purposes costs for pine and fir from 2.9*d*. to 5.1*d*. per cubic foot.

The cost of creosoting timber with 10 lb. of creosote oil per cubic foot, in the United States, is about $8.00 per thousand board feet, and for each additional pound of creosote oil used $0.75 must be added, creosote oil being taken at $0.07 per gallon.

The cost of the chloride of zinc or burnettising process for timber, with ½ lb. of dry zinc-chloride per cubic foot, is about $3.00 per 1,000 board feet. Treatment with "burnettisine" costs about the same as creosoting, viz., 5*d*. per cubic foot.

The price of corrosive sublimate used in the kyanising process has, combined with the slowness of the process, caused it to fall into disuse here, and, at the present time, probably the United States is about the only place where it is still used to some extent in certain localities where there is a difficulty in obtaining chloride of zinc and oil of creosote. In this country the price of corrosive sublimate is such as to render its use as a preservative agent impossible, with creosote oil in the neighbourhood of 4*d*. per gallon, and pure zinc-chloride at 2*d*. per lb.

The cost of treating sleepers on the chloride of zinc process has been found by the Southern Pacific Railway Company to average, with two of their portable plants, 8.20 cents (4.1*d*.) and 7.41 cents (3.7*d*.) per tie or sleeper, or 2.5 cents (1.25*d*.) per cubic foot.

The zinc-tannin, or Wellhouse process, is considerably more expensive. The actual cost at four of the standard works in the United States is given by Mr. Rowe as being, for a 3 cubic feet sleeper, 7.81 cents (3.9*d*.) for chemicals, and 4.61 cents (2.3*d*.) for labour, or a total of 12.42 cents (6.21*d*.) per sleeper. According to this the cost per cubic foot is slightly over 4 cents (2*d*.).

The Rueping partial cell process, with an impregnation of 5 lbs. of creosote oil per cubic foot, and taking the oil at 4*d*. per gallon, costs about 2.75*d*. per cubic foot.

The cost of the saccharine or powellising process is given as being in Bombay 5 annas (7.5*d*.) per cubic foot, and in Western Australia 3.68*d*. per cubic foot, plus the royalty to the patentees. Where sugar is very cheap, the cost, exclusive of royalties, would, according to Mr. Ryan, be 1.36*d*. per cubic foot.

The following is the approximate average cost of impregnation with fifteen different antiseptics, including processing, from various sources:—

	Per Cubic Foot
(1) Atlas (10 per cent. sol.) . .	3*d*.
(2) Béllit	1.75*d*.
(3) Carbolineum	1.5 to 3.8*d*.
(4) Chloride of zinc	.72 to .94*d*.
(5) Chloride of mercury . .	8*d*.
(6) Crésol-calcium	.46 to .6*d*.
(7) Crésoyle	3*d*.
(8) Green oil	1.9 to 4*d*.
(9) Jodelite	4.9 to 7*d*.
(10) Microsol	3 to 4*d*.
(11) Rueping	1.2*d*.
(12) Saccharine solution . .	1.36 to 7.5*d*.
(13) Solignum	4.2*d*.
(14) Sulphate of copper . . .	5.2*d*.
(15) Vulcanising	2.5 to 4*d*.

Discussion.

Mr. John Slater, F.R.I.B.A., the Chairman, said one reason for the recently increased importance of the subject was that it was becoming increasingly difficult to obtain timber thoroughly seasoned by natural means. He could remember a time when practically all the large builders kept stacks of timber in their yards for months or years in order that it should be thoroughly seasoned before conversion. He believed that such natural seasoning, when obtainable, was in the case of wood for building purposes better than any artificial method. If artificial means of preserving timber are adopted there are great risks of the timber being very green. Timber should be fairly well seasoned before any artificial process is employed. The systems described seemed to be more useful for timber of large scantling, such as railway sleepers, piles, and the like. The great enemy which architects and builders have to deal with was the *merulius lacrymans*, or dry-rot fungus. Most architects had had terrifying experiences of this fungus when it attacked the wood in houses. The fungus not only passed from wood to wood, but would crawl over brickwork, or, indeed, any substance, until it got hold of more timber. He regretted the falling into desuetude of the Kyanising process, in which the timber was saturated with bi-chloride of mercury, absolutely the best antidote known to chemists for preventing dry-rot. With regard to creosoting, he had an impression of hearing that creosote oil contained occasionally a certain amount of ammonia. In endeavouring to find a cure for fungus growths it was of great importance to obtain an artificial cultivation of the fungus. A German investigator found he got a beautiful growth by introducing ammonia into his preparation. It seemed, therefore, essential that ammonia should be separated from the creosote before the latter was used. Timber was a very bad conductor of heat, and unless great care was exercised one part of the timber treated by hot air or steam would be protected and other parts not. With the advance of electricity for lighting it would be a very great boon if some cheap process of rendering the thin wooden casing fireproof could be discovered. If such a system as that insisted upon for treating the woodwork of carriages on electric railways could be applied to render small scantlings, like those used in houses, fireproof it would be a great boon so long as it did not detract from the appearance in grain or colour.

Mr. H. Fergusson stated that timber was now usually seasoned by natural air-drying for six months, rather than by steaming, before the creosoting process was applied. The Chairman had referred to the thorough seasoning of building timbers; for this the old and slow methods had passed away. There might be traces of ammonia in creosote, but the latter was so destructive of the fungus as to negative any possible effect from its presence.

Mr. W. H. T. Powell said by his process of using sugar for the preservation of timber he was giving wood its natural food. Dry rot had been attributed to the mycelium, which fed upon the albumen in wood. But if the timber were raised above a certain temperature the natural food of the mycelium would be destroyed. His own solution had the power of carrying other substances obnoxious to animal life into the heart of the wood. The very core of the wood became impregnated and homogeneous. The sooner wood was treated the better, for by this process the sap was exchanged for the solution. He had had green oak being employed for the finest cabinet work within six weeks of felling.

Professor Percy Groom pointed out that decay of timber, which was largely preventable, meant a loss of millions of pounds. The remedy would be found in research. There was insufficient knowledge as to the origin of the various fungi, and this was particularly so in regard to timber in yards. Dry-rot originated with these timber and building yards, and he believed that simple sanitation without preservatives would decrease the evil. *Merulius lacrymans* could live on the driest of timber, producing millions of spores. The fungus did not require ammonia for its germination. There was regularly introduced into this country a large quantity of infected timber, particularly pine. This was probably responsible for the loss of enormous sums, and should be the subject of research. There was need, also, for investigation as to antiseptics, particularly in view of the fact that there were certain patent quack remedies which were worse than useless. He differed from everything said by Mr. Powell. In Germany an institution had been founded solely to investigate the causes of dry-rot. The United States had also made numerous investigations. The provision in this country was totally inadequate.

Mr. J. B. Murray thought the reason why the subject of wood preservatives had not been more extensively gone into here was apathy and the unwillingness of buyers to experiment on their own wood.

Mr. Wallis-Tayler, in replying to the discussion, said the Chairman had urged the desirability of rendering timber fireproof. He (the speaker) understood that "Burnettisine" was utilised by the Post Office authorities, and also for woodwork in the interior of ships. It was odourless, and a good antiseptic. He believed heat was the only cure for dry-rot. If a house in which dry-rot had started were subjected to a certain heat, the growth might be checked, but if the growths had been allowed to develop it was impossible to arrest them in that way. He agreed that sugar was a good preservative, for sugar vats were practically indestructible. No one would controvert the necessity for research.

LEEDS AND YORKSHIRE ARCHITECTURAL SOCIETY.

A general meeting of the above Society was held on Thursday evening, the 19th inst., at the Leeds Institute, Cookridge Street.

In the absence of the President and Vice-President, Mr. W. H. Thorp, F.R.I.B.A., occupied the chair.

Mr. Patrick Abercrombie, M.A. (Liverpool), gave a lecture on

The Architect's Sphere in Town Planning, Past and Present,

illustrated with lantern slides.

The lecture covered a large ground, practically showing the whole development of town-planning, and dealing with the component parts of the problem from the æsthetic, the traffic and the socialogistic points of view. The paper was largely an attack upon architects for not interesting themselves sufficiently in matters of town-planning of the present day.

Mr. Abercrombie concluded his lecture with a comparative diagram showing the density and disposition of English towns, continental towns, the modern garden city, and a suggestion for the future development of cities. The latter showed concentration of the centres for commercial purposes by the use of skyscrapers, so obtaining quicker transport into the outlying country in which were distributed the houses, the works and the manufacturers also being concentrated in another locality.

The discussion which followed largely centred around the last proposition, and a vote of thanks to the lecturer was heartily accorded, on the motion of the Hon. Secretary (Mr. W. Whitehead, A.R.I.B.A.), and seconded by Mr. J. H. Foggitt, A.R.C.A., A.R.I.B.A.

SHOOTING BOX, LOCHGILPHEAD, ARGYLLSHIRE, N.B.

(*See Illustrations*, pp. 222, 223.)

This house, recently completed for Ralph Walker, Esq., of Leicester, has been erected in the midst of what is considered the finest scenery of the Western Highlands, and commands fine views on all sides. It stands on a thickly wooded slope about 150 feet above the road and Loch Sween, which flows at the side. The views show the entrance front and a corner of the ingle in the living hall; unfortunately photographs cannot be obtained of the main front on account of the proximity of the house to the edge of the slope mentioned above.

The external walls are constructed of native stone, but on account of its porosity, have had to be harled; the internal walls are of brick; the freestone dressings are from Auchenheath, and the slates from Ballachulish. All material had to be brought by lighter to within two miles of the site and then carted. The main rooms have been treated in oak; eight attics have been formed in the roof, forming the servants' quarters. The steel casements and leaded glazing have been carried out by Messrs. Mellowes & Co., Ltd., of Sheffield and London; the heating apparatus was installed by Messrs. G. N. Haden & Sons, of Trowbridge, and the general contractor was Mr. James Carmichael, of Kilmichael, Glassary, Lochgilphead, N.B. Messrs. Albert E. King & Co. were the architects.

Mr. Reginald Blomfield, R.A., is preparing a report for the Board of Management on the proposed restoration of Sulgrave Manor, Northamptonshire, formerly the home of George Washington's family. The scheme will probably include a meeting hall, a room for the board, and caretakers' offices.

BUILDINGS FOR SMALL HOLDINGS.*

By A. Ainsworth Hunt, M.S.A.

My purpose in addressing you this evening is to bring before you some of the recent developments affecting the buildings which have been or should be erected for small holdings.

Problems in Planning.

The first question to be considered in planning a set of buildings is: What is the land expected to produce? Speaking generally, I think the buildings should be divided into three groups—(1) market gardening; (2) general farming; (3) dairy farming. The houses for each of these classes of holdings can be much the same, but the farm buildings must be especially arranged for the special purpose for which they are required.

The House.

The class of house to be erected must necessarily depend somewhat on the size and nature of the holding. For a holding of, say, ten acres or under, which is not used as a market garden, a house of the nature of a labourer's cottage will be quite sufficient. This should contain: Living room or kitchen, 15 feet by 12 feet; scullery, 8 feet by 10 feet; larder, 6 feet by 4 feet; three bedrooms, 12 feet 6 inches by 12 feet, 11 feet by 9 feet, 9 feet by 8 feet. This arrangement may be varied by providing a small parlour and a combined living room and scullery. I will deal with this point again later. An earth closet should be provided situated away from the main building, and a good fuel store, at least 7 feet by 5 feet. As the holding increases in acreage, the size of the house must be increased also. A holding of twenty-five acres should have a sitting room or parlour. The house would then contain: Parlour, 12 feet by 10 feet; kitchen, 13 feet by 15 feet; scullery, 10 feet by 9 feet; larder, 6 feet by 4 feet; fuel store, 7 feet by 5 feet. Three or perhaps four bedrooms: No. 1, 12 feet by 13 feet; No. 2, 12 feet by 10 feet; No. 3, 10 feet by 10 feet; No. 4, 9 feet by 8 feet. In addition to the above, on most holdings a dairy will be required, the minimum size of which should be 5 feet by 8 feet. This would only be sufficient for two cows. If the holding is to be devoted principally to dairy farming, the size of the dairy must be increased proportionately.

In considering the planning of the house, the general conditions of house-planning will apply, but I should like to draw particular attention to one or two points.

The Kitchen or Living Room.—This is the room in which the family will mainly live. It should, therefore, have the best aspect, which should be south or south-east, even if there is a parlour provided, for experience shows that the kitchen will be always in use, but the parlour only occasionally. Most careful attention should be given to the position of doors and windows. The cooking range should be in this room. It should also contain a good dresser and cupboard. In many districts it is usual to provide a tiled floor.

The Scullery.—In the scullery most of the dirty work of the house is done. This should contain the sink, copper, and a small fireplace for occasional use in summer. It is not necessary to put a proper stove in the fireplace opening. A few bars across the front and a grating at the bottom are all that are necessary, as wood is generally burnt in the scullery. It is also advisable to put a brick oven, so as to encourage the baking of bread at home. A scullery should not be made too large, or it is likely to be used as a living room. The door of the scullery must be so placed as to give easy access to the farmyard, and the kitchen or scullery window should command a view of the farmyard, so that the wife may see what is going on out there when the husband is away on the land. Care should be taken to see there is a suitable place for wash tubs, mangle, &c. It is also very desirable that a bath should be provided.

The Larder and Fuel Store.—These require to be made larger than those of the average small town house. In the larder a larger stock of provisions has to be kept, as shopping is not very convenient in the country. There should be storage room for all kinds of home-made provisions and a barrel of beer, also room for salting pans for bacon, as these cannot be kept in the dairy. In the fuel store provision must be made for wood as well as coal. It should be borne in mind that in the country coal can seldom be obtained economically in very small quantities.

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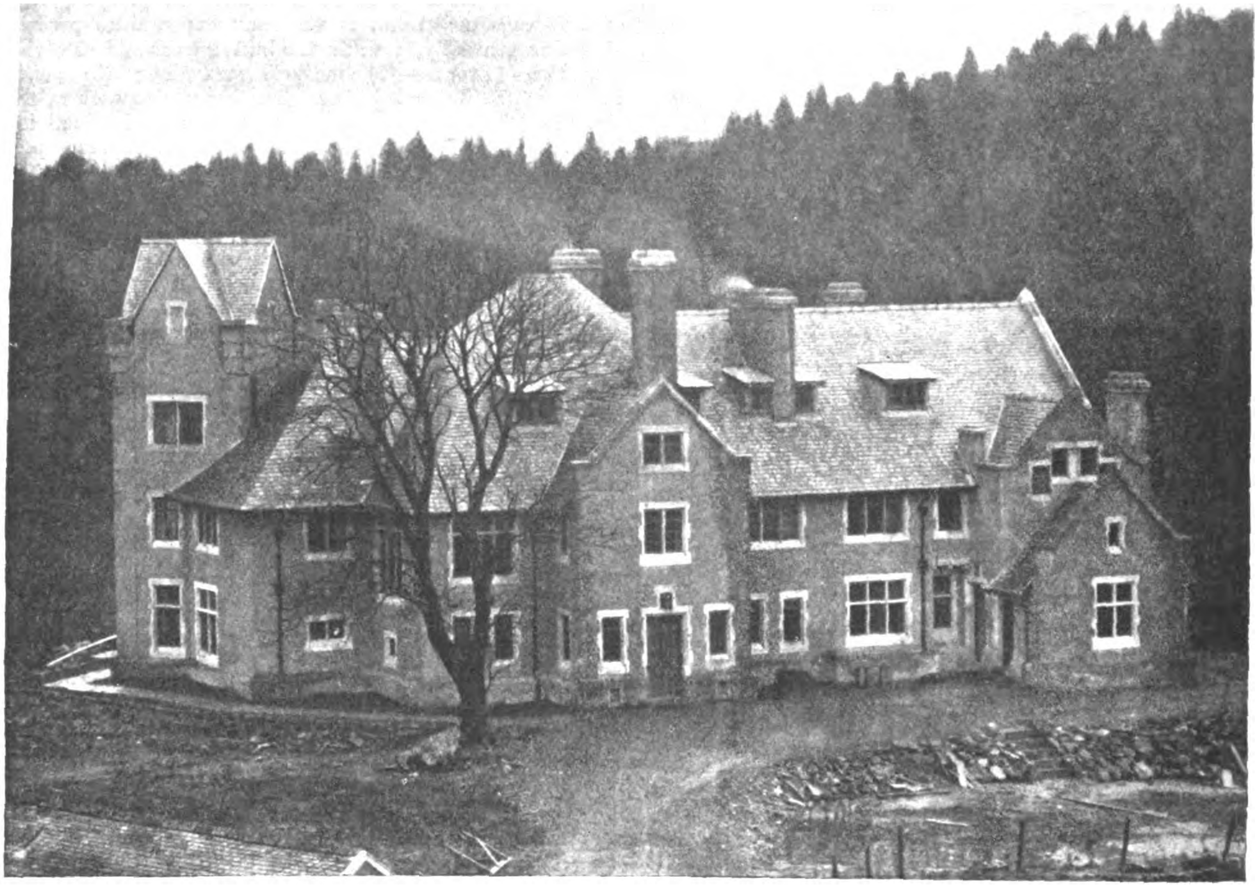
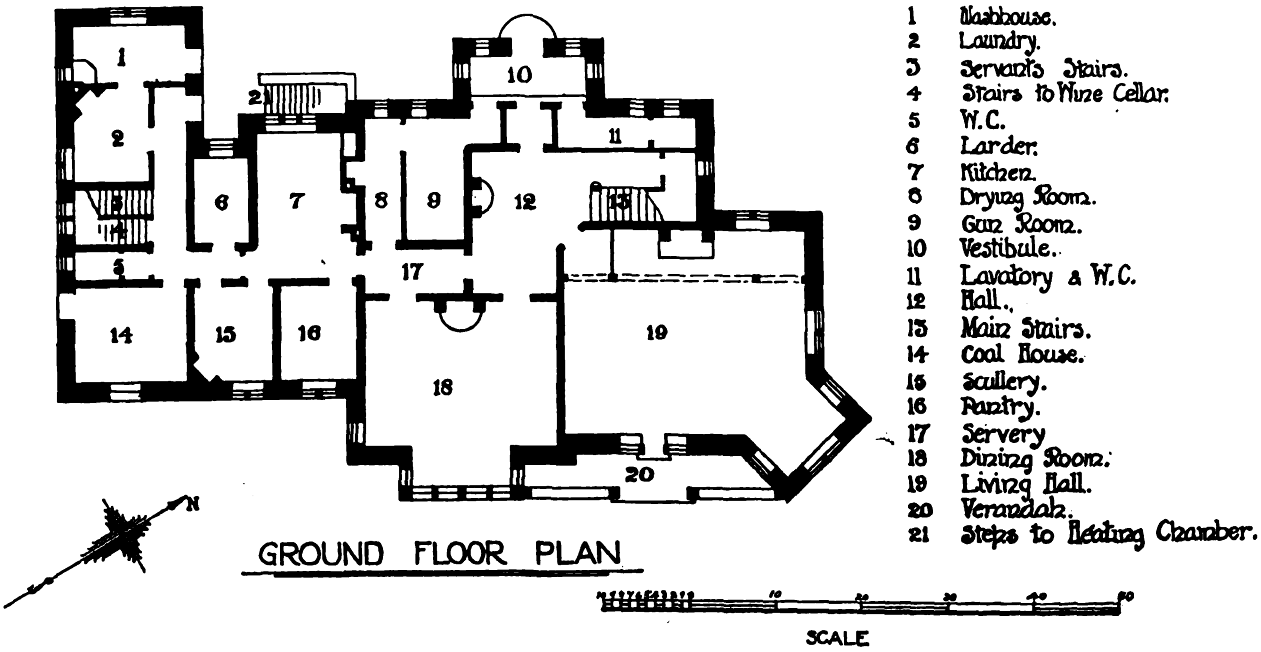
* Abstract of Paper read before the Society of Architects on February 12.

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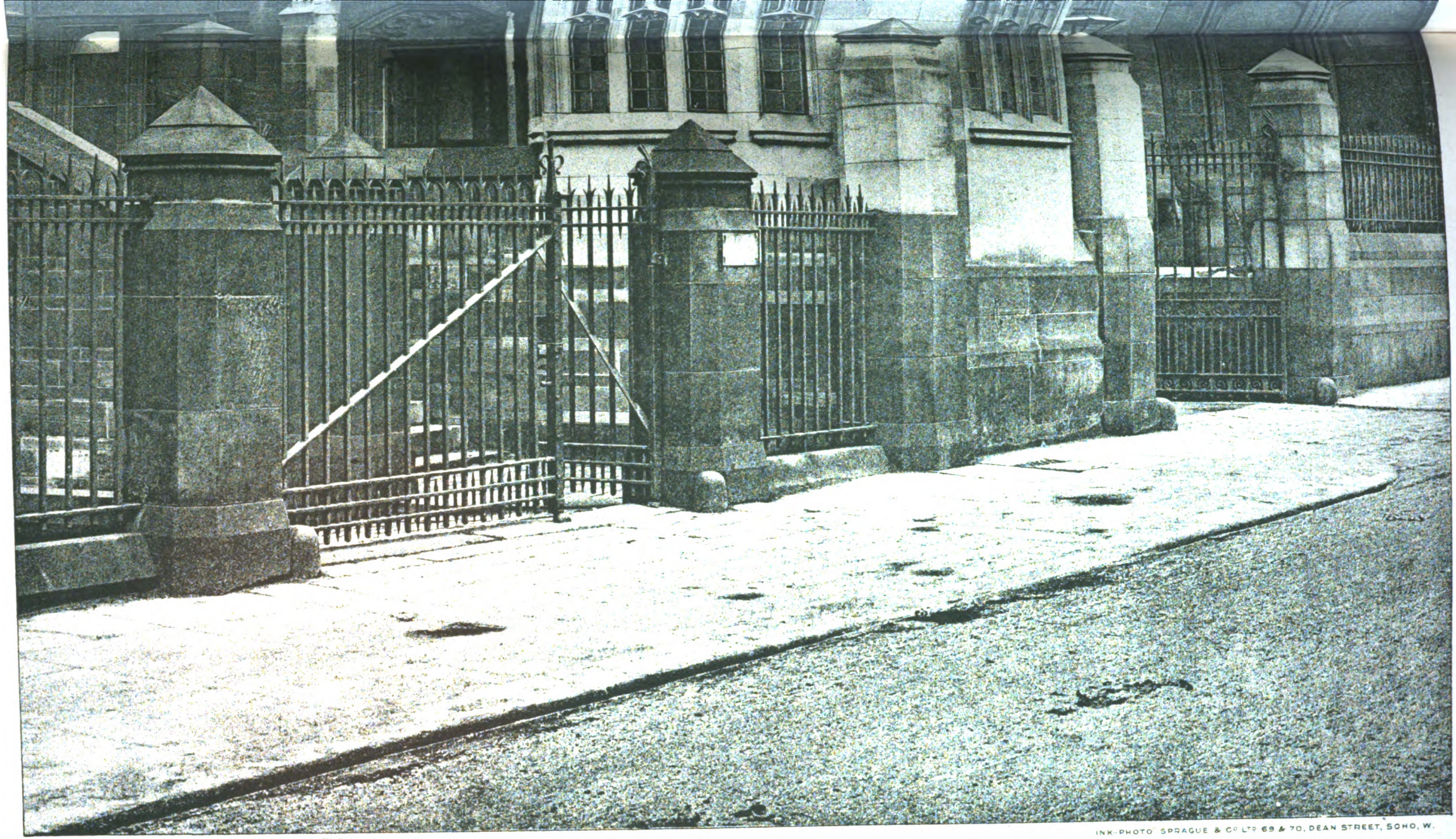
GROUND FLOOR PLAN
1 Washhouse.
2 Laundry.
3 Servant's Stairs.
4 Stairs to Wine Cellar.
5 W.C.
6 Larder.
7 Kitchen.
8 Drying Room.
9 Gun Room.
10 Vestibule.
11 Lavatory & W.C.
12 Hall.
13 Main Stairs.
14 Coal House.
15 Scullery.
16 Pantry.
17 Servery
18 Dining Room.
19 Living Hall.
20 Verandah.
21 Steps to Heating Chamber.
10
20
30
40
50
SCALE

SHOOTING BOX, LOCHGILPHEAD, ARGYLLSHIRE, N.B.—Messrs. Albert E. King & Co., Architects.

The Dairy.—On most small holdings, a dairy will be required, as one or two cows are almost certain to be kept, to provide milk and butter for the family. Under no circumstances should the dairy open into any room in the house, and it must always be quite separate from the larder. It must be well ventilated and lighted, have a north window if possible, and all means of ventilation should be fitted with flyproof wire gauze. The floor should be tiled or stone, with proper means for washing same. The shelves should be of slate, and not fixed quite close to the walls.

The Bedrooms.—In planning the bedrooms it is important to see there is a suitable place for the beds—a point often overlooked in cottage construction. In the large bedroom provision is required not only for a double bed, but frequently for one or two cots.

The Parlour.—The question of a parlour in very small houses is a point upon which there is a great difference of opinion. Some people assume that a parlour is not necessary. Personally, I am inclined to think that for country houses where only two rooms are provided it will be much



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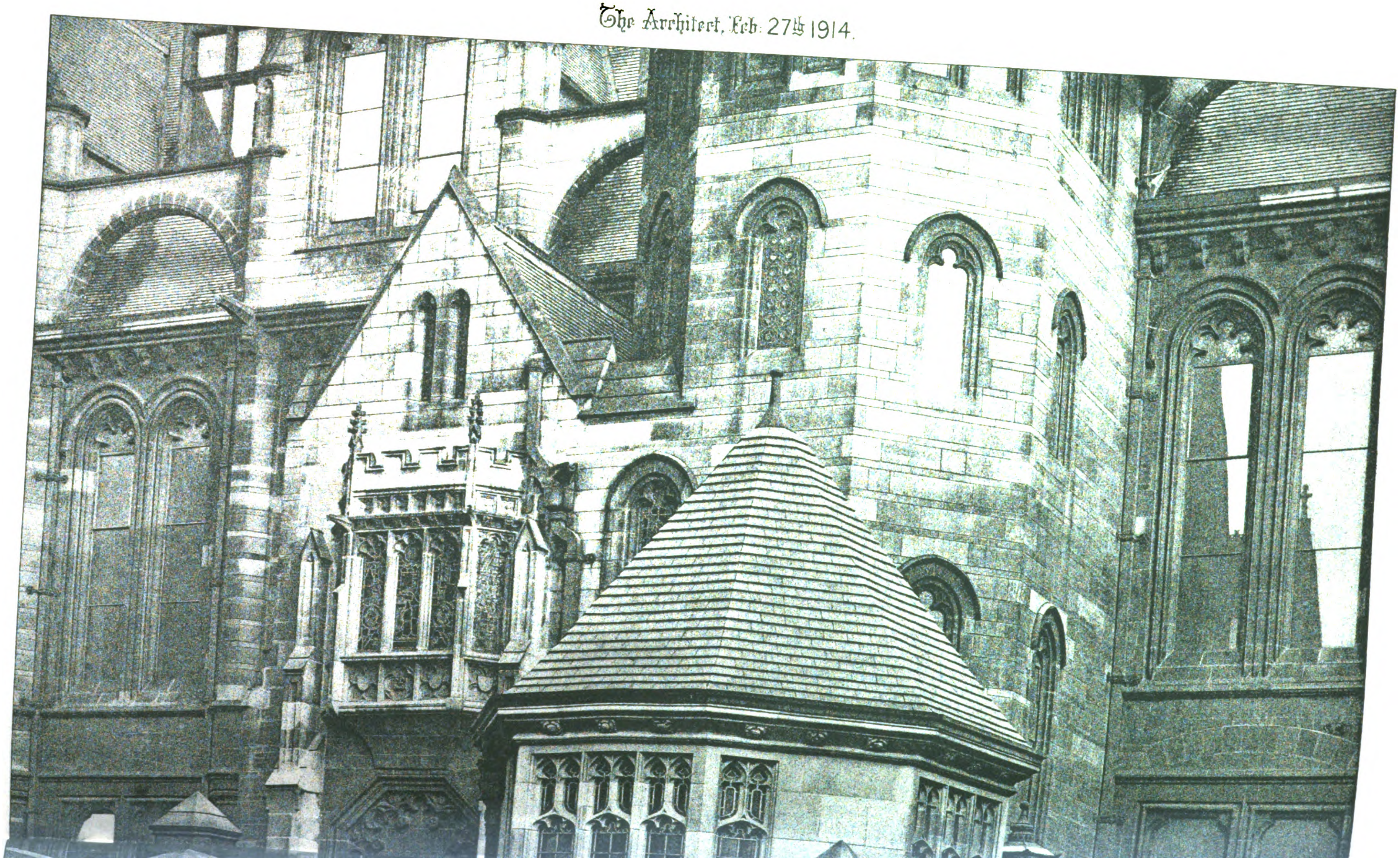
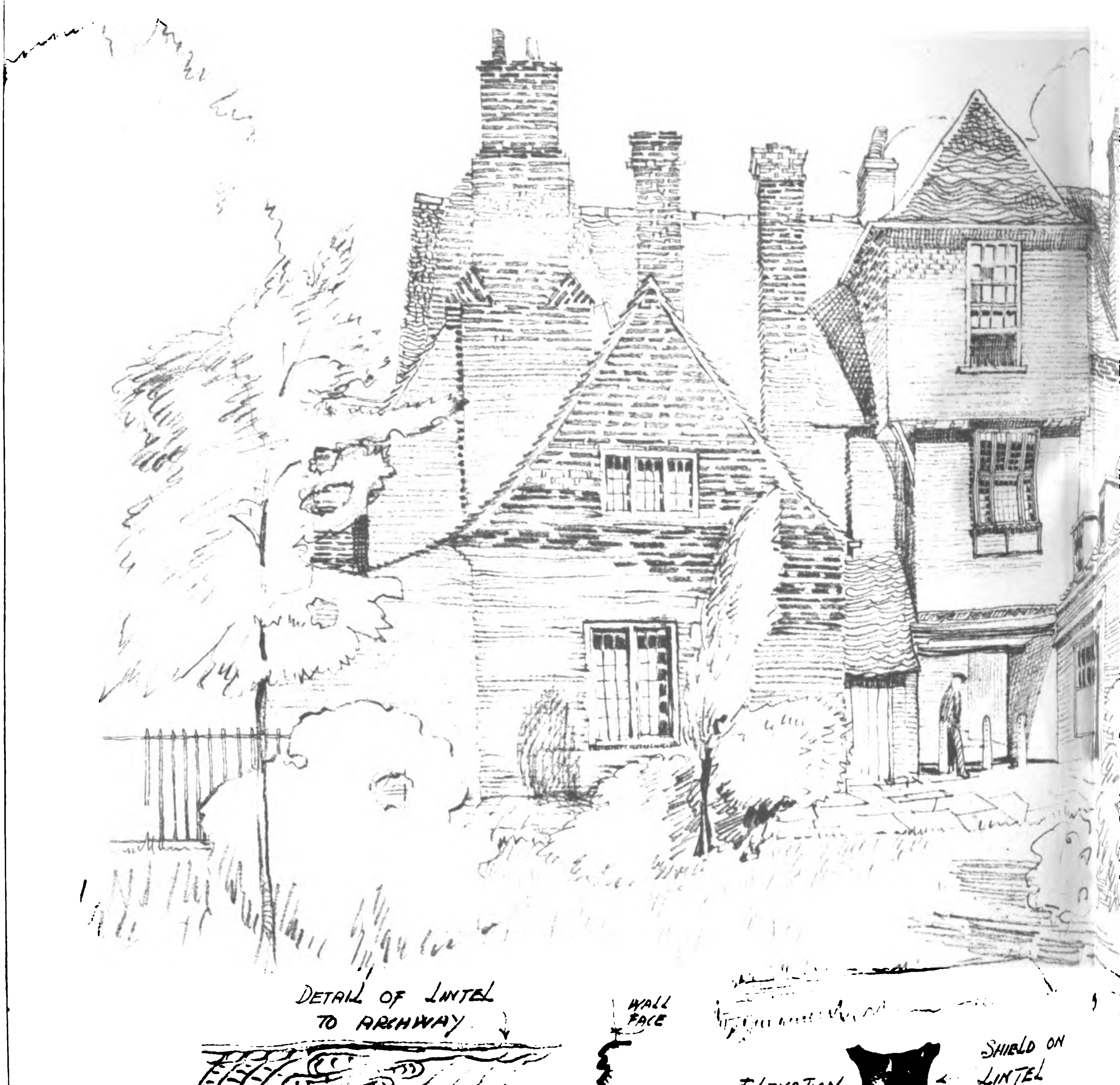
NEW PORTER'S LODGE, MANCHESTER UNIVERSITY.

Mr. PAUL WATERHOUSE, M.A., F.R.I.B.A., Architect.

The Architect, Feb. 27th 1914.



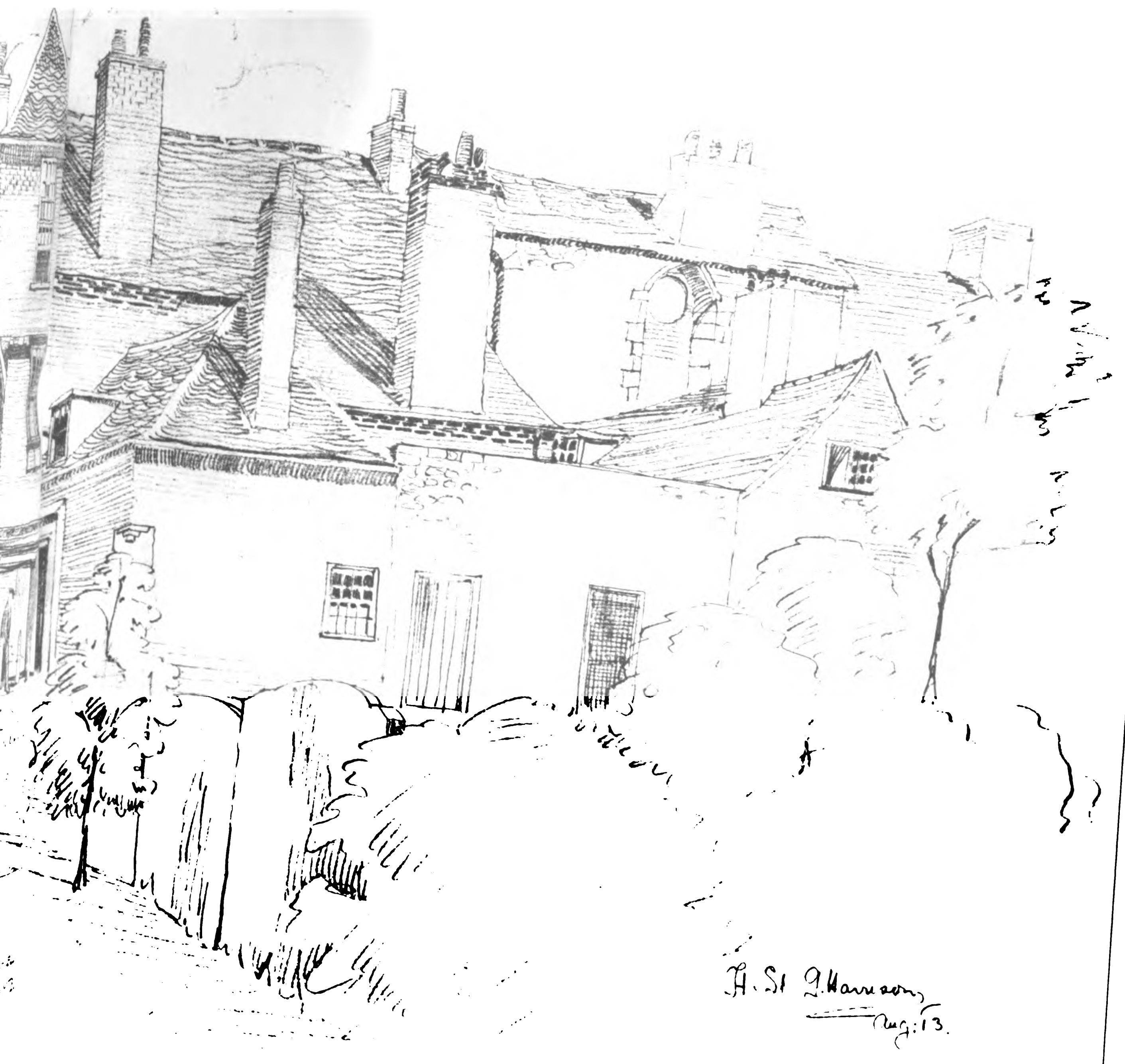
GRAINGERS' PORCH ELY


DETAIL OF LINTEL TO ARCHWAY
ELEVATION.
WALL FACE
SECTION
ELEVATION
SHIELD ON LINTEL
PLAN.

"THE ARCHITECT" TRAVEL NG

From a drawing by Mr. St.

Feb: 27th 1914.



H. St J. Harrison
Aug: 13.

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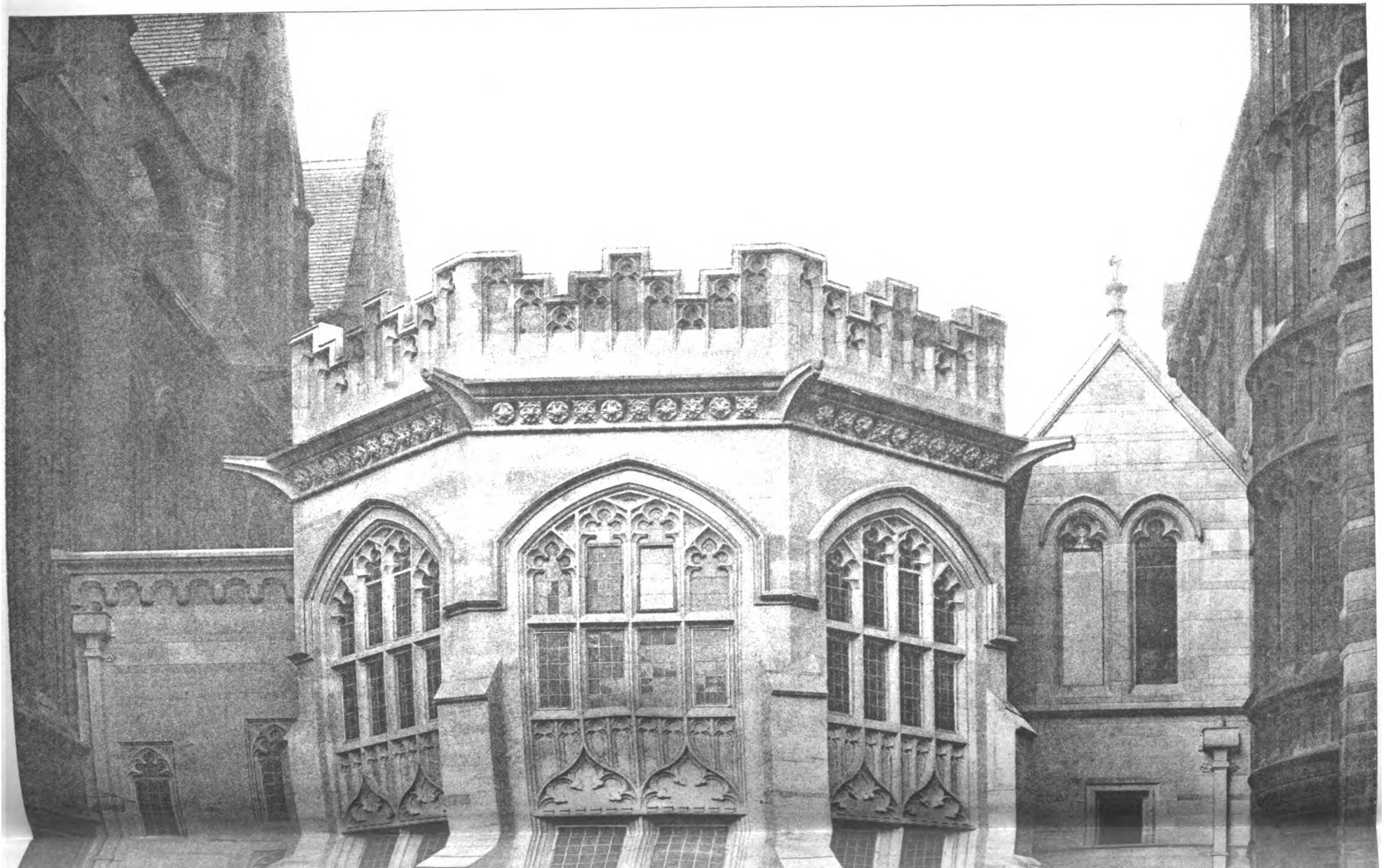
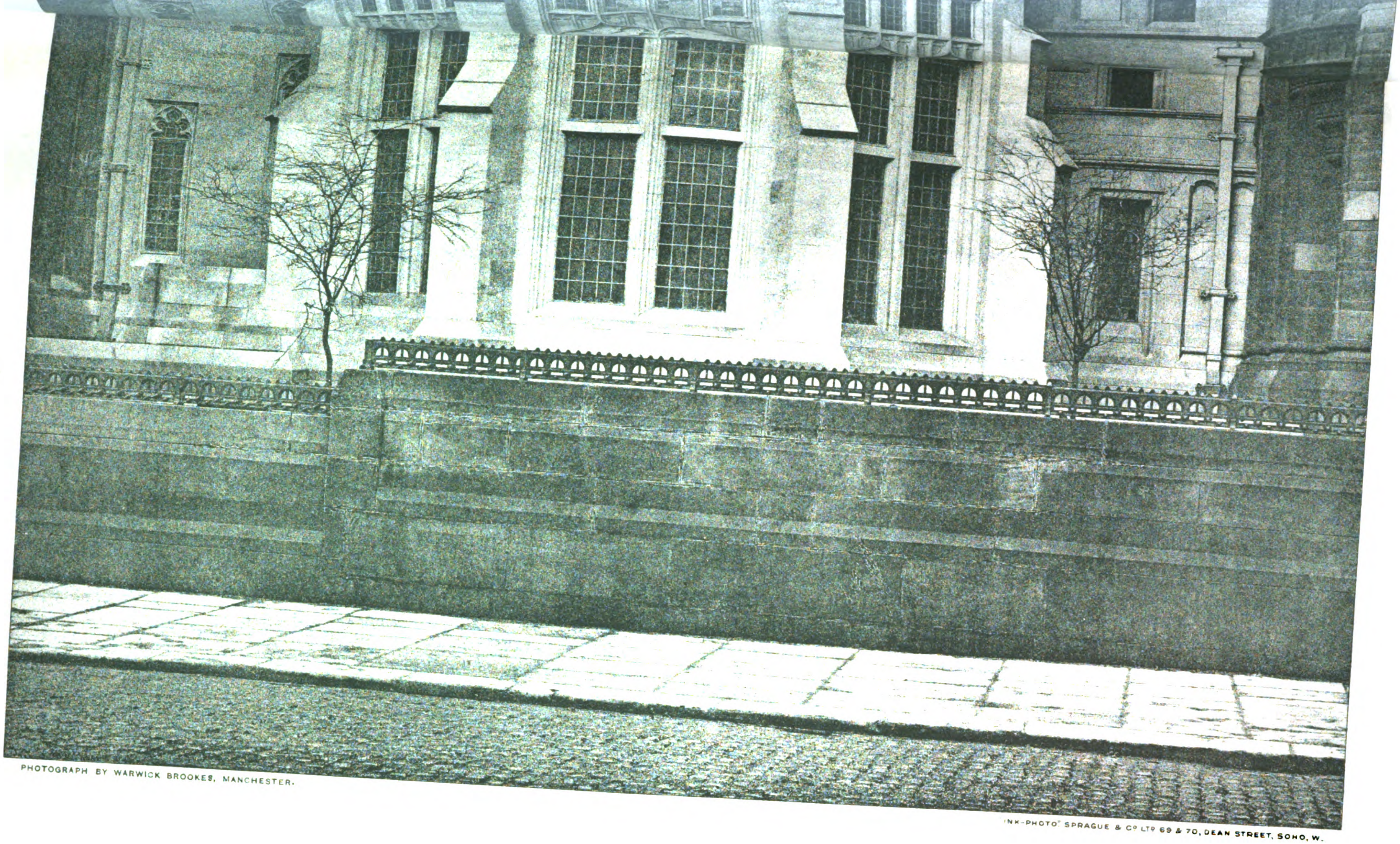
ING STUDENTSHIP, 1913.

H. St. JOHN HARRISON.





PHOTOGRAPH BY WARWICK BROOKES, MANCHESTER.

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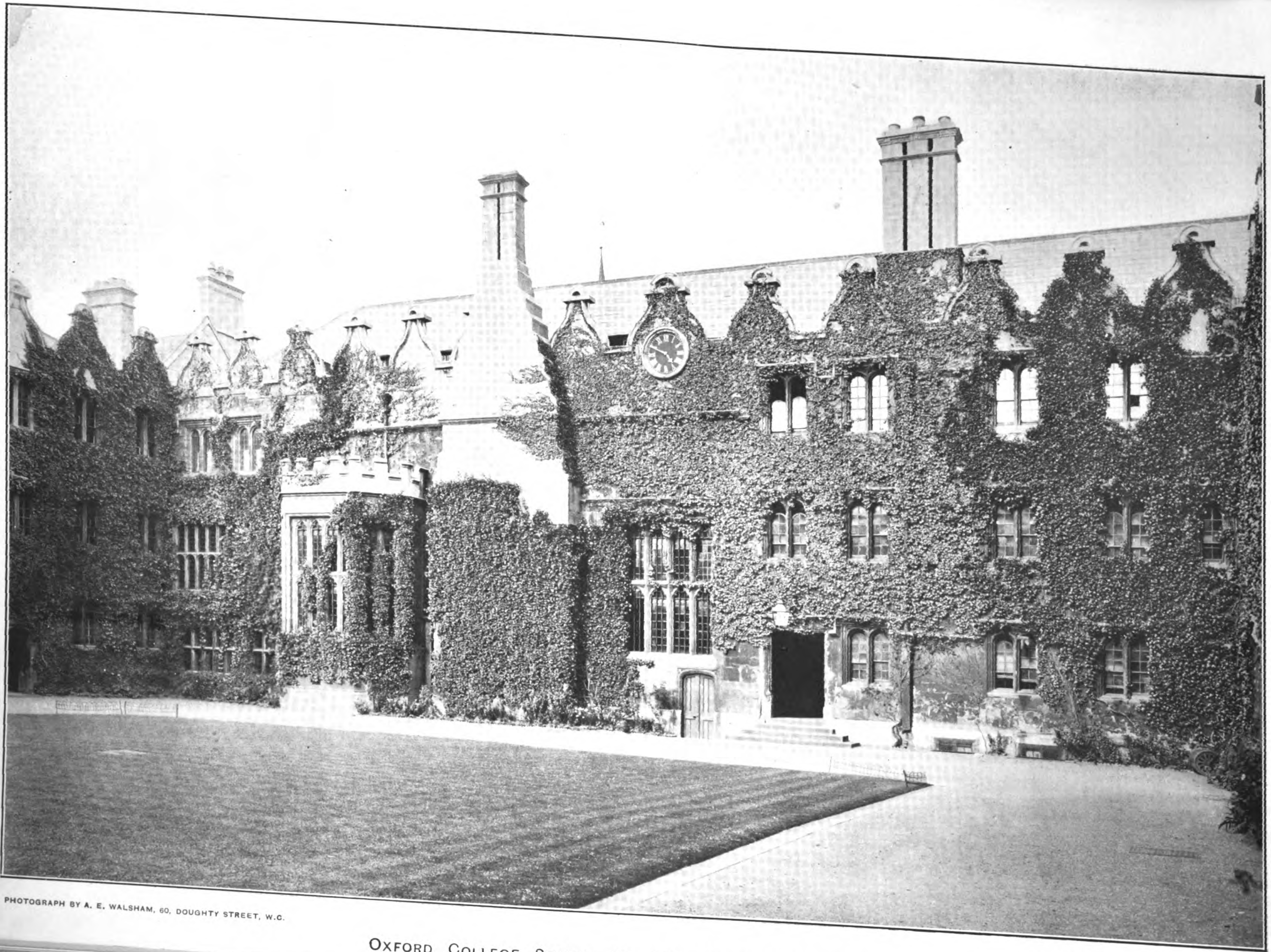
Mr. PAUL WATERHOUSE, M.A., F.R.I.B.A., Architect.



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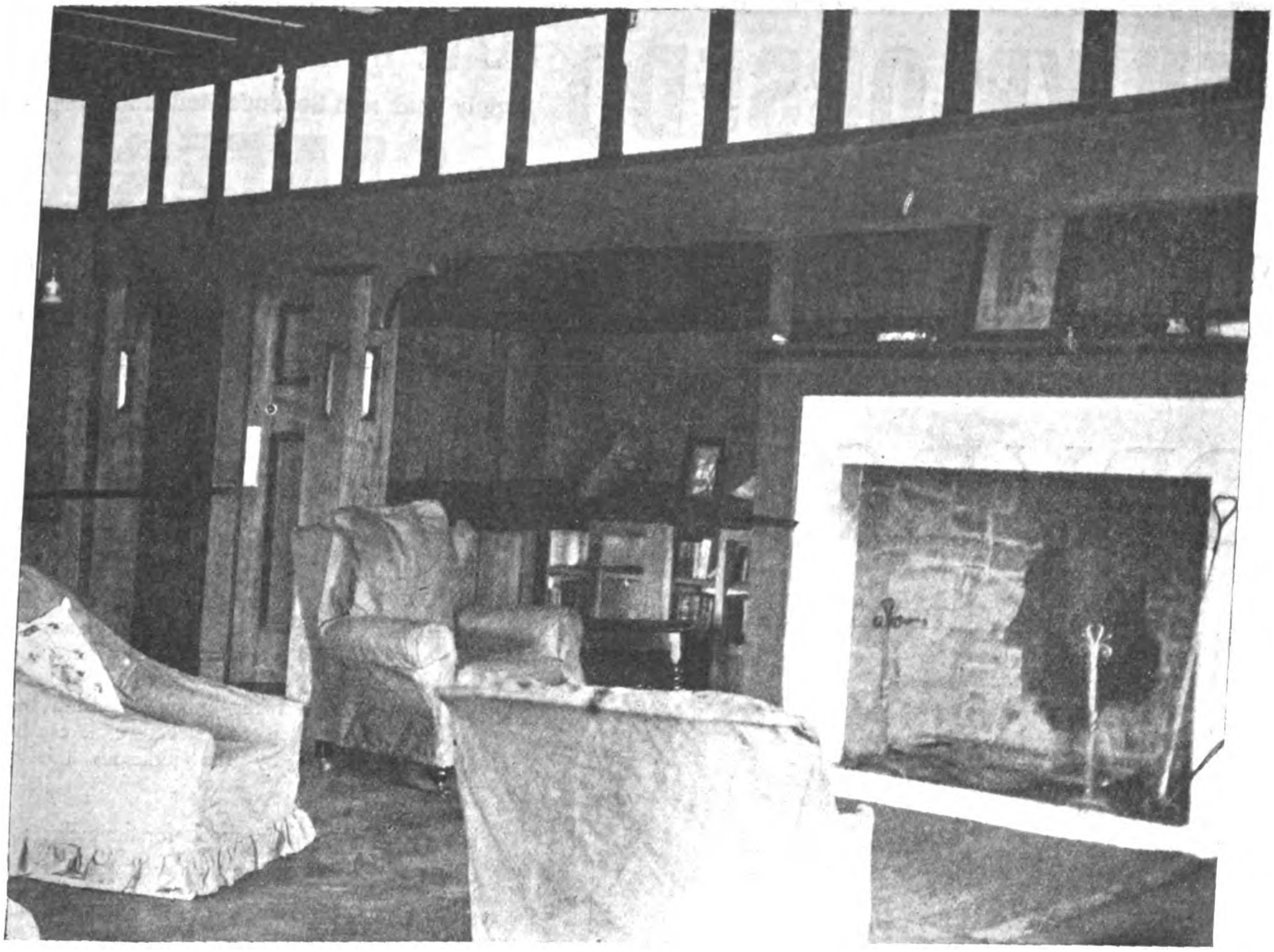
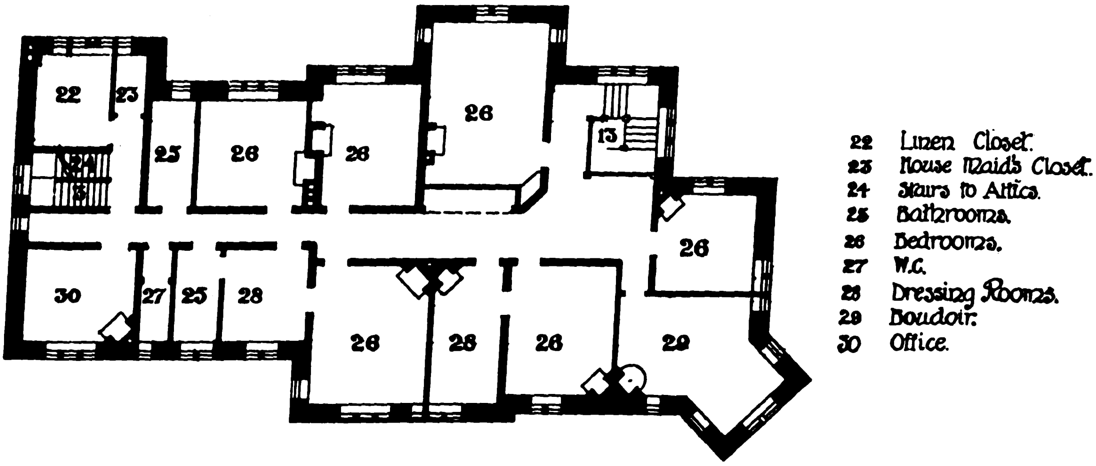


INGLE IN LIVING HALL.



FIRST FLOOR PLAN

SHOOTING BOX, LOCHGILPHEAD, ARGYLLSHIRE, N.B.—Messrs. ALBERT E. KING & Co., Architects.

more appreciated by the poorest family if a small parlour is provided, and a large combined living-room and scullery, which would then contain the cooking stove, sink, and copper. The sizes of the rooms would then be: Parlour, 12 feet by 9 feet 6 inches; living-room, 12 feet by 13 feet. It is difficult to alter the habits of the labouring classes by providing rooms for them which they will not use as they should. Even the agricultural labourer generally has a few small articles of furniture which he specially values, and likes to display them in his "best parlour," as he generally terms it. A certain amount of house pride may be beneficial in keeping the home neat and tidy.

When three living-rooms are provided in the larger type of house a room 12 feet by 10 feet 6 inches will be quite large enough for the parlour, and will give a fair size second bedroom over it.

Washhouses.—In some districts a washhouse is required away from the house, separated from the scullery. On a small farm a building of this description serves other useful purposes, such as a store for cycles, perambulators, &c. If a separate washhouse is erected it is not a bad plan to provide two coppers, one for the family laundry and the other for boiling food for cattle, it being obvious that one copper cannot serve the two purposes.

The Structure of the House.—In deciding on the structure of the house much must depend upon the local materials at hand, but the building should be of such a nature as to ensure the minimum of expenditure in subsequent repairs and upkeep. Economy should therefore be sought by careful planning and construction, and not by undue cutting down of the size of the room, or the quality of the materials, workmanship and fittings. In selecting materials preference

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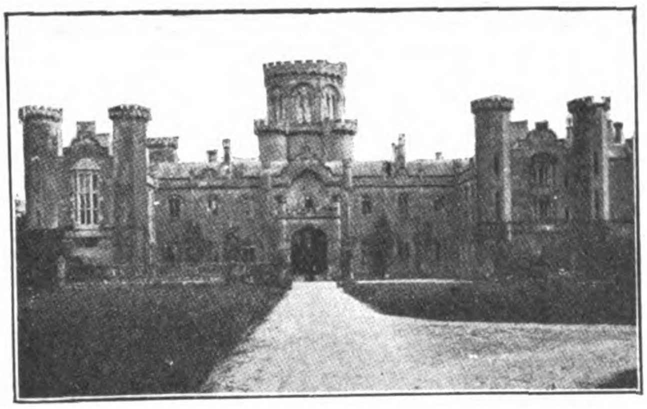

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(Signed) J. P. JENKINS, C.E.
(Borough Surveyor)."

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should always be given to those which belong to the district. The old-fashioned method of giving a wide projection to the eaves and gables will materially assist in keeping the walls dry, but the gables should not have an expensive barge board and timber work, which is costly in upkeep, in the way of painting. The height of the rooms on the ground floor should be 8 feet from floor to ceiling, and the bedrooms 6 feet 6 inches to the springing of roof and 8 feet 6 inches to the collars of the ceiling.

The Floors.—The most economical floors are concrete, and will do very well for the scullery, pantry, and dairy. The kitchen or living-room floor should be generally of good red tiles on concrete, but in some districts there is a prejudice against this. A considerable amount of mud is brought into the house at times, and tiles are much easier to clean than boarded floors. If a boarded floor is used, it is likely to be covered with linoleum, and this has a tendency to encourage dry rot, especially on new floors.

Windows.—The simplest and most economical window is the Yorkshire slide, and if oak sills with oak pegs are used instead of the retaining fillet they are very durable. Casement windows come next in the matter of simplicity, but care should be taken to see that a sufficient amount is made to open, especially above the transom.

The Site and Drainage.

In choosing a site the cost of the scheme will depend very much on the facilities for water supply and drainage. Where available, land should be chosen which will allow of the houses being placed so that the ground will fall away from them, particularly at the back, where slop water has to be dealt with. In some districts it is not usual to provide drains or even a sink. The slop water is simply thrown on to the land, but this has a tendency to cause a nuisance near the house. The best means of dealing with the slop water from a small farm is to put the usual sink and gulley and a length of drain, say, 20 feet to 30 feet from the house, and from this point lay a few lines of field drains, if the soil is suitable, radiating from a point from where the glazed drain stops. The liquid can then easily be distributed where required. Another method is to sink the land immediately adjacent to the outlet, and provide a galvanised iron tank on wheels; the distribution of the water over the land can then be easily carried out. If the ordinary cesspool is provided, it is usually not watertight, with the result that it is liable to percolate into the subsoil and pollute any well near. If it should be watertight it results in the slop water remaining in the cesspool until it becomes offensive, and then there is a large quantity to deal with at one time upon the same area of ground.

Water Supply.

The provision of a good water supply is absolutely necessary for a small farm. The cost of a deep well is generally prohibitive, unless it is intended to supply a group of small holdings. When water can be found at a reasonable depth, a shallow well will generally be sunk into the water bearing stratum, but it is essential to guard against any risk of contamination. The well should be lined with bricks or concrete, and made watertight to a sufficient depth to prevent the percolation of surface-water into it.

In some districts where there is no water-bearing stratum at an available depth recourse must be had to the storage of rain-water for domestic purposes. In that case a strong storage tank must be provided. This should be built of brickwork or concrete, and made thoroughly watertight, so as not only to retain the water, but exclude any surface water. The top should be domed over much the same as an ordinary well; an overflow pipe should be provided, and this, as well as the outlet, should be protected by grids to exclude vermin. Arrangements should be made to exclude the first flush of rainwater from the tank, as this will not generally be very clean.

The maximum amount spent on the house should never exceed £350, and on the buildings £400, as this, with interest, sinking fund, repairs, management expenses, &c., on a fifty years' loan will be equal to a rent of 5½ per cent., or £41 5*s*., which is as much as a small holder on the maximum of fifty acres can afford to pay.

The Farm Buildings.

In considering the nature and character of farm buildings necessary to meet the convenience and requirements of small holders, it is obvious that the difficulty of laying down definite rules is even greater than in the case of houses. The house may be much the same, whatever the nature of the holding, but the farm buildings must be specially planned to meet the requirements of the particular holding concerned.

In planning the buildings, allowance should be made for the possibility of future extension, and the type of buildings provided should be capable of being added to without much difficulty; only the minimum of accommodation should be provided at the outset. If the tenant is consulted beforehand, care must be taken not to provide equipment in excess of what the holding can produce, for he will generally take a rather extravagant view of his requirements, without realising the extra amount of rent or interest involved.

The smallest type of buildings are those required for market gardening or fruit growing. The requirements for this will be: A packing shed, fruit store, stable and cart shed, a rough shed for tools and artificial manure. A very good timber building of this class could be erected for about £100.

Arable Holding of Twenty to Thirty Acres.

The equipment for a holding of this character can be very simple, and would contain the following: Fodder and chaff house, 14 feet by 15 feet; stable for two horses, 12 feet by 15 feet; cattle shed, 14 feet by 18 feet; cart shed, 14 feet by 18 feet. For holdings of larger size the chief additions would be the provision of loose boxes, cow stalls, and possible stabling for an extra horse.

An extra loose box is a great convenience. It can be used for so many purposes, for calves, pigs, or a sick animal. The general opinion amongst modern farmers is that the old-fashioned pig sty should not be built. Pigs do much better in a loose box, and should have the run of the yard or a field. It is a good plan to provide a low platform of wood upon which the pigs can lie. This should be portable, so that it may be moved when the box is required for other purposes.

All stables should have floors of grooved concrete or grooved paving bricks, and laid with a good fall. Care should be taken to see there is proper ventilation without draught. Barn floors should be of concrete, or preferably of wood. Cart sheds should have backing rails and guard posts. The stables, cow houses, cattle sheds, &c., should be readily accessible from the barn or mixing house, so as to save labour in carting fodder.

It is most important that stock-yards should be sheltered from the north and east winds, and at the same time open to the sun and air. The buildings are therefore best planned L-shape, and placed backing to the north and east. All the doors and windows should be on the south and west, and opening into the yard. The cattle will thus, when in the yard, get all the sun and be protected by the buildings from cold winds.

Dairy Farming.

The main object on a holding of this description is to provide sufficient cow-houses at the lowest possible cost. The cost will work out at about £10 per stall if built of brick and tile, and £6 or £8 if built of timber.

Cowsheds must comply with the requirements as to cubic space laid down by any regulations adopted by local authorities under the Dairies and Cowsheds and Milk Shops Order. The usual minimum space prescribed is 800 cubic feet per cow, in cases where they are habitually kept in the building, and 600 feet where they are turned out for part of the day. The lower figure will be quite as much as is necessary on a farm. In calculating the cubic space it is usual not to allow anything above 12 feet in height above the ground-line. The lighting of cowsheds is a matter of great importance, as good lighting is one of the essentials for clean milking. The simplest method is by glass tiles in the roof, but windows should also be provided both for light and ventilation. The space admitting light should not be less than 2 square feet per cow.

The cowshed should have a grooved concrete floor, but rammed clay or chalk for a width of 4 feet from the manger will make a more comfortable surface for the cows to kneel on, and will help to prevent swollen knees. The gutter should be formed in the concrete with a roughened surface. It should be 2 feet wide and 6 inches deep, with a fall of 1½ inch to the gangway, and a semi-circular channel for liquid formed at the back about 3 inches wide. The gutter should have a fall of ½ inch per yard, and discharge 6 inches beyond the wall, with glazed pipes. A grid should be fixed at the end to prevent solids entering the drain. The drain from the gulley should lead into a liquid-manure tank, which should be watertight and fitted with either a loose top or a pump.

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The feeding trough should be a semi-circular trough, formed of concrete or glazed stoneware, and should be continuous in length so that it can easily be cleaned out, and if supplied with tap or pump at one end, and a waste at the other, it will make a good water trough as well. Arrangements for tying cows are required, but all other fittings, including stall divisions, are superfluous.

Allowing 3 feet 6 inches per standing for cows will be quite sufficient, so that twelve cows in a line will require a building 42 feet long. The width will be 14 feet to 15 feet, as follows: Feeding trough, 2 feet; standing, 6 feet; gutter, 2 feet; gangway, 4 feet or 5 feet, preferably the latter. Where there are less than twelve or fourteen cows, a feeding passage is not necessary. It is important in all farm buildings to keep the horses and cows well separated, as any odour arising from the stable is liable to put the cows off their feed, and consequently affect the milk.

In some parts of the country there is a great prejudice against drains of any sort for farm buildings; the liquid manure is run into the yard, which is littered down from time to time to soak up the moisture. If drains are provided they should all be collected together and run into a manure tank. This should have a pump fixed at a good height from the ground (so that a cart may be backed under it), and the liquid manure pumped into it, for carting to the land. If a small holding should be situated in any district which is sewered, the liquid manure should never be run into the drains, as by that means it would be wasted. A class of farm buildings which is being largely used now is provided with what is known as the open (or Yorkshire) boarded roof. These are generally wooden buildings on brick or concrete foundations, with stud walls, weather boarded outside. The roof is covered with boarding laid at right-angles to the purlins, each board being grooved on the top about 1 inch from the edge, and fixed with a space of about ⅛ inch between each board. A roof of this description looks as if rain will simply pour through it, but it does not. In constructing the walls three sides must be completely closed in, and a portion of one side left partly open. This causes a slight upward current of air, and prevents any rain coming through the joints between the boards. The barn and chaff-house should be kept at one end of the building, and this portion should be tiled or slated. This class of buildings is most economical in construction and very healthy for cattle, being warm in winter and cool in summer. They are most suitable for large cow-houses.

In conclusion, I would point out that it is impossible to lay down any definite regulations to suit particular buildings, as agriculture and the method of living differs very considerably in various parts of the country. Architects and county land agents should pay particular attention to small holdings for the next few years, as large sums of money will inevitably be spent upon them; and it is only by care in planning every detail with special reference to the need of the localities concerned and the industry in question that the small capitalist can make a living upon his holding.

BUILDING PROGRESS IN THE PROVINCES AND SUBURBS.

A LIST OF WORKS PROJECTED OR COMMENCED.

(N.B.—Local Authorities, architects, and others are invited to submit full particulars for insertion in this weekly list. Where districts are not entered against names of architects and builders the address is as a rule local.)

ENGLAND.

Bedfordshire.

Bedford.—House, Beverley Crescent, for Mr. A. Richardson.

Twelve houses, Pearcey Road, for Mr. H. Burridge.

Buckinghamshire.

Aylesbury.—Six houses, Madeley Road, for Mr. W. G. Ellis.

Cambridgeshire.

March.—Workmen's dwellings.

Cheshire.

Altrincham.—Hospital: proposed enlargement (£5,000).

Chester.—Infirmary.

Congleton.—St. Peter's Schools: improvements.

Delamere (near).—Six houses, Eddisbury. Mr. E. T. Ward, architect, Brockhurst Street, Northwich.

Knutsford.—Parish Church: proposed extension and restoration (£2,500).

Cornwall.

Ludgvan.—County School for about fifty places.

Penzance.—Twenty-two workmen's houses, Weethes Fields. Council surveyor.

Durham.

Newbottle.—Two houses, Philadelphia Lane, for Messrs. Liddell Brothers.

Pelton.—113 houses, for Mr. P. Duffy.

Whickham.—Conversion of property, Church Chare, into village institute, for Messrs. White & Stephenson.

Essex.

Clacton-on-Sea.—Police Station. Mr. F. Whitmore, County architect, 73 Duke Street, Chelmsford.

Southend-on-Sea.—Special Subjects Centre, Westcliff-on-Sea (£3,000).

Gloucestershire.

Bristol.—Drill Hall, messrooms, billiards and reading rooms, &c., Old Market Street, for 4th Batt. Gloucester Regiment.

Hampshire.

Fareham.—Asylum: six cottages for the staff (£1,400).

Hertfordshire.

Bishop Stortford.—The "Bon Marché," South Street: rebuilding.

Kent.

East Malling.—Fruit research station (£900).

Lympne.—Garage, stables, and entrance lodges, for Sir Philip Sassoon, Bart.

Lancashire.

Accrington.—Wesleyan Methodist Church, Clayton-le-Moors.

Blackpool.—Hydro (£100,000). Messrs. Clegg (F.R.I.B.A.) & Son, architects, 21 Spring Gardens, Manchester.

Bolton.—Taxi garage, Blackburn Road, for Mr. P. Southern.

Mill, Swan Lane, for Swan Lane Spinning Co.

Congregational Sunday School, St. George's Road. Messrs. Ormrod, Pomeroy & Foy, R.I.B.A., architects, 21 Acresfield.

Burnley.—Victoria Hospital: extension (£30,000).

Darwen.—Art Gallery and Museum (£10,000) for the Lightbown Trustees.

Irlam.—Eight houses, Prospect Avenue, for Mr. W. Bate.

Police Station, Liverpool Road.

Infant School, Lord Street.

Leicestershire.

Coalville.—Residential dispensary.

Hinckley.—Residential dispensary.

House, Ashby Road, for Mr. Robinson.

Two houses, Clarendon Road, for Mr. Mason.

Four houses, Cleveland Road, for Mr. Littler.

Two houses, Cleveland Road, for Mr. Wilbur.

Eight houses, Rugby Road, for Mr. Moore.

Lutterworth and Markfield.—Working-class dwellings.

Mowsley.—Tuberculosis sanatorium.

Lincolnshire.

Gosberton.—Two pairs of Council houses, Cape's Entry (1,080). Messrs. Vampler (Friskney), contractors; also

Two pairs of Council houses, High Road (£726); also

Gosberton Westhorpe.—Two pairs of Council houses (£719).

Lincoln.—Council School, Mount Street (£9,250).

Quadring.—Eight cottages for Spalding R.D.C. (£1,680); also

Surfleet.—Six cottages (£1,450).

Middlesex.

Ealing, South.—Proposed Church of the Good Shepherd. Mr. W. A. Pite, F.R.I.B.A., architect, 116 Jermyn Street, London, S.W.

Norfolk.

Cromer.—Cinema, Hans Place. Messrs. Limmers, architects.

Northamptonshire.

Braunston.—Eight cottages, for the Daventry R.D.C.

Northumberland.

Newcastle-on-Tyne.—Rutherford College: extensions (£34,000).

Whitley Bay.—The Gaiety Theatre. Mr. R. T. Whitehorn, architect, 167 Whitley Road.

Somerset.

Chard.—Workhouse: infirmary (£3,000 to £4,000).

Williton.—Proposed Church Room.

THE GREAT FIRE AT BLYTH

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From the "NEWCASTLE DAILY JOURNAL," January 20.

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From the "NEWCASTLE EVENING MAIL," January 19.

"Fortunately for the safety of this new building, it has been fitted with fireproof ceilings."

From CAPTAIN NAISBITT, Chief of the Urban District Council Fire Brigade.

Messrs. Bell's United Asbestos Co., Ltd., Blyth: January 23, 1914.
Dean Street, Newcastle.

Gentlemen,—With reference to the fire which occurred at Mr. James Marshall's Northumbria Confectionery Works in this town on Monday last, it is a great pleasure to me to be able to testify to the satisfactory manner in which your Asbestos Cement Sheets behaved under the very severe test to which they were put.

Had the ceiling of the ground floor in the large new building not been lined with these sheets, I am firmly of opinion that, in spite of all our efforts, nothing could have saved the whole of this building from being involved.

The flames from the old premises, which were completely gutted, extended throughout the whole length of the ground floor, which is about fifty feet long, and the heat was so intense that many of the windows were melted, and the door at the extreme end was badly burnt.

On examination after the fire the sheets were found to be intact, and the floor joists to which they were nailed, as also the wood flooring above, appeared to be undamaged.

You may make use of this letter in any way you think fit, as I consider that the above facts cannot be too widely known in the interests of property owners generally.

Yours truly,
(Signed) FRED NAISBITT, Captain U.D.C. Fire Brigade.

From Mr. MARSHALL, Owner of the Buildings.

Northumbria Confectionery Works, Blyth:
Messrs. Bell's United Asbestos Co., Ltd., January 23, 1914.
30/32 Dean Street, Newcastle-on-Tyne.

Dear Sirs,—In reply to your query, I am glad to express my entire approval at the way in which your "Poilite" Sheets acted in connection with the recent fire at my premises.

It is my opinion that the presence of these sheets enabled the firemen to confine the fire to the ground floor of my large new premises, thus saving them from being burnt down, as was the case with the adjoining older premises.

I readily give my permission for you to publish this letter if you desire.

Yours faithfully,
(Signed) JAMES MARSHALL.

It should be noted that the fireproof ceiling to which reference is made in the foregoing consisted of "Poilite" Sheets only 5-32" thick, nailed direct to wood, nothing whatever of a fireproof nature being present between the sheets and the wood flooring above.

Sole Manufacturers of "Poilite"—

BELL'S UNITED ASBESTOS CO., LIMITED

SOUTHWARK ST., LONDON, S.E.

England.—*continued.*

Staffordshire.

Audley.—Council Schools. Messrs. Watkin & Adams, architects, Swan Chambers, Burslem; also

Burslem.—Business premises, High Street.

Cheadle.—Police Station and Court House. Mr. W. J. Nevett, County architect, County Buildings, Stafford.

Walsall.—Proposed R.C. Church, corner of Stafford Street and Blue Lane (£10,000).

Suffolk.

Beccles.—Cinema, for the Eastern Counties Cinematograph Co. Messrs. Morgan & Buckingham, A.R.I.B.A., architects, 1 Upper King Street, Norwich.

Surrey.

Chertsey.—Proposed Soap Factory for "Surrey Soap Makers."

Guildford.—Workmen's cottages, Old Farm Road (£4,300).

Shottermill.—Council School for 350 places.

Sussex.

Angmering.—Eight cottages, for E. Preston R.D.C.

Brighton.—Electricity Works, North Road: additions (£1,500).

Church of Sacred Heart, Norton Road, Hove: addition. Mr. F. A. Walters, A.R.I.B.A., architect, 37 Old Queen Street, Westminster, London.

Horsham.—"The Poplars": additions and alterations. Mr. C. H. Burstow, architect, King's Road.

Rogate.—Four workmen's cottages, Milland.

Shoreham-by-Sea.—Council School. Mr. W. Willett, contractor (£3,836).

Westhampnett.—Isolation Hospital, Summersdale.

Warwickshire.

Binley.—Proposed Church.

Coventry.—Cycle works. Mr. T. R. J. Meakin, architect, 11 Warwick Row.

Grendon.—Four cottages, Nixon Lane, for Mr. Nixon.

Hampton-in-Arden.—Elementary Schools (£3,000).

Nuneaton.—Powder Factory, Stretton Baskerville, for the Preposite, Ltd. (London).

Wiltshire.

Chippenham.—Premises for the Co-operative Society. Mr. T. H. Fogg, architect, 7 Market Place.

Salisbury, Swindon, and Trowbridge.—Hospitals: tuberculosis block for twelve beds for each hospital (£1,500 each).

Worcestershire.

Bromsgrove.—Infants' Council School, Stourbridge Road, for 200 places. Mr. A. V. Rowe, architect; also

Mixed and infants' school, Watt Close, for 400 places.

Evesham.—National Schools: alterations and a new school for infants (£1,500).

Malvern.—Council School, Pickersleigh Road, for about 300 places. Mr. A. V. Rowe, architect.

Tewkesbury.—Working-class dwellings (£5,800).

Yorkshire.

Anlaby.—Six labourers' cottages.

Barnoldswick.—R.C. day school.

Clayton, West.—Public Elementary School for 250 places.

Halifax.—Theatre and café, for the Associated Provincial Theatres, Ltd. (London). Messrs. Naylor & Sale, FF.R.I.B.A., architects, Smiths Bank Chambers, Market Place, Derby.

WALES.

Brynamman.—Infants' Council School.

Caergwrle.—P.M. Church and Schools.

Llanelly.—Council School, Stebonheath Terrace (£15,000). Messrs. Mercer & Sons, Ltd., contractors.

Mostyn.—Workmen's dwellings.

Newtown (Mont.).—Tuberculosis hospital. Messrs. Deakin & Howard-Jones, architects, Plas Ynys, Borth.

Three Crosses.—Mission Church for 250 sittings. Mr. Wendell Roberts, architect.

SCOTLAND

Aberdeen.—Tramway headquarters, King Street (£24,000).

Abernethy (Perthshire).—Farm steading, Ballomill: rebuilding. Messrs. Menzies, Cockburn & Johnson, architects, 33 York Place, Edinburgh. Messrs. Garrick & Morrisons, contractors.

Ayr.—Y.M.C.A. building, High Street.

Buckhaven.—Thirty Council houses.

Crombie.—Four hundred houses at the Explosive Works, for H.M. Admiralty.

Girvan.—Gas Works: extension of buildings (£2,000).

Glasgow.—Tower, Queen's Park. City engineer.

Kilbirnie.—Public Hall, &c.

Kildonan (Arran).—Public Hall and Reading-room.

IRELAND.

Ballymoney.—Technical School: additions and alterations. Messrs. Hobart & Heron, architects, Scottish Provident Buildings, Donegall Square West, Belfast.

Brownstown (Kildare).—Schools. Messrs. Morris & Kavanagh, architects, 58 Harcourt Street, Dublin.

Manorhamilton.—Fifty-three labourers' cottages (£9,500).

Moneyglass.—R.C. Church. Mr. E. P. Nolan (of Downpatrick), architect.

PATENT SPECIFICATIONS PUBLISHED, FEBRUARY 19, 1914.

Selected and abridged by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

No. 2,632. Feb. 1, 1913.—H. J. Haskins, Warmley Pottery, Warmley, near Bristol. Machinery or apparatus for dressing, cutting, scoring, grooving, trimming, fettling, or finishing cylindrical tubes made of clay, such as agricultural pipes, sanitary pipes, and the like.

2,937. Feb. 4, 1913.—A. G. Rolls, 45 Skene Terrace, Aberdeen, and R. F. Forbes Swapp, 80 Great Western Road, Aberdeen. Chimney tops or ventilators.

2,985. Feb. 5, 1913.—Alfred Hockings, Tegfan, New Road, Porthcawl, Glam. Ballcocks.

3,278. Feb. 8, 1913.—James Morris, Salford Fire Engine Works, Salford. Apparatus for extinguishing fires.

5,732. March 7, 1913.—J. H. Woodington, Sunhill, and E. H. Coles, Woodville, Clevedon, Somerset. Indicating sewage accumulation and stoppages in drains and the like.

6,803. March 19, 1913.—R. R. Gibbs, St. James' Works, Mill Street, Liverpool. Taps or cocks.

6,958. March 22, 1913.—H. E. Hughes, The Monarch, Silchester Terrace, Silchester Road, North Kensington. Filters.

8,962. April 16, 1913.—Reginald Weaving, and Ferranti, Ltd., all of Hollinwood, Lancs. Ovens.

9,612. April 24, 1913.—G. F. Pittar and Hayward Bros. & Eckstein, Ltd., 187/201 Union Street, Borough, S.E. Cross jointing of metal sash bars and the like.

10,233. May 1, 1913.—Walter Allison, 9 Bondgate, Selby, York. Wood-planing machines.

10,622. May 6, 1913.—J. I. Kirby, 3 Oxford Road, West Bromwich, Staffs. Barless fittings for domestic firegrates.

10,629. May 6, 1913.—H. M. Yardley, 31 Southey Place, Otley Road, Bradford. Movable range front casing or cover.

12,645. May 30, 1913.—A. R. Muller, 56 Shernhall Street, Walthamstow. Waste plugs and the like.

13,043. June 5, 1913.—P. D. Hedderwick, 24 Mortonhall Road, Edinburgh. Chimney cowl and down-draught preventer.

14,468. June 23, 1913.—Leopold Loffler, Gleisdorferstr 5, Graz., Austria. Process of manufacturing glass window ventilators.

14,684. June 25, 1913.—Dated under International Convention, Feb. 5, 1913.—E. F. Hartshorn, Continental Hotel, 452 Broad Street, Newark, Essex, New Jersey, U.S.A. Awnings.

15,072. June 30, 1913.—Edwin Holland, 195 Collins Street, Melbourne, Victoria, Australia. Device for securing hinged doors and the like in various open positions.

20,565.—Sept. 11, 1913.—Johann Kroger, Jork an der Unterelbe, Germany. Removable baking, frying, and drying oven for use on kitchen ranges.

21,454. Sept. 23, 1913.—Hector Allard, 146 Rue Marie Christine, Laeken-Brussels. Automatic fire extinguishers and alarms.

17,376. July 28, 1913.—Emilian Bartet and Paul Kuhne, Bad Schmieddeberg, Sachsen, Germany. Device for automatically closing and opening doors by means of a movable bottom plate.

Any of the above specifications may be obtained from J. D. Roots & Co.

Mr. Alan Bromly, M.S.A., assistant engineer and surveyor to the Croydon Borough Council, has been selected out of 234 applicants for the post of borough surveyor and water engineer of Godalming. The commencing salary is £250 a year, rising by annual increments in seven years to £350.

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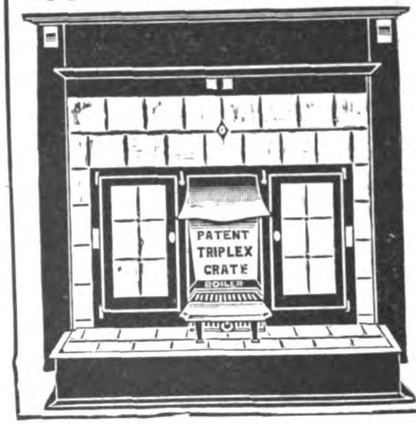

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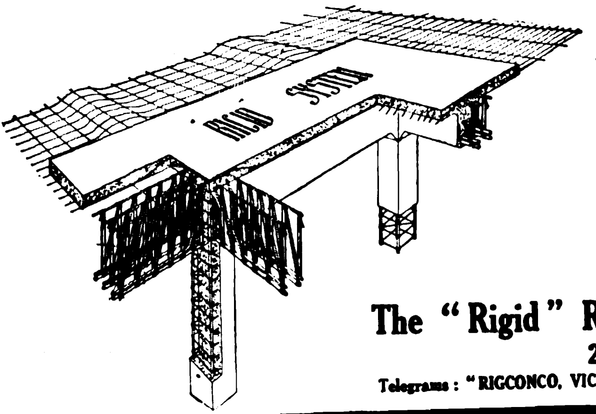

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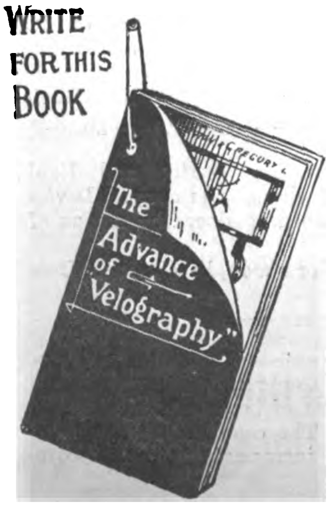

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THE ARCHITECT

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FORTHCOMING EVENTS.

Saturday, March 7.

Photographic Survey and Record of Surrey : Annual General Meeting in the Town Hall, Croydon, at 3.30 P.M.

Monday, March 9.

Royal Institute of British Architects : Special General and Business Meetings at 8 P.M.

Tuesday, March 10.

Nottingham and Derby Architectural Society : Paper, entitled "Town Planning," by Professor S. D. Adshead, F.R.I.B.A., at 7.30 P.M.

London Society : Ordinary General Meeting at Royal United Services Institution, at 8 P.M.

Wednesday, March 11.

Northern Architectural Association : Annual General Meeting at 6 Higham Place, Newcastle-on-Tyne, at 7.30 P.M.

Thursday, March 12.

Sheffield Society of Architects : Paper, entitled "An Architectural Tour in Central France and Burgundy," by Mr. W. S. Purchon, A.R.I.B.A., at 7.30 P.M.

Concrete Institute : Paper, entitled "Forms for Concrete Work," by Mr. Allan Graham, A.R.I.B.A., at 7.30 P.M.

Friday, March 13.

Leicester and Leicestershire Society of Architects : Paper, entitled "Leonardo da Vinci," by Mr. E. A. C. McCurdy, M.A., at 8 P.M.

MECHANICAL ARCHITECTURE.

FOR once we find ourselves very much in agreement with Mr. March Phillipps in his criticism in the *Morning Post* of the new art schools and library at Bournemouth. In his introductory paragraph Mr. Phillipps speaks of the moment of the coming of age of a city as being always a solemn one in its history. "During the Middle Ages, as we know," he says, "it was accompanied by a strong access and fervour of local patriotism, finding expression naturally in nobly creative designs in architecture. The guildhalls, town halls, and mansion houses of our boroughs, in which the sense of the civic spirit of England has manifested itself, are among our most important and beautiful buildings. Their corporate character is an indispensable condition of noble architecture, for it is to be noted that while the other arts are largely personal, building stands at its best for ideas which are common to many, for faiths which move multitudes, for the duties and responsibilities, which are the bonds of citizenship."

These are excellent sentiments and express a right view of architecture at its best. Mr. Phillipps then goes on to point out that Bournemouth having come of age and being rich should have found the inspiration of this supreme moment in its history the spring and origin of worthy architecture. He proceeds to criticise the building which has been erected for the new schools and library. To some extent he approves of its design and regards it as a fine building and worthy of its excellent position. "Massive and of ample extent, its proportions," he says, "apart from the tower or campanile which adorns one end of it, are of the long and low order in which the eyes of everyone, whether they know it or not, take most pleasure." The style of the building he calls Tuscan, apparently because it makes use of coupled columns of what with a certain confusion of thought he terms the Tuscan or Roman Doric order. Of course, the order is not Tuscan, but one can hardly expect Mr. Phillipps to distinguish correctly between Tuscan and Doric.

Approving, however, of the structural arrangement of the building as simple and distinct with its masses few and finely outlined and contrasted, though not, perhaps, quite naturally articulated in detail and in the actual composition of the masonry, he then proceeds to find fault with the mechanical character of the execution of its walling in brick and white Bath stone facing. He is, we think, right in his criticism that the mechanical perfection in the execution of the wall surface leads to dullness, "the dread disease," which, he says, affects all modern architecture.

It is undoubtedly a misfortune that the greater proportion of the building which is carried out from the designs of architects is of a too rigid perfection in the mechanical exactitude of its workmanship. Unless the architect takes very especial pains, as do many of our best men of the present day, more particularly in domestic architecture, to obtain texture in their wall surfaces, there can be no question that the work of the modern craftsman or skilled workman in the building trade tends towards mechanical perfection of handiwork. But in this our modern skilled bricklayer, mason, or joiner, is but reflecting the spirit of the age.

This is undoubtedly the age of the engineer and of the machine. All workers in machine shops are trained to the highest exactitude of measurement, to the constant and careful use of the micrometer gauge. Probably at no period of the world's history has a skilled workman of the building trade arrived at that high pitch of skilful management of his tools which enables him to approximate to the absolute accuracy of the machine.

Moreover, much of the work in modern building is actually the production of machines. Stone is wrought, moulded, and even carved by machinery. Bricks are turned out absolutely identical in size by the help of machines, save for the very slightest variation that may be produced in the kiln. Woodwork is wrought by machine saws, planes, and mould cutters. What wonder, then, that the result is that the bricks are set with alternating joints exactly corresponding, the hard, narrow lines of pointing similar to a hair's breadth all over the façade giving out the air of being not bricks and mortar, but a surface design imitating that effect?

When we carefully measure the bricks of sixteenth and seventeenth-century buildings we find that scarcely any two contiguous ones are absolutely identical in measurement. Now our bricklayer has, as we have already pointed out, to make use of bricks which are as nearly as possible absolutely identical in size and colour as machinery can produce. So with the stonework. Mr. Phillipps says of this, "it is impossible to convey by words a sense of the inflexible precision with which these are shaped and arranged. They do not vary by a shade, their outlines and angles are as sharp and hard as if they had been cut out of metal. Indeed, you might think that this masonry might be composed of steel blocks, big and little, cut and fitted together by machinery, and afterwards painted red and white to represent brick and stone." This, of course, as we have indicated, is exactly what does happen. The masonry and the bricks are cut by machinery, and the machine, when it has cut one stone to a prescribed shape, cuts the next to exactly the same.

Although, then, we agree with Mr. Phillipps that this mechanical exactitude is an undesirable trait in the character of modern architecture, it is one which is deplored by all architects of artistic feeling. Hence the desire for parti-coloured bricks, brindled tiles, rustic slates, adze-worked timber. But the architect who builds in stone has usually for reasons of economy to accept from the contractor who has submitted the lowest tender the reduction of cost which is effected by the use of machinery.

In the latter part of his letter Mr. Phillipps refers to Mr. Goodyear's work on "Greek Refinements," a most interesting book of which we have already given a review in *The Architect*. He adopts the view, which we also hold, that Mr. Goodyear has proved his case, and that the best works of old-time in Greek architecture were characterised by variations from the normal, deliberately intended to avoid the dullness of mechanical regularity. But Mr. Phillipps also rightly makes the point that the labour and expense involved in working out these minute variations on the huge scale of Doric columns were enormous. Here we have the difficulty with which modern architects have to contend; practically they never have a free hand in regard of cost. The primary instruction of their clients is that certain accommodation must be provided at a cost not exceeding a definite and precise sum, sometimes, it is true, in the case of competition designs, permitted an extension of not more than 10 per cent., but with work for private individuals far more often absolutely limited to the specified amount, at any rate as far as the contract sum is concerned. Thus, although we agree with Mr. Phillipps that the mechanical exactitude of modern building is a factor detrimental to the artistic character of architecture, we must emphasise the point that this mechanical exactitude is the outcome and the expression of modern conditions, and particularly of the limitation of cost to which in practically every instance the modern architect is bound.

"THE ARCHITECT" STUDENTS' SKETCHING AND MEASURING CLUB.

We are sorry not to have received a larger number of drawings in response to our new departure in asking for a drawing in crayon with the point. This is a very valuable medium for young architectural draughtsmen, being both a rapid and ready way of expressing the essentials of a piece of carving and an incentive to broad and vigorous handling. Our best present-day sketchers nearly all include crayons amongst their working tools, and hence we decided to give our contributors an opportunity of attempting this branch of technique.

"Plato" has given us a well-drawn study in sanguine of an amorino with festoon, which well exemplifies the usefulness of the crayon point.

Mr. J. A. Whittick has drawn a piece of Gothic traceried panelling without real carved ornament. He has erred in making a line drawing of diagram character with some shading added not very correctly rendered. This is the kind of subject for which crayon is not well suited. Brushwork would be much better. We should advise Mr. Whittick to try his hand at real carving, and if he be, as we diagnose, a novice at the game he would do well to make his early studies in charcoal, which lends itself to easy correction more than does crayon.

We award the prize of two guineas to "Plato."

Mr. W. Watkins, F.R.I.B.A., has been instructed by the Lincoln Board of Guardians to prepare sketch plans for an infirmary proposed to be erected on a site adjoining the present workhouse.

DESIGN FOR HOUSE NEAR THE SEA.

This house is designed for a site near or facing the sea. The hall was supposed to be the main feature and is placed on the sea front with door on stoep and window on garden room. The beams and joists will show, and allowance has been made for curtains across so as to give privacy when required; the open hearth would be in Dutch tiles and floor of oak. The hall is of good size, being 20 feet by 24 feet 6 inches, and the other rooms in proportion. Convenience of service has been considered throughout. Walling would be in common rubble with dressed quoins, roofs covered with thick slates in diminishing courses swept round in valleys, woodwork partly left rough and rest finished in white enamel. Glazing in lead lights. Elevations are kept plain and simple, proportion and natural features pertaining throughout. Balconies are well sheltered from the south-west and the arched recess on quarter-space landing would look well. This house would cost £1,500 in a district where stone is handy.

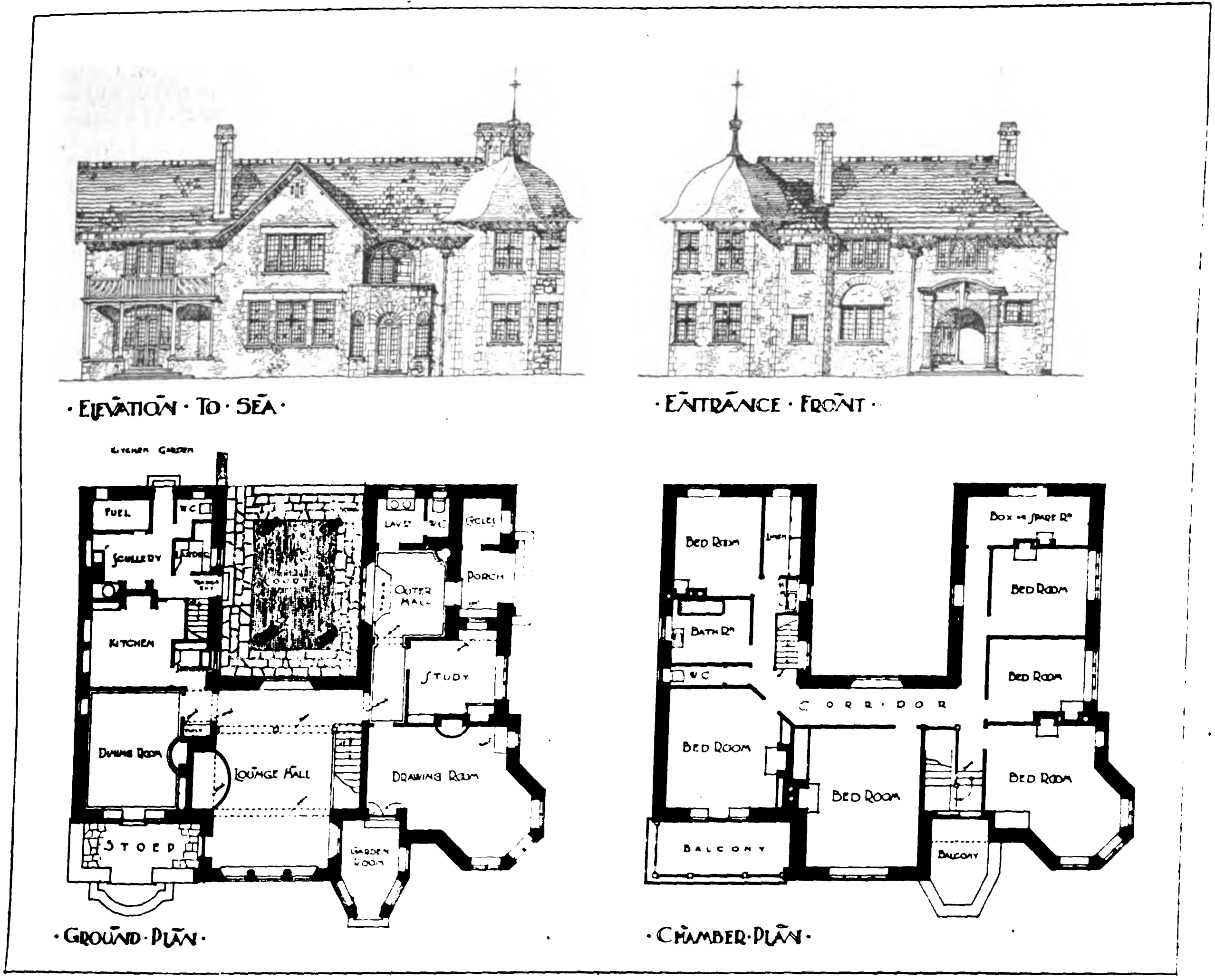
NOTES AND COMMENTS.

We are thoroughly convinced, after personal examination, that St. Paul's Cathedral does not require the expenditure of £70,000 to render it absolutely safe, provided there is no further disturbance of the sub-soil.

As we have before noted, there is undoubtedly evidence of an increasing interest not to say appreciation of architecture amongst the public. In all the greatest periods of art there has been both interest and appreciation by the community outside the immediate circle of the producers of art-works. Yorkshire is ordinarily regarded as the abode of hard-headed, practical business men and workers, to whom materialism rather than idealism would make the higher appeal. It is, therefore, with pleasure that we hear of the success that has attended a series of lectures in Sheffield by Mr. W. S. Purchon, lecturer on architecture at Sheffield University, which were intended for and addressed to the laity rather than the professional or even the amateur in architecture. The local daily Press has reported these lectures, but a leading article in the *Yorkshire Telegraph and Star*, under the heading of "Architecture," disclaims credit for the Press other than as furnishing a reflex of the public interest and opinion.

It is a matter of the deepest regret that the offer of Mr. D. A. Thomas to provide the entrance hall of the Cardiff City Hall with marble statues of the ten most notable men in the history of Wales should have resulted in the serious disagreement that has ensued in the Royal Society of British Sculptors. Briefly, the trouble arose by the abandonment of an originally proposed competition for the commission to execute the statues in favour of a selection of sculptors. In sculpture, as in other arts, it appears that men who have made their reputations are chary of competing in the open field with those who have still their position to achieve. The R.A. does not care to risk defeat at the hands of a youngster just out of the schools, a defeat which is often more than likely, not because the youngster is superior in ability to his older competitor, but because the former can devote his whole attention to the problem before him, whilst the latter is pre-occupied with the many concerns that have come to him by reason of his reputation and acknowledged skill.

At a meeting of the Liverpool Free Libraries, Museums and Art Committee, it was reported that the balance sheet of the last autumn exhibition showed a loss of £211, partly due to the reduced number of visitors, partly to an expense of £500 in cash and damages due to a claim by a sculptor for injury to his work. Proposals for the abandonment of the autumn exhibition have



DESIGN FOR HOUSE NEAR THE SEA.—Mr. F. HOWARTH, Licentiate R.I.B.A.

been made in the past, but the Committee decided to hold an exhibition this year although the situation is regarded as precarious, and the *Liverpool Courier* says, in discussing the question: "To-day the 'Autumn' is only just paying, and the Committee now hope to pull through by a policy of reducing expenditure. If that does not secure a margin of profit, the Exhibition may have to be abandoned. What will be done then? Are we going to discontinue all efforts to keep the citizens *au courant* with the art movements of the day, and allow the Walker Art Gallery to become just a museum, in which to house the pictures we have, or will one of the richest cities in the world rouse itself to its duty towards art? The Walker Art Gallery has often been sneered at for its commercialism. But the Gallery Committee have always had to work on trade lines, because all the money they spent, outside of the funds provided for maintenance and upkeep, they first had to make. What art lovers say should be done is to relieve the Committee of financial anxiety with reference to exhibitions, and allow them an adequate sum of money to be spent each year in acquiring works of art for the Permanent Collection and to run exhibitions—free, if necessary. Other towns not as large or wealthy as Liverpool do this, with the result that art galleries in those places are able to invite citizens to inspect two, and sometimes three, exhibitions each year. It is evident that something of this sort will have to be done if the Walker Art Gallery is to be maintained in its present position as the foremost, as it was the first, provincial Corporation gallery."

Amongst the interesting relics of the Middle Ages, few hold a more piquant position than the Chantries of Our Lady on the bridges at Rotherham and Wakefield. The chantry at Wakefield has been restored and regular services are now held in the building; but that at Rotherham has been less fortunate. In the time of Henry VIII., denuded of its ornaments, it became the property of the Feoffees of the Common Lands, who permitted, or perhaps ordered, its conversion into an almshouse, and in this condition it endured until 1779, when the Feoffees again consented to its alteration to a prison. To this period in its history may be traced those structural changes which at the present day prevent a fair conception of its mediæval state. The traceried windows were walled up, a first floor laid, and partitions built. It remained a prison until within living memory, and has for twenty years provided a tobacconist with a convenient repository. The primary purpose of the building having become abortive, its conversion into an almshouse was doubtless well warranted, and even as a prison it probably performed useful service to the State. But by no conceivable reasoning could its employment as an emporium of the tobacco trade be justified.

The restoration of this Chantry has been the subject of deliberation for the past 13 years. Architectural reports were made to the Feoffees in 1901 by Mr. John Bilson, F.S.A., of Hull, and in 1902 by Major J. E. Knight, of Rotherham. The late Sir Charles Stoddart was anxious to revive in some measure its ancient use as a religious building for occasional, or perhaps daily, services. To this end he compensated the late tenant when, as a preliminary move, it was felt desirable that the building should be no longer occupied. Most unhappily Sir Charles died before the scheme of restoration had been definitely put in force, and the Chantry is now the subject of a debate which appears very largely to turn upon the interpretation of his will. The matter primarily concerns the town of Rotherham, and it would be an impertinence to intrude into a question of private or semi-private disputation. The fair fame of Rotherham and the interests of archæology alike demand some measure of restoration, which will remove the accretions of the prison-house period. This is generally agreed. The Feoffees of the Common Lands, who hold the Chantry in possession, will not neglect their ancient trust, and it may be assumed that all who are concerned in the future of the Chantry will direct their efforts to its proper restoration.

The truth regarding the ancient royal city of Meröe is now in course of elucidation by the Liverpool expedition under Professor Garstang, and may in the course of the next ten years be trusted to dissipate much of the fiction and erroneous tradition with which the history of Meröe is enshrouded. There appear to have been three main successive periods of local activity: the first subject to Egyptian influence, the second marked by an influx of Greek ideas, and the third suggesting a Roman occupation or colony. The historical material confirms these evidences, showing the city to have been founded about the eighth century B.C., possibly when the Ethiopian power in Egypt began to decline before the advance of Assyria, impelling the king and his court to seek the security of a refuge further up the Nile than their previous capital of Napata afforded. Many tombs of the Necropolis have been examined, and show that the development of local funerary art and customs pursued a parallel course. These are archæologically divisible into three separate groups, corresponding to the main historical divisions, and, it would appear, to the group of pyramids. Even a fourth period, later in date than the third century A.D., is suggested in some of the northernmost tombs, agreeing with evidence, as yet not fully developed, which the excavators have remarked amidst the ruins of the city. This accords with the last historical reference to Meröe, found in an Ethiopian text published by Bent, which records the sack of the city, apparently its final overthrow, in the seventh century A.D.

LONDON COUNTY COUNCIL.

At the meeting of the London County Council on Tuesday last Sir John Benn asked the Chairman of the General Purposes Committee whether there was to be any departure from his declaration that painters employed on the Council's work were to be paid at the rate of 9½*d.* per hour, and whether the workmen had themselves asked for any conference on the matter?

Major Gray (Chairman of the Committee) replied that the Council's decision so far was that the schedule rate should be 9½*d.* an hour, and he was unaware of any proposal to depart from it. He was unaware, also, of any application by the workmen concerned to attend a conference on the subject.

Sir John Benn: If there is no intention to depart from the 9½*d.*, what is the object of the conference which has been called?

Major Gray: Obviously the intention of the conference is to endeavour to secure an agreement between the two contending parties.

Sir John Benn: An agreement on what?

No answer was given, and at a later stage Sir John Benn moved the adjournment of the Council to protest against the vagueness of Major Gray's replies. The motion, however, was ultimately withdrawn upon the Major explaining that no attempt to evade the Council's decision as to painters' wages was contemplated.

STATUTORY REGISTRATION OF ARCHITECTS

At the meeting of the Council of the Preston Society of Architects, &c., the following resolution was unanimously passed: "That the members of the Society, having always approved of the registration of architects, do give our cordial support to any proposed legislation for this purpose, and that a copy of this resolution be sent to the members of Parliament representing Preston, requesting their support of such a Bill when presented to Parliament."

COMPETITION NEWS.

Carcroft.—Members of the Society of Architects are requested not to take part in the competition for the proposed new Wesleyan Methodist Chapel at Carcroft without first ascertaining from the Secretary whether the conditions are such as can be approved by the Society.

Liverpool.—The Parks and Gardens Committee of the Corporation have decided to offer in connection with the development of the Walton Hall estate three premiums for the planning of the whole estate, exclusive of over forty acres, which are to be retained as park land.

ILLUSTRATIONS.

BOARD ROOM, FOR LIEBIG'S EXTRACT OF MEAT COMPANY, LTD., THAMES HOUSE.

The fine board room which has been erected at Thames House, E.C., for Messrs. Liebig, has been decorated with old Spanish mahogany panelling to the full height of the room, with Classic pilaster enrichments and limewood relief enrichments to the frieze, moulded after the type of Grinling Gibbons' work. Bookcases form part of the treatment, and this, together with the table and board-room chairs, combine with the classical work a feeling of the Chippendale treatment. The fireplace is in marble, and a bright steel dog grate blends readily with the other work. The ceiling is in enriched fibrous plaster of Georgian treatment. The electric-light candelabra are also of carved wood, in harmony with the other work. The parquet floor and the large Persian carpet all combine together, the whole giving a quiet and dignified effect to this important centre of the business of this great firm. The decorations to the board-room, as also Thames House itself, were carried out under the guidance of Mr. Stanley Hamp, F.R.I.B.A., of Messrs. Collcutt, Hamp & Tilden, architects.

ALL HALLOWS CHURCH, SOUTHWARK.

This church has been undergoing general renovation and redecoration under the guidance of Messrs. Chas. Heathcote & Sons, architects, of London and Manchester. A modern heating system has been introduced. The new pulpit, executed by the Bromsgrove Guild, is of oak, on a Bath stone pedestal, with oak sounding-board. The handrail and newel are in bronze metal. In place of the usual four Evangelists, where figures are introduced at each corner niche, are four modern preachers. Great care was taken and considerable research made to ensure the portraits being faithful ones and the vestments accurate in each case. The four figures are those of King (of Lincoln), Pusey, Keble, and Liddon. The redecoration of the church was done by the same firm from Bromsgrove, and roof repairs by Messrs. T. Rider & Son, of Southwark. The heating apparatus has been carried out by Hatton, of Manchester.

OXFORD COLLEGE SERIES, No. 131.—JESUS.

We have the pleasure this week of giving a further view of the front quad of Jesus College, Oxford.

Mr. Wm. C. Gray has in contemplation the erection of a garden city for the workmen employed at his firm's proposed shipyard between Seaton Carew and the north bank of the Tees. The site occupied will be about 100 acres to the west of the shipyard, and the estimated cost about £20,000. The houses will have good garden space, and plans, we learn, for their erection are in course of preparation.

The usual lecture on the architecture and history of St. Bartholomew-the-Great, West Smithfield, will be given on March 21, at 2.30, when the worked stones found in the present operations will be shown in the cloister. Admission to the crypt and other parts of the church will be given without any fee, but a collection will be made in support of the work now in progress. The lecture will be repeated on March 28, at 2.30, when the collection will be given to the "St. Paul's Cathedral Preservation Fund." An organ recital will be given from two o'clock to 2.30 on each day.

Mr. James S. Richardson, architect, Edinburgh, has been appointed Inspector of Ancient Monuments in Scotland under the Ancient Monuments Amendment Act, 1913. He received his architectural training in the offices of Mr. J. Macintyre Henry, Sir Robert Lorimer, and Messrs. Peddie & Washington Browne. He also studied at the School of Applied Art, and has made a special study of mediæval architecture throughout the three kingdoms. He is a F.S.A.Scot., and a member of Council of the Scottish Ecclesiological Society, and has contributed several papers to the Proceedings of both Societies.

THE ARCHITECTURAL ASSOCIATION.

An ordinary general meeting of the Architectural Association was held on Monday, March 2, at Tufton Street, S.W. Mr. W. Curtis Green, F.R.I.B.A., President, occupied the chair.

Mr. G. Leonard Elkington, A.R.I.B.A., Hon. Secretary, announced that the fifth spring visit will take place on Saturday, March 14, to the improvements to the Duchy of Cornwall Estate, Kennington, by Professor S. D. Adshead, F.R.I.B.A., and Mr. S. C. Ramsey, A.R.I.B.A. Members to meet in small square between Courtenay Street and Cardigan Street, off Upper Kennington Lane, at 2.30 p.m. Trams from all parts to Kennington; five minutes' walk from Vauxhall.

An ordinary general meeting and members' evening will be held on March 30, at 8 p.m. Exhibition of work by the late Messrs. G. F. Bodley and J. F. Bentley, and two short papers will be read on the work of these architects. The result of election of officers and Council for session 1914-15 will be announced.

An exhibition of educational cinematograph films will be held on Friday, March 6, at 8 p.m. The films were specially prepared by Messrs. Ruffell's Exclusives, Ltd., under the direction of the Architectural Association, for use in technical schools. All members invited.

The Chairman announced the Council's nominations for the House List for session 1914-15. Mr. Maurice E. Webb, M.A., is proposed for President.

Mr. W. S. Purchon, A.R.I.B.A., then read the following paper, entitled

Architecture and Environment.

When I was asked by your Secretary to read a paper to you I selected as my title "Architecture and Environment," partly because considerable interest in this subject has been aroused among architects and others with regard to the new buildings at Delhi, partly because of certain changes which are taking place in English architecture at the present time, and partly because of certain recent developments in architectural education.

The title "Architecture and Environment" seemed the one which most nearly fitted what I have to say, but it may be that it does not fit properly here and there, so I must ask you, if you think I go beyond my subject, not to treat my remarks as irrelevant, but rather to blame me for my inability to select a more suitable title.

On the other hand, some of you may agree with me in giving a very wide definition to the word "environment," and consider that I have ignored some aspects of its influence on the art in which we are all interested.

It is, of course, impossible to speak at any one time of all the influences which affect an art, and it should not, therefore, be inferred that because I deal with one of them I do not attach importance to others.

This, again, is partly a matter of definition, for it may well be urged that all the influences which affect architecture are, in virtue of that fact, part of its environment.

Should it seem to you that I am dealing with the elementary and with the obvious, I must ask you to remember that the fundamental is often elementary, and the obvious is frequently overlooked.

The main point, then, with which I am to deal this evening is the proposition that for a building to be fully beautiful, for it to be architecture in the best sense of the word, it must be suitable to its environment.

A certain form, for example, may have a kind of beauty in itself, but its fullest beauty can only be seen when it is in its proper place. It is very true of architecture, I think, that what is beautiful in one set of surroundings is not necessarily so in another.

While we shall see that the materials which are available form part of the environment, and that the arrangement of the buildings with regard to the nature of the site is a matter of considerable importance, what is perhaps the principal point to be considered is the suitability of a building to the climate of the neighbourhood in which it is erected.

It will be best, I think, to approach the study of architecture in relation to environment more or less chronologically. Generally speaking, we shall find that buildings erected in the architectural periods preceding the age of revivals were very considerably influenced by their environment. Architecture developed on lines suitable to its surroundings, climatic conditions having the most obvious effects.

During the Renaissance period, when Italian architects at the close of the Middle Ages looked for inspiration to the buildings of the Romans, and the architects of other countries looked similarly to the buildings of their fellows in Italy, the influence of environment was, as we shall see, to some extent neglected.

First, however, we will note on this slide the mean annual distribution of rain over Europe. The deeper the blue the more rain, the deepest blue indicating over 80 inches, the palest 20 inches to 30 inches; yellow indicates 10 inches to 20 inches, and orange under 10 inches per annum.

Egypt, we see, has a very low rainfall; Greece, Italy, and France have more. There are, however, patches of yellow in Greece, Italy, and South France, but none in North France or in England, where, it must also be remembered, snow is a factor with which the architect has to deal.

Note, too, that Greece, Italy, and South France are similar with regard to verticality of sunshine. Egypt is still hotter, while the north of France and England are further from the equator.

We will begin, then, with the ancient architecture of Egypt. Here the climate is hot and dry, rain being somewhat rare. Such a climate allows of a comparatively simple type of building, for, while protection against heat was necessary, it was not so necessary to protect the building from wet weather, which is a rather more difficult task. The question of lighting is, too, a simple one.

The principal effect of such a climate is that it results in the use of a flat roof, a sloping roof by means of which rain water is conveyed from the building not being necessary, and it simply could not have occurred to the builders. To obtain light in such a climate it is only necessary to make openings, and these need not be very extensive even to get a well-illuminated interior, and it is probably natural that in a hot sunny climate a dim light would be preferred; one would, in fact, go into a building to get away from the heat and bright light outside.

In sunny lands artists seem to use bright colours naturally—possibly partly because such colours are prevalent in Nature in such countries, and so ornament vividly painted was usual in Egyptian work, together with delicate reliefs which are only suitable in a clear, sunny atmosphere.

So we find that the remains of ancient Egyptian temples show flat roofs, comparatively small openings arranged to give light, and a large amount of delicate carving painted in vivid colours. In all these matters Egyptian architecture was in harmony with its environment.

With regard to the siting of the buildings with reference to their surroundings, there was not much choice. The temples were usually built on the flat land near the Nile, while many of the tombs were cut in the face of the cliff.

The climate of Greece, as we saw in the first slide, is less dry than that of Egypt, so here we find, as might be expected, slightly sloping roofs, not used to give a pleasing proportion to the pediment, but as a matter of sound building.

And Greece being somewhat further north than Egypt, and having the sea to the east, west, and south, while the sunshine was still strong, the general nature of the climate was such as to encourage in the Greek of the great period of architecture a love of open-air life. As we all know very well from the Olympic Games, open-air sports were indulged in to a considerable extent; the theatres were out in the open, and many of the religious ceremonies were performed out of doors.

These factors naturally had their effect on the architecture. In Egypt the interior of the temple was all-important. In Greece, while the interior was by no means neglected, the treatment of the exterior received far more attention than in Egypt. It was beautified by the addition of the peristyle, which, it should be noted, is of great value as a protection from sun and rain, and which in a hot climate keeps the building behind cool; it was also enriched by the wonderfully beautiful figure sculpture in the pediments and friezes.

We saw that a slightly sloping roof was found necessary in the great Greek buildings, because of the rainfall, and we also find that the sculpture was usually carefully protected from rain. The sculptures of the main frieze in the Parthenon are under the ceiling of the peristyle, while those in the frieze of the external order and in the pediment had great projecting cornices over them. These cornices were, of course, so designed that the rain would drop off well in front of the sculpture. This type of cornice could not, in fact, have been thought of but for the nature of the environment. And, while provision had to be made for some rain in

Greece, there was still plenty of bright sunshine, so that details and ornament could be extremely delicate and refined; and, as we know, colour decoration was freely used. Without bright sunshine, in fact, the great frieze of the Parthenon and much Greek detail would be foolish. The beautiful marble which was available was but another important factor in the environment, and excellent use was made of it.

It is not at all certain what provision was made for lighting the interiors of the Greek temples, but in almost every case the entrance was arranged to the east, and the statue placed opposite the entrance, so that when the doors of the temple were opened the morning sun would illuminate the statue. It is quite possible that these doors and the grille over them were the only means of lighting the interiors. In the case of the Temple of Apollo at Bassae, the main entrance of which is to the north, a special entrance was made on the east side opposite the statue.

With regard to the siting of Greek buildings, their designers made excellent use of fine, natural sites, a good example being the Acropolis at Athens, another the Temple of Juno at Girghenti, and a third the wonderful site at Delphi.

In Italy climatic conditions are very similar to those of Greece, so that the modifications made by the Romans when they developed their architecture partly on Greek lines were not due to differences of climate.

The Roman roof, for instance, is slightly steeper than the Greek one, but that is probably because the Romans, in developing the construction of timber roofs, found they could obtain increased strength by increasing the pitch.

In studying Roman architecture, however, certain points are worthy of attention in confirming that with which we have already dealt. We find, for instance, that, as in Greek work, great importance was attached to the appearance of the exteriors of Roman buildings, and, though the colonnades at the sides of the temples were frequently omitted, ample protection from sun and rain was provided in the increased covered space in the front of the temple, as, for instance, in this example, the Temple of Antoninus and Faustina in Rome. Roman theatres, like Greek ones, were open to the sky, but they were usually built up from the level, as shown in this view of the Theatre of Marcellus, rather than fitted into a hill-side as in Greek times. The Roman amphitheatres, which were also built up from the level, and which were erected in practically every important Roman town both in Italy and other countries, were also open to the sky.

Roman colonnaded streets are also indications of the influence of the climate on the architecture of the time. In the Roman house climatic influence also shows clearly. Without going into detail, we may note in this view of a house at Pompeii the atrium (in the foreground), which was open to the sky in the centre, but protected from sun and rain at the sides, and the peristyle beyond, which was similarly arranged, but on a larger scale.

We saw that the Greeks took advantage of beautiful sites, arranging their buildings harmoniously on them. In this view of the Temple of Vesta at Tivoli we see a fine Roman example of this, but the Romans are more famous for developing the arranging of buildings in fine symmetrical groups, as indicated in this plan of the Roman fora.

In the countries which the Romans conquered there was, generally speaking, no architectural style in existence, and in these countries the Romans erected the buildings they needed practically as they built in Rome. The temple at Nîmes, for instance, is one of the finest examples of a Roman rectangular temple in existence; and at Nîmes, too, is a fine amphitheatre. But in Egypt, where the Romans found a great architectural tradition, they practically left it alone to develop on its own lines. The Greek, too, had made little impression on Egyptian architecture.

With regard to Roman material, there is but one point to which I want to refer. In Greek work columns were practically always fluted, and in this example at Sunium the veined marble which was used conflicts with the vertical lines of the flutes. Probably for reasons connected with the nature of the material, the Roman frequently left his columns unfluted, and the same practice was followed in Byzantine times—as, for instance, in the columns of Santa Sophia, where also may be noted the suitability of the delicate carving for the marble in which it was executed.

We will next consider the development of Romanesque and Gothic architecture with special reference to the influence of climate. At Nimes, in the south of France, the Romans, in addition to the buildings to which I have already referred, built the Baths of Diana. These consisted of a rectangular hall, with a barrel vault over it, strengthened by ribs of stone at intervals and supported by means of a similar small vault over a passage at each side.

Following somewhat on the lines of these baths, Romanesque churches were built in South France with a ribbed barrel vault over the nave, supported by a half-barrel vault over each aisle. Such an arrangement, it will be seen, allows of no clerestory, though windows might be arranged at the back of the triforium, as in St. Sernin, Toulouse. While such an arrangement might be quite suitable in the south of France, it would be less suitable in the more cloudy north. A similar arrangement was, however, used at Clermont Ferrand, in the Auvergne district, rather more to the north. But still further north, at St. Etienne, Nevers, a ribbed barrel vault was poised over a clerestory in a somewhat dangerous fashion. This, of course, gave a lighter interior, and, to my mind, a very pleasing one.

At Autun, in Burgundy, the cathedral was built somewhat similarly, but to reduce the thrust of the vault it was made pointed. These barrel vaults over clerestories were not, however, sound pieces of construction. At Tournus the interesting expedient was tried of building arches across the nave supporting short barrel vaults running across the church, and so, while bringing the thrust low down, still allowing ample window space high up in the vaulting.

The use of groined vaulting, instead of a continuous barrel, as had been discovered long before in the great halls of Rome, allowed light to be obtained in the upper part of a building; and in Romanesque architecture, particularly in the more northern parts of France and in England, groined vaulting was developed with this object in view.

With the use of the round arch various difficulties were encountered, the ugly stilted arch having to be used as in the apse of St. Bartholomew's, or the segmental arch for the diagonal rib as at Durham.

At the Abbaye aux Hommes, Caen, and in many other churches, the sexpartite vault was adopted, and at the Abbaye aux Dames at Caen the still more curious form in which a vertical wall is carried on the intermediate rib.

With the application of the pointed arch to groined vaulting, early examples of which are to be found in the antechapel at Vézelay and in Durham, all the difficulties were overcome. The pointed groined vault giving plenty of light in the upper part of the church became the normal method of construction in North France and in England, and the clerestory in the vaulting contrasts finely with the dark shadow at the back of the triforium in many of our Mediæval interiors. Even this was not enough, and, finally, additional light was obtained through the triforium—in some cases from windows in the outer wall behind, as at Peterborough. While in some examples in France the actual triforium opening was glazed, the roof over the aisle being kept out of the way, as shown in this view of Amiens, the internal effect being clearly shown in this illustration of Beauvais.

The tunnel or barrel vault brought its load down uniformly on the wall below, so that with this form of vault large windows were not easily obtained, as we can see in this example—Beaune. With the groined vault all the load is brought down on definite points, as at King's College Chapel, Cambridge. At these points buttresses could be formed projecting boldly outward, and all the space between these was available for the window.

It may, however, be thought that this same development of the lighting was going on in more southern parts, such as Italy and South France; that it was simply a part of the method of design of the time, and not directly related to climatic conditions.

At Albi, however, in South France, we see great masses of walling and comparatively small area of window, and in Florence Cathedral, a typical example of Italian Gothic, we may note the small amount of window space compared with the amount of walling.

Just in the same way that we have found the necessity for larger windows in more northern parts, so, too, steeper roofs are advisable in more rainy districts and in districts in which snow is not unusual. In the north of France and in England, for instance, with ordinary roofing materials steeper roofs than those used in Greek and Roman buildings are advisable. In Italian Mediæval work, however, as we see in this exterior of Florence Cathedral, the roof could be flatter.

Detail, too, in the more northern countries must be made bold in order to be effective. The vigorous detail in the Percy tomb, Beverley Minster, is much coarser than good Greek carving, and has much stronger effects of light and shade; it is therefore more suitable for the climate in which it was made. Similar comments apply to the deeply undercut mouldings of the Early English period. Just as Greek detail is more beautiful in Greece than in England, so is this detail more beautiful here than it would be in Greece.

We thus see that Gothic architecture developed in England and France, not because some designer thought he liked the shape of certain forms, but because, to a considerable extent, it was necessary that it should develop on certain lines in order to be effective in its particular environment. We have also seen that it did not develop on those lines in Italy, so that, when during the fourteenth century enthusiasm for antique culture developed in that country, it was far easier for the Italian to go over to Rome than it was for the Frenchman or the Englishman.

When, however, the Renaissance in architecture spread to England and France it did not at first entirely upset the traditional methods of building, so that, for instance, we find in the early Renaissance châteaux of France the steep roof and the great chimney stack, and in England Inigo Jones's Coleshill retains these features.

But gradually Italian forms were copied in France and England, not because they suited the climate, but because, being the work of the Italian masters, they were considered beautiful in themselves. So that at the church of St. Martin at Avallon we find a steep roof with a flat pediment in front of it. The Frenchman knew his steep roof was sound, and meant to stick to it, but the Italian pediment was fashionable and had to be dragged in—like the heart-shaped hole in the shutters, the semicircular openings in boundary walls, or the Union Jack balustrade of more recent times in England.

It may be urged that in late Gothic times flat roofs were used; true, but not because flat roofs were thought beautiful and had to be introduced even to the disadvantage of the buildings, but because by their use the clerestory could be increased in size, and thus, in the minds of the builders, the church made more efficient.

With your permission I will now read some nursery rhymes, which, I fear, we have forgotten. I know we all learnt them once. The Earl of Burlington published the drawings of Palladio's "Antiquities of Rome," and Pope wrote to him as follows:—

> You show us Rome was glorious, not profuse,
> And pompous buildings once were things of use.
> Yet shall, my lord, your just, your noble rules
> Fill half the the land with imitating fools;
> Who random drawings from your sheets shall take,
> And of one beauty many blunders make;
> Load some vain church with old theatric state,
> Turn arcs of triumph to a garden gate;

And, later:—

> Shall call the wind thro' long arcades to roar,
> Proud to catch cold at a Venetian door;
> Conscious they act a true Palladian part,
> And if they starve they starve by rules of art.

Pope's prophecies were fulfilled to the letter. At Chiswick, for instance, William Kent in 1729 built a copy of Palladio's villa at Vicenza, and other copies of it were built elsewhere. Here we have Italian architecture with no attempt to modify it to suit the changed surroundings. Houses were built with windows spaced according to Italian methods. Façades were designed to fit in with Palladio's rules, and the houses were attached at the back as well as they could be.

During the eighteenth century a great deal of building was carried out in Bath, and in many ways it was of high quality, but it followed Italian methods too closely, and, as a result, many of the windows have had to be increased in size in recent years.

Many mistakes were made during the Renaissance period; convenience was sacrificed to outward show, and, as I have indicated, environment was often neglected. From these mistakes there is much that we can learn, much that can help us to keep English architecture on sound lines.

In the latter half of the eighteenth century a great deal of attention was paid to Greek culture and art in general, and to Greek architecture in particular, with the result that a revival of Greek architecture took place in this and other countries during the early part of the nineteenth century. Unfortunately, Greek buildings were not seen to be beautiful solutions of local problems, and, quite regardless of suitability to climate, buildings were erected in England and elsewhere following closely on Greek models.

Downing College, Cambridge, is one example. Notice how foolish its chimney stacks look. The interior of the chapel of Greenwich Hospital is another, and St. Pancras Church is a third. This kind of thing and variations of it are becoming fashionable again, and now with less reason, for then there was a genuine Greek revival—a revival of interest in all that was Greek; now there is not.

In rather later days Cockerell tried to work on Greek lines, but endeavoured to make his buildings fit in better with modern requirements and local conditions. The Taylorian Institute at Oxford is an example of his work. I will not repeat the unpleasant comments made on it by his opponents, but will merely say that the detail is Greek, and the climate of Oxford has not changed to suit it.

I have referred to building materials as a part of the environment of architecture. It is usually found that buildings constructed of local materials fit in better with their surroundings than do those built of material brought from a distance. To make a definite rule of this would lead us into numerous difficulties, but I think it is safe to say that where there is no serious objection to the use of local material it is generally advisable to use it. If, for example, one were to build a house among the Derbyshire hills one would not use brick; that material is far more suitable in the flat lands where brick clay is easily found. Nor would one use half-timber work, for that type of building is far more at home in the neighbourhoods in which it was developed. Yet one frequently sees a house or other building which, while perhaps very suitable for another position, is quite unsuitable where it is. Modern houses, more or less suitable for the Thames Valley, are often built in bleak positions among the hills, within a hundred yards, perhaps, of a fine, sturdy old farmhouse or hall, which exactly fits in with its surroundings. There is also the question, frequently a difficult one, of erecting a building in harmony with surrounding buildings. These adjoining buildings are part of the environment of the new building, and as such should be carefully considered. Such consideration naturally leads to less striking individuality in the buildings, but to greater unity in the group.

Let us return for a moment or two to the architecture of the past to see if we can discover something of the secret of its greatness. Is it not to be found in the striving after perfect efficiency, the attempt to make the very best building for a definite purpose and a definite environment?

In a Greek building what impresses us is the fact that we cannot suggest any improvement—it seems absolutely right; it is perfectly fit for its work and place. And this result was arrived at by gradual evolution from humbler efforts. Here, for instance, is a comparatively crude capital from an early Greek building, and here one from the masterpiece, the Parthenon, in which it seems impossible to suggest the slightest improvement, for in its proper environment it is surely one of the most beautiful things on earth.

In Roman architecture the struggle was one with structural difficulties and with planning problems. And how well the Roman builders tackled them. Think of the early Etruscan arch, and then of the vaults of the basilica of Constantine, or the dome of the Pantheon. They wanted big, uninterrupted floor spaces with permanent roofs, and they got them.

Look, too, with what skill they tackled the difficult problem of planning a great and complicated building such as the Baths of Caracalla. Here we have a fine group of noble apartments, skilfully planned round a great central hall, and arranged so as to give the utmost efficiency and the finest architectural effects. They were not satisfied with Greek architecture—it did not answer their purpose, and wisely they worked out their problem in their own way.

And in Santa Sophia we realise that the Byzantine architects were not satisfied with what the Romans did, but, requiring a dome over a square space, they developed the pendentive, and improved the scheme of the Roman hall, with its level-topped groined vault, out of all knowledge.

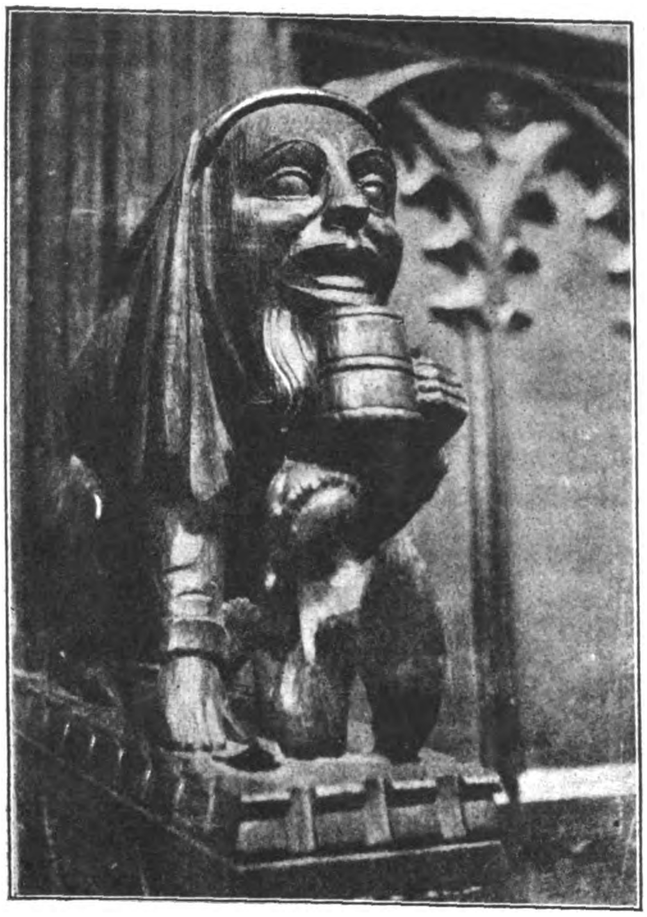
The Early Christian, in his difficult circumstances, had to be satisfied with a timber roof, but the builders of the eleventh and twelfth centuries wanted something better than that, and struggled with the vaulting difficulties to which I have already referred.

The Mediæval builder also had his planning problems, and he tackled them nobly. The plan of his early churches was comparatively simple, but when vast throngs of pilgrims began to arrive he did not continue to build as his father had done before him, but he realised that he had a new problem to solve and proceeded to solve it. And so arose the great porches of the Burgundian churches, and the wonderful cathedral at Bourges, with its five great doorways at the west end and its double aisles starting at the west end and going right round the semi-circular east end.

(To be concluded.)

ECCLESIASTICAL WOODWORK.

It is a remarkable fact that in a large proportion of the cathedrals and churches of this country there are many grotesque and other curious carvings, some of which are profane, some obscene, and others that have apparently little or no connection with sacred art. The majority of these carvings date back to mediæval times, when the art of wood-carving received more attention than it has subsequently done. In those days the artificer was allowed greater latitude in his choice and execution of designs than is the case nowadays, when our carvers have degenerated into mere copyists, with no aptitude for originality. Many of the examples of grotesque birds and beasts were undoubtedly copied from the ancient "Bestiaries," or Book of Beasts, and others were obtained from the decorations to be found in ancient illuminated service books and Bibles; but apart from these the carvers of the olden times displayed a great amount of skill in the execution of their own designs. In some cases the carvings have a symbolical meaning, and beneath a crude and rugged exterior bore a wealth of significance to the unlettered mind of the period. As an example of this character we may refer to the many carvings of the pelican and its young. At the time this symbol was first used it was erroneously believed that the pelican succoured its young with its own blood.



A DRUNKARD. ON A BENCH END IN CHESTER CATHEDRAL.

> "The Pelicane, whose sons are nursed with
> Bloude, stabbeth deep her breast, self
> Murtheresse through fondness to hir broode."

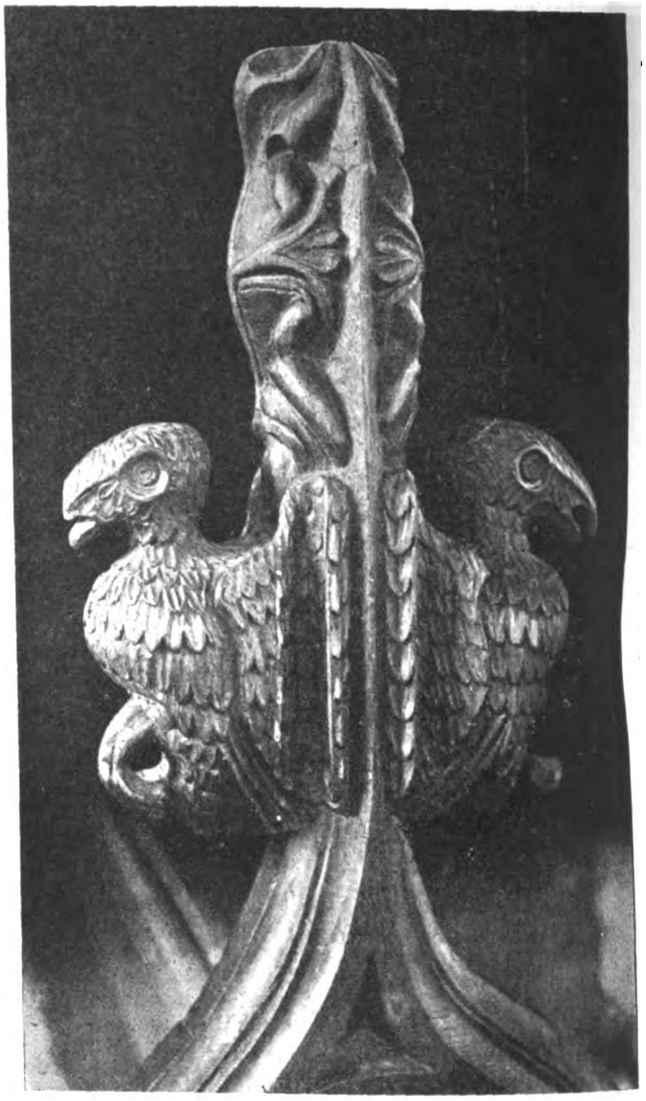
It is interesting to note that Shakespeare fell into this error, and in "Hamlet" he writes:—

> "To his good friends thus wide I'll ope my arms,
> And, like the kind life-rending Pelican,
> Refresh them with my blood."

symbol of the loving sacrifice of Christ is none the less beautiful.

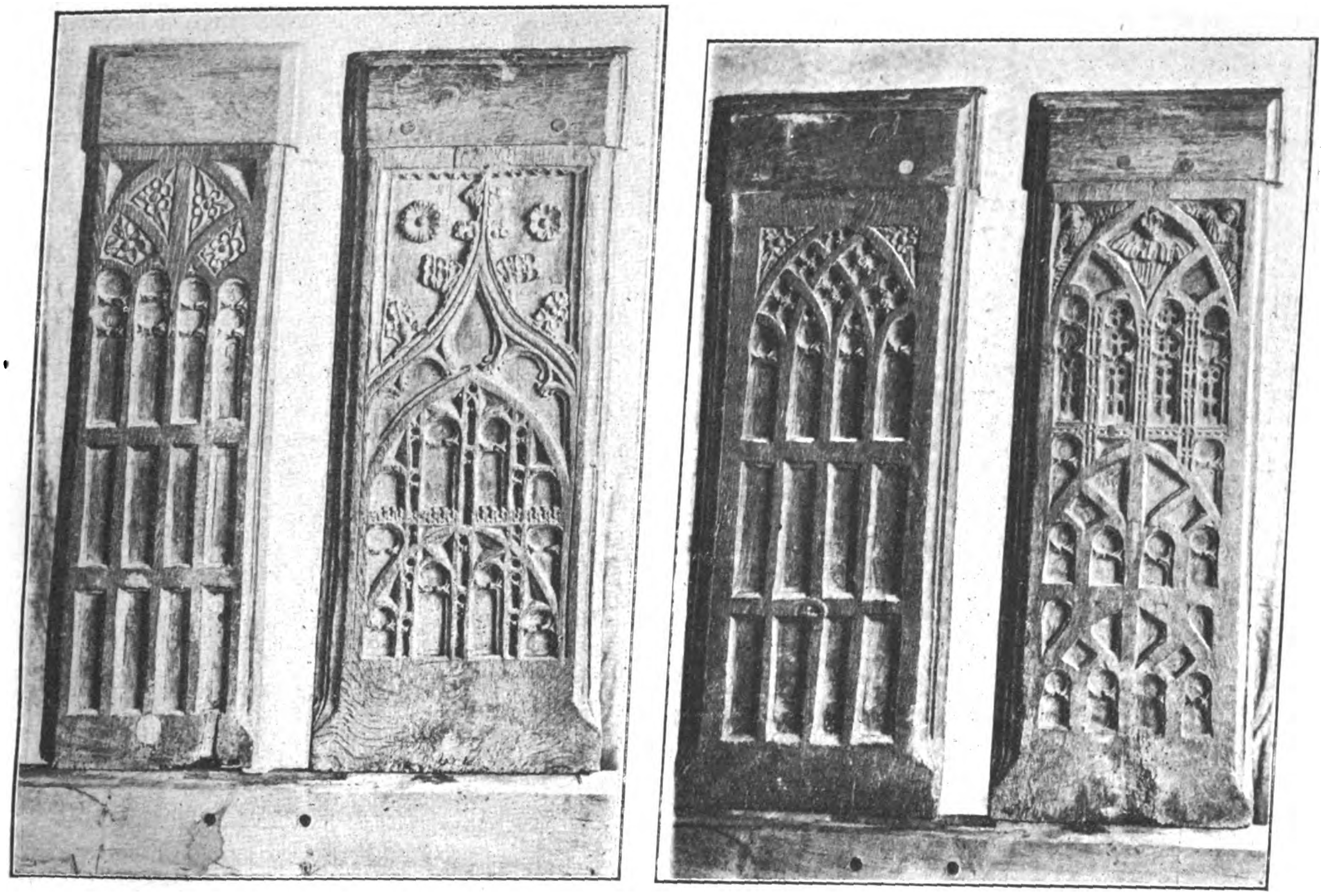
In later times this theory has been exploded, but the Some of the grotesques teach a wholesome lesson. One of this character may be seen in the choir of Chester Cathedral, where a beast with the face of a voluptuous drunkard is lifting a tankard to his lips, whilst the Devil kneels below forcing the tankard to his mouth. Another grotesque poppyhead calculated to have a beneficial effect may be seen in the parish church at Ufford, in Northants. It is two-faced, an admirable representation of hypocrisy, and a perennial warning to the villagers to be honest and straightforward in their dealings. Some of the early carvings are very crude—almost ludicrous—in conception, but nevertheless of the greatest interest to the archæologist. A typical example of this kind is afforded in the representation of Adam and Eve in the Garden of Eden from a bench end in the church at Osbournby in Lincolnshire. Tradition states that this was carved by one of the monks at Crowland Abbey.

Particular attention may be drawn to the fourteenth-century bench ends in the church at Walcot, in Lincolnshire, some photographs of which are reproduced with this note. During the recent restoration of the church the opportunity was taken to photograph these old bench ends prior to their being repaired and replaced in the church. The whole set is admirable and well worthy of the attention of the student. It is questionable whether any modern work in a village church reaches the standard set by these fourteenth-century carvers as displayed at Walcot. Probably the reason is an economic one, but we cannot get rid of the fact that less attention is paid to the adornment of the bench ends and poppyheads than was the case in the olden time. The era when grotesques were the mode is happily past and gone, but there is no reason, except it be a question of £ *s. d.*, why the pattern set by the carvers of the fourteenth and fifteenth centuries should not be more closely followed than is the case in these modern times.



PELICANS ON POPPY-HEAD, HALTON HOLEGATE CHURCH.

The Earl of Powis has deposited plans with the Welshpool Town Council for the laying out of a garden city of fifty acres off Severn Street. The plans show designs for three large villas and sixteen superior cottages in semi-detached blocks with large gardens surrounding each of them. The scheme, if successful, will be extended.



ECCLESIASTICAL WOODWORK.—BENCH ENDS, WALCOT CHURCH.

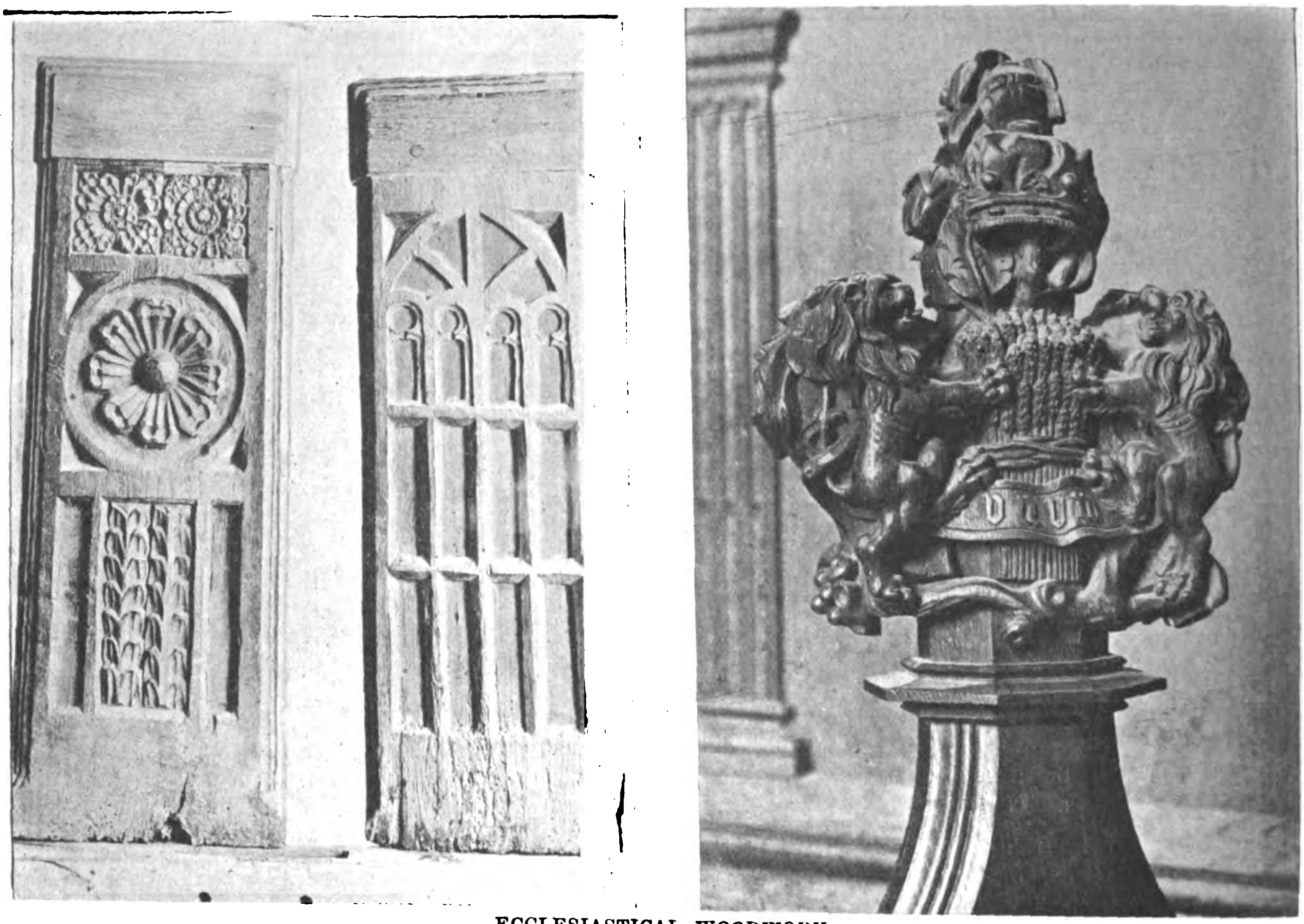
PRESERVATION OF ANCIENT MONUMENTS.

THE report of Mr. C. R. Peers, the Inspector of Ancient Monuments, on his work for the year ending March 31, 1913, has now been issued. It is prefaced by a memorandum by Earl Beauchamp, the First Commissioner of Works. From it we take the following extracts:—

The materials on which these reports are based require to be carefully collated, and, as the time of their preparation coincides with the period of maximum activity in the work of inspection, a considerable interval must always elapse before they can be presented. In the present year this interval has seen the partial realisation of my hopes, for the hands of the Commissioners of Works have been materially strengthened by the passing of the Ancient Monuments Consolidation and Amendment Act.

This measure, indeed, introduces a new era in the history of the preservation of ancient monuments. The increased general interest which has now for some time past been taken in the subject has, in some cases, stimulated owners either themselves to do more for the preservation of their monuments or to place them under the guardianship of the State. But there are still many monuments—some of them of outstanding merit—the owners of which are unwilling to adopt either of these courses, and which, in consequence, are rapidly falling into decay. There are others, again—not, I think, a large number—which have been damaged by injudicious treatment, and have lost irrevocably some of their most valuable features. And, lastly, cases are not unknown of the wanton destruction or removal of monuments. The hope, which was apparent in the tenor of the former Acts, that owners would welcome the assistance of the State has, in general, proved to be vain, and in these cases of neglect and damage there was no power of intervention. For such cases the present Act does provide a remedy, for it empowers the Commissioners of Works to adopt measures of varying stringency for the protection and preservation of these monuments. In the first place, it enables them, if they consider it desirable, to give advice with reference to the treatment of a monument and to superintend the execution of the work free of all charges except for out-of-pocket expenses. Secondly, the owner of a monument included in a list to be prepared and published by the Commissioners from time to time, is compelled to give notice to the Commissioners of his intention to carry out any work of demolition, removal, alteration, or addition, and is prohibited from commencing the work for a period of one month, thus enabling the Commissioners to satisfy themselves that the proposed works will not be injurious to the monument. Lastly, the Commissioners may, on learning that a monument of national importance is in danger of destruction or removal, or damage from neglect or injudicious treatment, protect it by the issue of a Preservation Order. Whilst that Order is in force the owner may not demolish or remove the monument, or carry out any work in connection with it, without the written consent of the Commissioners; and, further, if the monument is liable, owing to the neglect of the owner, to fall into decay the Commissioners may themselves undertake its guardianship. The Commissioners have no intention of exercising these arbitrary powers without good cause, but they would be failing in their duty if they allowed any gross cases of neglect or damage to go unchecked.

Another most important feature of the Act is the provision for the constitution of Advisory Boards, representative of the expert opinion of the country, whose functions will be to draw the attention of the Commissioners to any monument of national importance which is in danger, with a view to the issue of a Preservation Order; to aid them in the preparation of the list of ancient monuments referred to above; and to examine the proposals of local authorities in dealing with ancient monuments. I am taking steps to constitute these Boards at the earliest possible moment, as their existence is essential to the proper administration of the Act. The provision for their appointment is in itself intended to express the view which I strongly hold, that without the support and approval of the large body of expert opinion which happily now exists in Great Britain, the Commissioners of Works could not hope to deal satisfactorily and finally with this most important question. The consequence of ignoring the opinion of unofficial experts may be seen in France, where, though the machinery for the preservation of historic monuments is far more developed than anything we can hope to attain in this country for the present, there is little, if any, co-operation between the officials of the Commission of Historical Monuments and the many well-known antiquaries and connoisseurs of the country. As a result, the official work, however good and well-intentioned, is watched in a critical spirit by the instructed public, and tends in its



ECCLESIASTICAL WOODWORK.

BENCH ENDS, WALCOT CHURCH.

POPPY-HEAD IN THE BURGHLEY CHAPEL, ST. MARTIN'S, STAMFORD.

inception rather to be opposed than supported, making an entirely needless drag on all the undertakings of the Commission. Such a dénouement must be avoided at all costs, and I look forward with confidence to the assistance of the Advisory Boards in preventing it.

The only other provision to which I will specially allude is the extension to the Borough Councils of the power to assist in the preservation of ancient monuments. Great Britain is fortunate in possessing so many monuments that it would be impossible, in any circumstances, to contemplate the preservation of all, or of any large proportion of them, at the expense of the State. It is hoped, therefore, that local authorities will co-operate with the State, and, when owners cannot or will not preserve their monuments, will in some cases undertake the task. It has been thought necessary to subject their activities in this direction to supervision by the Ancient Monuments Boards and to possible veto by the Commissioners of Works.

This brief statement may suffice to show the intentions and possibilities of the new Act. Its inception may be traced to a suggestion in the first report of the Royal Commission on Historical Monuments in England, which appeared in 1910; but I should hardly have felt justified in asking for these additional powers if I were not convinced that the Commissioners of Works are already dealing with the ancient monuments now in their charge in the right spirit and in the proper manner. The necessity of acting only on the advice of experts in carrying out this particularly difficult and technical work was, indeed, recognised on the passing of the Act of 1882, when the late General Pitt-Rivers was appointed Inspector of Ancient Monuments, but it can hardly be said that this advice was always implicitly followed or that much encouragement was given to him; and, after his death in 1900, the office was for many years allowed to remain vacant. But since the appointment of Mr. Peers in 1910 a special staff has been created to carry out the work. This staff works in the closest co-operation with him, and does nothing except with his approval. As a result, the effectivity of the staff is steadily increasing, and some progress has at least been made in the direction outlined by Mr. Peers in his first report as the ideal of State action, which should be not merely to preserve the national monuments, but to render accessible to the public the many points of interest and instruction which may be obtained from them. For, though it is impossible, even with the powers conferred by the new Act, for the State to exercise supervision over all monuments of national importance of whatever class, it has been possible for the Commissioners so to treat the monuments actually committed to their charge that they may serve as object-lessons to the public. That this is now being done is, I think, abundantly clear from the annexed report.

REPORT OF MR. C. R. PEERS.

I beg to submit a report, as Inspector of Ancient Monuments and Historic Buildings, for the period April 1, 1912, to March 31, 1913:—

I. The number of such monuments now under the care of the Commissioners of his Majesty's Works and Public Buildings is 140.

II. In the lists forming part of this report they are classified under two heads: (i.) Monuments transferred to the charge of the Commissioners under the Act; (ii.) Crown property, including military buildings.

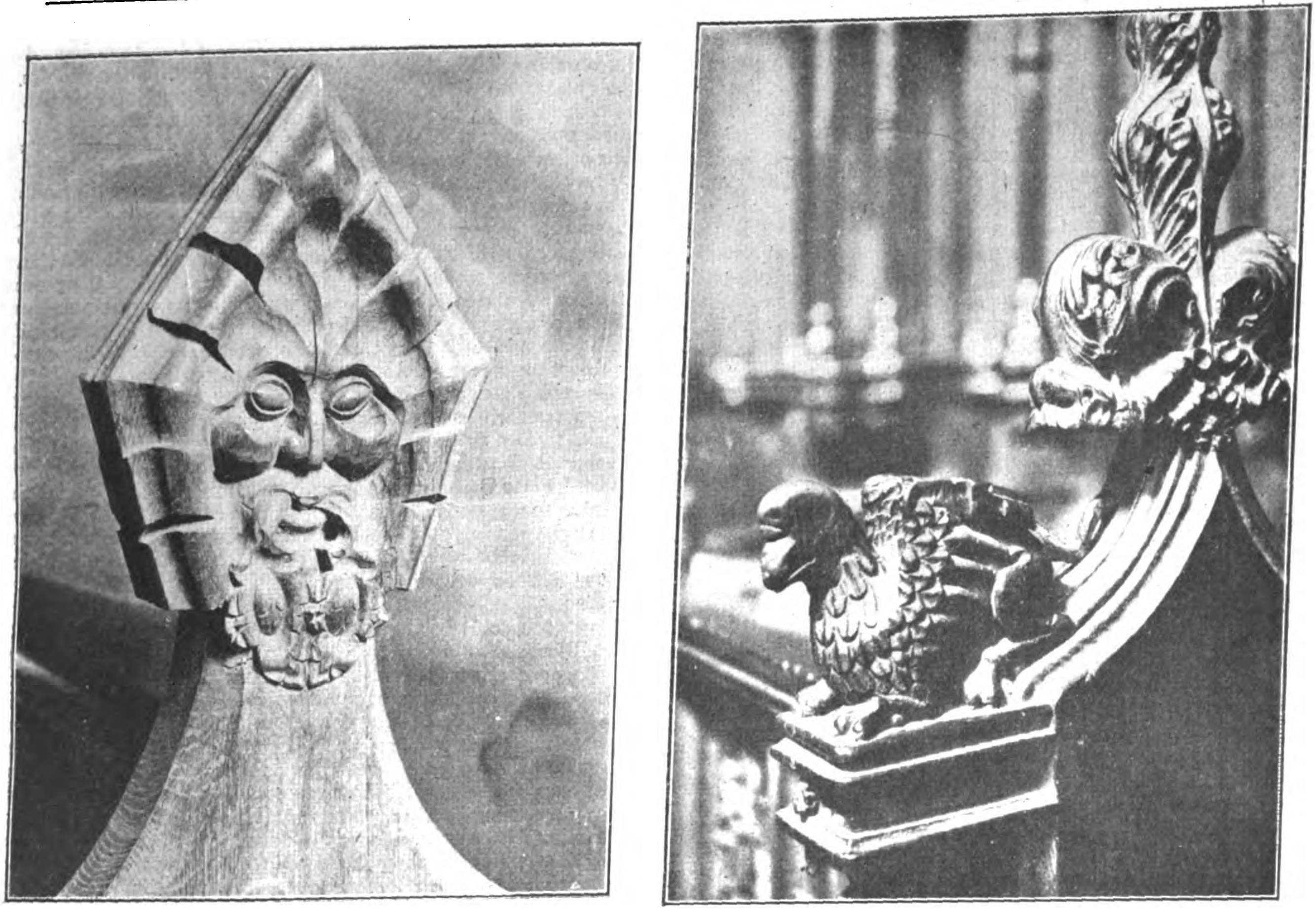
III. The number of monuments which have been brought under the care of the Commissioners during the past year is twenty-two.

Of these monuments, seven are in England and Wales and fifteen in Scotland.

The list is as follows:—

The Walled Camp, known as Caer-y-Twr, on Holyhead Mountain, Anglesey; Crossraguel Abbey, Ayrshire; Penrith Castle, Cumberland; gravestones of Fair Helen and Adam Fleming at Kirkconnel, Dumfriesshire; Merkland Cross, Dumfriesshire; St. Botolph's Priory Church, Colchester, Essex; Culross Abbey, Fifeshire; sculptured stones at Aberlemno, Forfarshire; Affleck Castle, Forfarshire; the Maison Dieu Chapel, Brechin, Forfarshire; Rodel Church, Harris, Inverness-shire; Urquhart Castle, Inverness-shire; Richborough Castle, Kent; Carsluith Castle, Kirkcudbrightshire; Orchardton Tower, Kirkcudbrightshire; Threave Castle, Kirkcudbrightshire; the Eagle Rock, Cramond, Linlithgowshire; Mattersey Priory, Nottinghamshire; Huntingtower, or Ruthven Castle, Perthshire; Jedburgh Abbey, Roxburghshire; Framlingham Castle, Suffolk; Roman road on Wheeldale Moor, Goathland, Yorkshire.

IV. The Ancient Monuments Branch, under Mr. Frank Baines, M.V.O., as architect-in-charge, with Mr. J. Wilson



ECCLESIASTICAL WOODWORK.

POPPY-HEAD IN UFFORD CHURCH. POPPY-HEAD IN MANCHESTER CATHEDRAL.

Paterson as assistant-architect for Scotland, has most successfully carried out a large number of important works. In every case completion reports of the year's working, in addition to the weekly reports by the clerks of works, have been prepared, and have been largely drawn upon in compiling the illustrated report issued as a Stationery Office publication.

V. A full account of the works carried out during the year is printed in the illustrated report above mentioned.

In the Appendices at the end of that report will be found notes of experiments conducted by Mr. Baines to test the values of certain preservative solutions in preventing the absorption of water by stones to which they have been applied, a report on the use of limes and sands for pointing, and a copy of the detailed instructions given to all foremen working for the Department, together with an account of work carried out at Eltham Palace for the Office of Woods.

VI. In the carrying out of the year's works the value of constant and efficient supervision is apparent at every turn, and this can only be obtained by a closely organised system of control, every workman being in direct touch with the Department through the foreman and the clerk of works. Such a result can only be obtained by keeping the management of every detail in the hands of the Board through a system of direct labour. The employment of a contractor at once produces complications and loss of direct control, and the additional work and responsibility thrown on the Department by dispensing with a contract is amply compensated by the results on the standard of the work.

The report concludes with a schedule of ancient monuments and historic buildings.

PERFECTION IN ARCHITECTURE.

By Philip J. Dear, M.A. Oxon.

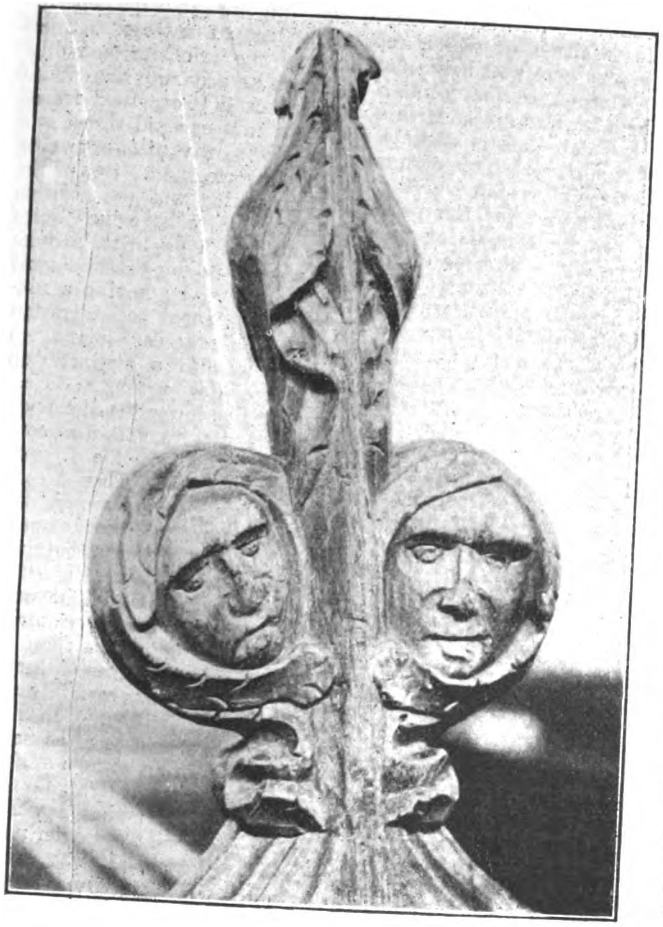
Mr. March Phillipps is too fond of words; his maxim seems to be, "You take care of the sounds, and the sense will take care of itself": he does not consider fully whether his assertions really correspond to, and express the exact circumstances of, the case dealt with. This is perhaps what one might expect in an amateur of architecture; a marked example of it is given in his book, "In the Desert," where he speaks of Arab want of finish as compared with Gothic perfection, giving the Mosque at Kerwan as illustration of the one, and the choir of Bayeux of the other—that is to say, the work of a very primitive and remote people is put against that of the very centre of the artistic development of its style. It would be much more correct to say that these buildings were of very different ages and races: if he had taken the mosques of Egypt and India, which correspond to the height of Gothic evolution, he would find that they are quite comparable in finish and perfection with any work of their period; and when he speaks of Arab art he really means Moslem, for Arabia and the Kaliphate of the Euphrates Valley, which sprang from it, are really patent examples of the principle that a primitive and undeveloped race always has rude and ill-finished buildings; while perfect and well-designed architecture is only evolved by advanced nations. They practically arrived at no artistic consummation, and it is only in their successors that you can look for any perfect work at all. On the other hand, imperfection and crudity of the most flagrant kind may be found in all Norman buildings, and in the parallel and previous erections of the Rhine Valley, South France, Spain and North Italy, and the Danube. To be just, you must compare the structures of Ireland and Scotland with those of the west of Africa; while even the North of England can hardly produce early work superior to the Moslem architecture of the same age. Nay, at St. Albans even, and in London itself, you get work not more perfect, especially when you consider the deadening effect of having ready-made Classic columns at hand, whilst the earlier Moslem builders were almost in the position of children building with boxes of bricks. They had only to rearrange to suit themselves the materials provided by their predecessors. Rome can also show numberless—not superior—results of this process; old work jumbled together regardless of matching or fitness. The mere fact, as is shown by our experience to-day quite clearly, that you have to hand detail which you feel to be above you may deaden rather than stimulate enterprise, and it is no wonder that a new and young nation, coming into the wealth of an old and developed one, should have suffered from this when that nation itself showed plainly its own falling off from the perfection of its forefathers. Hugger-mugger piecing together of the remains of antiquity was the method of that age, which the Romans, one may say, had deliberately encouraged by appropriating the artistic work of Greece instead of evolving their own undoubted abilities. Germany has never recovered the effects of adopting the French style in place of her own more virile, if perhaps less ornate and beautiful, mode. France itself carried off the art treasures of Italy, and possibly its meagre Classicalism and neglect of its own most perfect manner to-day is due to this. If you steal your brooms ready made, you soon lose the power of making them; if you only steal the materials, you still retain the power of putting them together, but lose the talent of making them yourself. It is for this reason that some of us are so anxious and insistent that the new capital of India at Delhi should, so far as its decoration is concerned, at least be the work of native artists—of course under proper supervision—and that an exotic style should not be forced on the artisans of that country, with the almost certain result that their work will be unsatisfactory both from a European and an Indian point of view, a hybrid and mongrel combination, losing the beauties of both, and merely giving a spiritless copy of ill-understood forms. We have enough of that amongst ourselves; to prove this it is only needed to quote Ruskin's view of the Royal Academy building in Edinburgh, which is looked upon generally as the finest Classical work in Scotland, and is praised by Fergusson as one of the happiest modern attempts in that style. "Where in the building from which this was taken there was, perhaps, the most beautiful band of ornament this world has ever seen, its designer could think of nothing better than to repeat some hundred times over the decoration which the Greeks put at the end of their gutters. In the metopes, again, where they lavished their most beautiful sculpture, there is an ill-designed and badly executed wreath repeated over and over again, above which are as many lions' heads, looking like a cross between a pussy cat and a puppy dog with indigestion; while under the pediments the honeysuckle pattern is magnified into a monstrosity, to make up for which a statue of Queen Victoria is set astride of their highest point, and a sphinx is seated on each of their lowest angles."

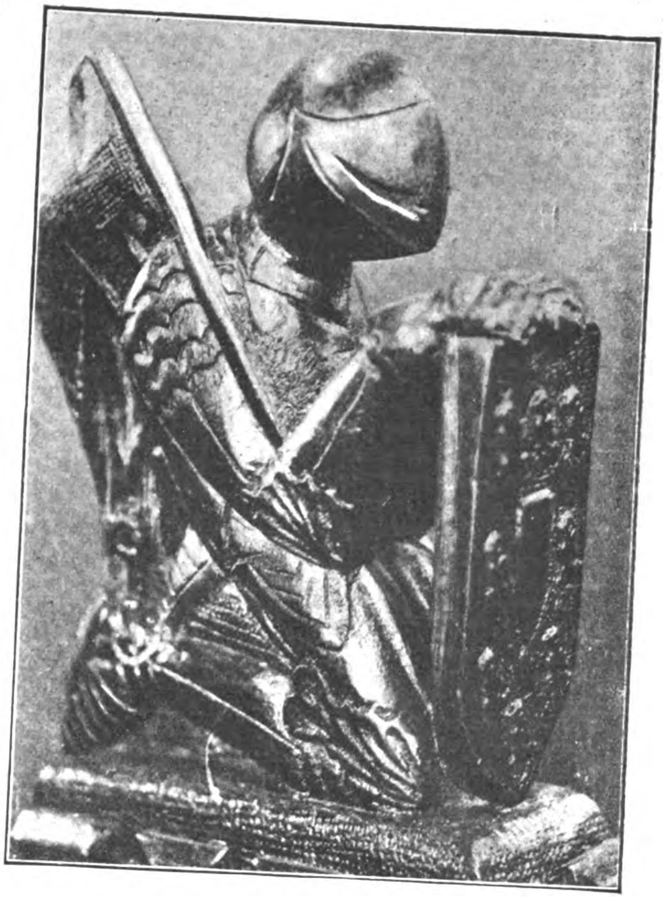
But the truth involved here is not, I think, what Mr. Phillipps seems to imagine; he calls Gothic a creative, Classic, an imitative style. The reverse might be said with equal, and perhaps greater, truth. Gothic artists built in an accepted manner, which had developed slowly in a natural sequence, and each structure was an improvement or variation of those which went before, just as our ships are all alike, yet all different, from peculiarities contrived for special purposes. But since the Classic Renaissance each designer has set himself to produce something new, something unheard of and unseen before. His whole energy is bent on the structural details of his creation; its artistic finish is comparatively neglected. You have only to compare the dome of the cathedral at Florence, with its meagre detail, with the body of the building to see this at once. It is true that Fergusson condemns even the latter as poverty stricken, but he overlooks the fact that its vault, which he blames especially, was intended by its authors, Giotto and Arnolfo, to be painted, like the Spanish chapel at Sta. Maria Novella and the chapel of the Sacrament at Orvieto, and that its walls were to be decorated in keeping. Of this design the large flat spaces and absence of architectural features were a necessary concomitant. There are two types of building: a southern and a northern, an earlier and a later. In the former, the intention was that the walls themselves were to be ornamented with mosaic or painting or marble; they are, therefore, not much broken up, and the windows are kept small, with clear glass or none at all. In the other, the windows are adorned with colour, and become larger and larger; the wall space gets less and less, and depends for its effect on architectural mouldings almost entirely. Of these, the first is capable of the higher art, but experience showed that it was too often left in an unfinished state, because the decoration and the erection were in different hands; the one of the artist, the other of the engineer. Besides this, the duller and damper climate of the North at once necessitated larger windows, and some means of closing them against the weather; and the defect in art compelled some more mechanical method of decoration. Hence both in the East and in the West a sort of glass mosaic was contrived to fill up the openings. By the Moslems this was arranged in frames of stone, marble, or plaster, each piece of coloured glass being fitted into a hole specially prepared for it. In the West they were joined together by a framing of lead, the difference perhaps depending on the greater development of lines in this direction or the greater durability of plaster in the other. So perfect, as a fact, was the Moslem use of these materials that Fergusson mistook the Dome of the Rock at Jerusalem for a Christian building, and asserts that it is excelled in beauty by no structure. It is very necessary to draw attention in a clear way to these two types of building, for it is very common, even for expert architects, and of course still more so for the ignoramuses into whose hands their work passes, when done, to confuse the two, to their own confusion and that of those who suffer at their hands. Thus a church designed in the former style, with small windows and broad wall surfaces, which should be decorated by surface adornments, too often has its lights blocked by coloured glass, and is rendered gloomy and unfitted for its purposes, while the effect is meagre and poor. It is, in fact, to-day so fixed in the minds of ordinary people that coloured glass is the proper ornament for churches that you can hardly persuade them that mural decoration is the right method for small-windowed edifices. They never thought of it, and they cannot bring their minds to it. Now, this is a real distinction in structure; that which Mr. Phillipps insists on in his paper in the *Contemporary* is not. No building was ever purely creative; the nearest approach to it is the Pantheon at Rome, with its offshoots at Florence and St. Peter's, and still more at S. Sophia, to which a series can be traced up through the domes of the Thermæ and Minerva Medica. St. Paul's might well be looked on as the most original in England. Wren was certainly far more so than any Gothic architect, for the truth may be stated somewhat thus: Gothic was imitative in construction, creative in ornament; Italian was creative in structure, imitative in detail. The fact was that the earlier designers, so far as one can judge from Vasari, were artists who felt themselves able to decorate any building. Southern Gothic and Early English, with its decorated surfaces, were the product of these. As we get into the Middle Pointed, the purely artistic element seems less obvious; it has passed, one might say, into the coloured windows, which were the work of wholly different men from those who planned the edifice. When we get to the later phases, Bishops and other Churchmen, and even professional architects, appear to have designed the building, and the really artistic treatment of its detail and adornment was in a great degree left for after consideration, and, to a great extent, in the hands of workmen. So long as the buildings were all more or less alike they could be safely left in the builder's hands; but when what we may call questions of engineering came in there was need of someone who could calculate and provide for these. There was certainly a definite architect at Cologne, and Frenchmen went from time to time to supervise the Gothic erections in Spain. This is quite inconsistent with Mr. Phillipps' view that somehow a crowd of workmen evolved a design, though apparently then a man began as a mason, and went on to be a carver, and perhaps finally became boss of the works. To-day men set to work to plan erections who have never held a chisel, who know nothing of ornament, and think very little of it; their notion is to make as fine a building as they can for the money, and the end of it, not seldom, is in accordance with the precept, "When you think you are very grand the probability is very great that you are making a fool of yourself." Unfortunately, these men make fools of the buildings, and their work lives on when they themselves have passed away and are forgotten.

ART IN LONDON.

AT THE GALLERY OF GOUPIL & CO.

OF the three dozen etchings by Mr. Burnett Orphoot at No. 25 Bedford Street, Strand, at least fourteen attract by their all-round masterliness, whilst many others deserve attention by reason of the quality of their technique, even if in some instances they lack interest otherwise. Special notice should be given to "Barton, Yorks," to "Low Tide," which is a poem revealed, to the breadth and the attention to chiaroscuro displayed in "The Arch of Titus" and "Ferniehurst," to the excellent "Traquair (2)," which is as notable in its strength as "Low Tide" in its softness, to "Versailles," "A Doric Temple, Girgenti," where every touch of the tool tells, "Rue de Buci," and "The Tweed at Peebles." Mr. Orphoot understands his architecture, and his boat pieces in general are effectively touched in; his treatment of water surface is perhaps the least satisfactory of all.





ECCLESIASTICAL WOODWORK.

POPPY-HEAD IN HALTON HOLEGATE CHURCH.

POPPY-HEAD FROM THE CHOIR OF ROCHDALE CHURCH.

On penetrating further into the Bedford Street premises we came upon a small exhibition of modern Dutch Art, but by it we were not impressed. How different was the old school to most of the work exposed to view! Mrs. Bisschop Robertson's "Girl's Head" and "Dressing" are of the coarsest technique, but she did well to drag "Red Herrings" across our path of observation, for it is a thoroughly virile piece of work and very realistic. Frans Langeveld's exhibits lacked impressiveness, saving his representation of storm and clouds; his "Horses in the Snow" looked as if they had issued from a toy Noah's Ark, and the less said about "A Race" the better. S. Garf was more satisfactory in "Young Musicians," and though the half-tones on the youngest child's face seemed too cold, the eye could dwell with pleasure upon the modelling of the elder girl's hands. Jac. Snoeck's "Sunlit Interior" and "Interior with Goat" showed the real Dutch feeling for their minute respect to detail and the warmth of tone; the former canvas shared first place in merit with E. van Beever's "Old Nurse," an excellent work in its brightness, light, atmosphere, and pleasant colour scheme. Mr. Broedelet and Mr. van Beek had some good work, too, and for the rest—let there be the silence of indifference.

GERMAN "WERKBUND" EXHIBITION, COLOGNE.

THIS exhibition has been arranged by the German Werkbund in co-operation with the city of Cologne, to show the progress made during the past ten years in the endeavour to ennoble industry and artisanship, and will be open from May to October next.

The Werkbund Exhibition has set itself the task of giving as complete a picture as possible of the present position of modern German finished workmanship. It is not a question of exhibiting the arts and crafts in the old sense of the word, but of showing the application of art to all kinds of handicrafts, trades, and industries. The new sense of beauty, which has been awakened in the last ten years, is the beauty of appropriateness, of technical perfection, of honest workmanship, of every possible application of every kind of material. Beauty in this sense shows itself in the simple earthenware jar, in ingenious well-worked tools, in articles produced *en masse*, and in little objects of daily use made of inexpensive materials. Work ennobled by art, the best quality of workmanship put into all kinds of work, does not need pompous ornament; the best workmanship in the sense of the Werkbund can be shown in a locomotive, a motor-car, a travelling-trunk, or any other article. From this it is clear that the German Werkbund Exhibition is no arts and crafts exhibition in the old sense of the word, but an exhibition showing workmanship of every sort, provided that the work is good, honest, suited to the material worked in, and beautiful in form.

THE LIGHTING OF PICTURE GALLERIES AND ART STUDIOS.

AT a meeting of the Illuminating Engineering Society, held at the House of the Royal Society of Arts, Adelphi, on February 17, a discussion took place on the above subject.

Professor Silvanus P. Thompson, D.Sc., F.R.S., in opening the discussion, explained that the Illuminating Engineering Society dealt with lighting both in its most general applications and in reference to special cases. Already they had discussed the lighting of schools, libraries, and public buildings of many kinds. They met on a common platform, and did not go out of their way to praise this, that, or the other illuminant. But they found a common ground for all, and endeavoured to lay down rules which govern a satisfactory illumination of surfaces. The lighting of picture galleries and studios had not yet been discussed by them in detail. His own task that evening was a simple one—namely, that of making points which would be more or less debateable and to ascertain the experience of those who were better qualified to speak. In every gallery in which objects are to be seen by daylight there must be windows, and they wanted to know the best disposition for them and the best arrangement of the apertures. It was presumed that for the majority of galleries the surface to be illuminated was a vertical one against which the pictures were hung. Besides this there were, of course, horizontal surfaces on which works of art were often displayed. And for the lighting of sculpture galleries different conditions prevailed.

He would lay it down as a general principle that there should be a superabundance of openings in picture galleries for the light of the sky to come in. If there was not enough the pictures suffered. If there was a superabundance of openings it was always possible to diminish their amount. Architects ought to have impressed upon them the necessity for an abundance of top lighting. As a general rule side lighting was disastrous to certain aspects of pictures owing to reflection from the glass or varnish.

He believed he was safe in saying that he had seen no satisfactory art gallery where the height of the openings through which the light came did not allow that light to strike the pictures at an angle of about 45 degrees. Otherwise the people standing a few feet away get the direct reflection from the glass if the openings are too low. What was done with the rest of the wall between the top of the pictures and the openings through which the light enters was a matter of considerable importance. In some galleries it was treated as if it was of none. When direct light is coming in from an opening a great deal of that light is received upon the side walls, and the latter give cross reflections. That is to say the pictures on one wall receive some light from the opposite wall. Consequently the space required to be carefully decorated. A very remarkable example of misjudged decoration is afforded by the Turner Room in the Tate Gallery, where the space above the pictures up to the skylights was painted a strong crimson tone, with the result that the reflected light from this crimson wall illuminates the pictures on the opposite side with a red light. On a bright, sunshiny day, with clouds moving, the pictures absolutely change colour as you watch them. The effect made by the colour of the reflecting walls had not been considered properly.

For studios, practice had crystallised almost into a regulation that there should be a top light facing north, so there need be no trouble with direct sunlight. Artists would be well advised if they had a superabundance of glass, for they could always shut off the excess of light by curtains as required.

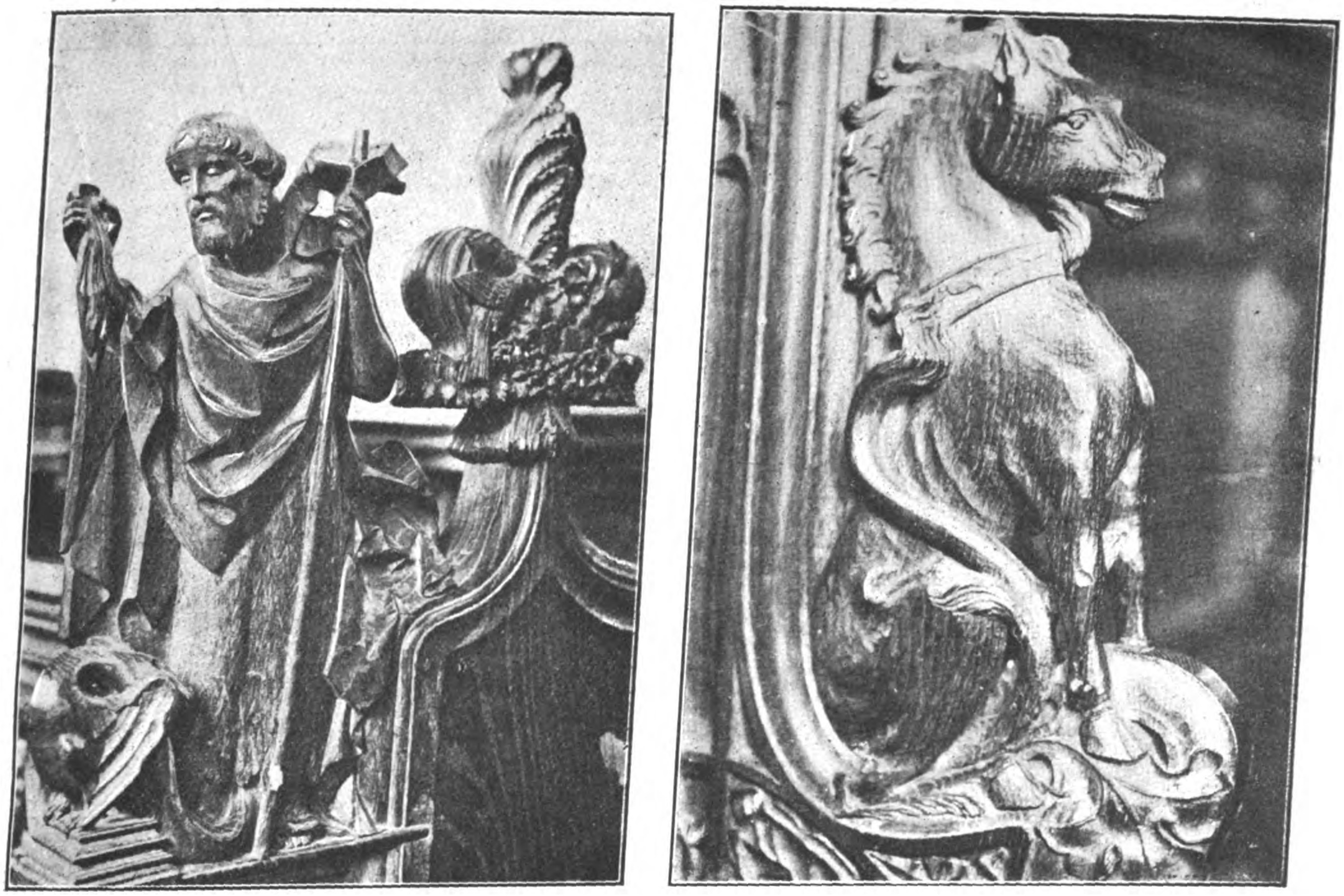
What was the right position in picture galleries for the placing of artificial light? The particular object of such lighting might be either general illumination or the lighting of particular pictures. The lamps should be so screened that the observer received no interfering reflections from the glass, in other words, the lamps must not interfere with the proper viewing of the pictures. The easiest way was to employ "Indirect" lighting which diffuses the illumination. Indirect lighting was a quite common mode. It proved very satisfactory from certain points of view. For engineering offices, for example, it seemed admirable. But it was not satisfactory in every case. There always appeared to be something "wanting" if the illumination is indirect. Especially is this the case where the desire is not simply to illuminate the walls, but to illuminate the objects below. For sculpture galleries it was unsuitable, for there a light was wanted which gave shadows. As regards the position of lamps for artificial lighting, they ought to be so placed that the main direction of their light is the same as the main direction of the daylight. He laid down that axiom as a general proposition. An exceedingly good example of gallery lighting was afforded by the new art galleries of the Royal Scottish Academy in Edinburgh, which included a number of interesting features. The artificial lighting there is by groups of lamps placed all round the skylight so that the direction is the same as by daylight.

For the artificial lighting of studios he would lay down the same rule. Many years ago he had the honour of being consulted by one of the most distinguished Royal Academicians as to how it would be possible to get a little longer illumination by daylight. He recommended the painter to place two good arc lamps in his north light and to switch these on half an hour before the daylight waned. The artist found that he no longer noticed the difference between daylight and artificial light. It had always been an objection to all artificial illumination that its colour was so different from daylight. Probably those who complained so bitterly did not know how extremely different daylight may be from daylight. If they were to succeed in matching a morning sky with artificial light, they would not be matching an afternoon sky. It was now, however, possible to go a great way towards approaching daylight. This has been achieved in many ways. But there was considerable slowness among artists in using such artificial means. Arc lamps had an intensely white light. This, however, can be toned down. In the industrial world much had been done for the arranging of the matching of colours. In Bradford a great amount of attention had been given to this. Professor Gardner, for example, of the Technological College, had made many experiments, and he had devised an arc lamp globe in the composition of which cobalt and copper entered. These lamps were now being used extensively for colour matching. A German company had brought out an arc lamp surrounded by a lantern glazed with a curious mosaic of coloured glasses, in which blue is slightly prevalent, and around which is a diffusing screen of corrugated glass, with the object of mixing up the mosaic and giving a diffused white light. One of the very worst for the purpose of matching was the horrible green light used for tube stations. There have been quite recently a number of attempts to match daylight, and he claimed for them a distinct success, to produce incandescent Tungsten lamps, which imitate daylight by having a filament inserted in a globe that is itself tinted pale Prussian blue. It has now become an exceedingly easy matter to introduce daylight lamps, which marked a distinct step in advance. There remained a great deal yet to be done.

Mr. A. P. Trotter said he would like to see the discussion turn upon the general lighting of picture galleries, both from the architectural point of view and from the point of view of the keepers of galleries. There was a great deal of difference of opinion on the subject. It was apparently very largely a matter of the proportion of the rooms as well as of the area of the windows. It was a general opinion that the new rooms in the National Gallery were a little unfortunate. The lighting of picture galleries might well receive further attention from architects. Lamps properly arranged may give infinitely better illumination than is given by daylight. The Turner Room in the Tate Gallery, to which Professor Thompson had alluded, was certainly an unfortunate instance of daylight illumination. In his opinion, the wall space above pictures should be of as pale a colour as possible. The north light in an artist's studio was not, as was popularly supposed, a constant light. With a clear blue sky the light admitted is blue; when a white cloud drives across the blue is of a different character; in late afternoon the light becomes yellowish. It was quite possible to get artificial daylight. He had given many years' attention to the question, but had received so little encouragement from glassmakers that he gave the experiments up. (Mr. Trotter then gave a demonstration of his machine, which he had devised for the matching of colours.) He hoped to find a glass which anyone could place in front of a lamp in a picture gallery, and thereby obtain a pretty fair approximation to daylight.

Mr. David Murray, R.A., said he had been particularly interested by Professor Thompson's criticism of the Turner Room at the Tate Gallery. His astonishment was that no one had yet offered a remonstrance about it in the newspapers. There never was such a fine collection of pictures so successfully destroyed. Poor Turner! That artist did not seem to have fared any better in the new rooms of the National Gallery, before whose walls of boiled spinach all the beautiful qualities of Turner sank ashamed of their environment. For a very long time he had been convinced that the worst lighted gallery in the world was the Royal Academy, for it was wrong from every point of view. A painter devoted three precious varnishing days to scraping and brushing in, and all to no purpose. When the picture came back to the studio it did not seem so bad; though everything done at the Academy had to come off. After two years of hard fighting, he succeeded in getting the authorities to allow artists to place glass before their pictures. The admirable direct light was by that means absorbed, and it is now possible to see something of that quality which the artists intended the spectator to enjoy. He quite agreed that in the lighting of studios the more light introduced the better. It was always possible to shut out what was not wanted; but it was not possible to call it in if there were no apertures. He might say that he had never painted a blue sky yet in the open air. The slimy surface of the paint reflects the blue sky and gives a tint which no painter has in his box. A blue lamp for artificial light would probably give fictitious values. He and other artists were looking forward to welcoming the new lamp approximating daylight as a way out of their difficulties on foggy days.

Mr. Joseph Pennell, president of the Senefelder Club, did not think there was the slightest relation between the lighting of a studio and of an art gallery; the one was to work in and the other to see things in. He had imagined that the north light "wheeze" had been played out long ago. He did not believe any artist cared about the nature of the light which came into his studio so long as it suited his purpose, and he refused to entertain the idea that any artificial light could be looked upon as even a reasonable



ECCLESIASTICAL WOODWORK.

ST. JOHN BAPTIST.. ON CHOIR STALLS, TIDESWELL. ON A BENCH END IN PARISH CHURCH OF BURY.

substitute for daylight. To prolong daylight was impossible. Artists were certainly using arc lamps; but a man who could deceive himself that he was working by daylight when under the influence of arc lamps must be colour blind. It was, in fact, nonsense to talk about matching daylight. The right method for the daylight illumination of art galleries had been hit upon years ago, when in a Whistler memorial exhibition a translucent screen or valerium was introduced below the roof lighting, and this was raised or lowered as required during the course of the day, for getting the light on the pictures at the right angle.

Mr. Bush (of the British Thomson-Houston Company) regarded the method of artificially lighting picture galleries either by fixtures in the centre of the room or by cornice lighting as a mistake. Sometimes it was essential to have something local. In America a form of trough lighting had been tried, with first-class results. In this the pictures were individually lighted from small reflectors placed at intervals of one foot, and adjusted to the special requirements. The method caused a considerable sensation and had been introduced into many private houses.

Mr. Ritchie pointed out that any globe giving approximately daylight effects was going to absorb from 50 to 80 per cent. of the light. That loss must prove a very important factor in the maintenance of an art gallery.

Professor Thompson, in closing the discussion, pointed out that the daylight lamps were not made by any one firm, but could be obtained from several, and of any desired voltage. He trusted that architects and trustees of picture galleries would be brought to a sense of their responsibilities in the matter.

THE ACTION OF TOWN AIR ON DECORATIVE WORK.*

BESIDES the emanations of factory chimneys and furnaces, which were once held chiefly responsible for air-pollution, a great share of the blame must also be attributed to the products of the various fuels used in public and private heating and lighting. Although this baneful effect has been going on for so very many years, and although prophets like Ruskin persistently pointed it out to our fathers, and even warned us that it would increase and become even more offensive, the warnings have been slighted or forgotten. The effect has been too much considered a mere sanitary matter for doctors and experts. It is only now that we are slowly becoming aware of the injury done to a number of the most valuable amenities of life, and the damage inflicted on all objects of utility and beauty.

The relationship between "fuel," in its widest sense, and internal decorative work has three chief aspects:—

(1) The contamination of the atmosphere by the by-products of heating and lighting, and, in its turn, the action of the so contaminated atmosphere on internal decorative work.

(2) A comparison on this point between different systems of producing heat and light.

(3) The physiological effects of these different systems of heating and lighting, and the way in which they affect our appreciation of decorative work.

The chief contaminants of town air, from our point of view, are:—

(*a*) Smoke, and its associates soot and smuts.

(*b*) Sulphur and sulphur products.

(*c*) Dust, from the various operations, "carrying coals," &c.

Smoke is a product of incomplete combustion, so that it represents a corresponding waste of fuel energy, amounting in the aggregate to an enormous loss to the community. Therefore, apart from the æsthetic or destructive aspects, the prevention of smoke is an economic problem of immense importance which still justifies expense in its solution.

Soot, which may be looked upon as the precipitate from smoke, is a mixture of unburnt carbon and mineral matters carried up as dust, and hydrocarbons or tarry matters from imperfect combustion, and a kind of distillation of the fuel. These last especially cause smoke and soot to adhere to buildings, paint work, &c., as a species of unsightly varnish, decidedly undesirable in most respects, although it acts, to some extent, as a protective coating. This only redeeming feature led to a singular conclusion of the National Association of Master House Painters, reported by Noel Heaton, that "smoke per se is not an important factor in the actual disintegration of the paint film, since it adheres

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* Abstract of a Paper read before the Paint and Varnish Society on Feb. 19 by Dr. Rideal.

ECCLESIASTICAL WOODWORK.

TREE OF JESSE. ON BENCH END IN CHESTER CATHEDRAL, IN FRONT OF WHICH IS SEATED A PILGRIM.

CRUDE CARVED BENCH END OF ADAM AND EVE IN OSBOURNBY CHURCH

and may actually protect." But it must not be forgotten that, in order not to appear unsightly, there is continual labour and cost in cleaning this film away, with consequent abrasion of the paint or actual ruin to works of art like frescoes, carvings, or statues. The soot also collects moisture, condensing from the air acids, also generated from the same source, which act corrosively on the surfaces.

Gardner (" Paint Technology and Tests," 1911) quotes a series of official observations on fences coated with different brands of commercial white lead paints, in fields near Pittsburg, Virginia, exposed to winds carrying the city smoke. In Pittsburg itself it was known that nearly all paints became darkened by deposition of carbon particles from the combustion of soft coal. But in the fields the inspectors were most impressed by the blackness exhibited by certain lengths of fencing as compared with the fair whiteness of others, and it was found that the difference arose from the composition of the paints. The two species were, first, what is there called "corroded white lead"—the ordinary kind, made by the familiar old process of acting on sheets of the metal by carbonic acid aided by acetic, and consisting of a basic carbonate—that is, carbonate combined with hydroxide. This invariably showed grey and black staining, attributed to " the sulphur gases which are present in the district immediate to Pittsburg."

The other species of paint is there named "sublimed white lead," and is a basic sulphate made by roasting galena. Its painted surfaces are reported as "not rough and presenting a very white appearance." Consequently this form of white lead is more popular in America than the old carbonate variety, and the strong acid, sulphuric, would naturally be expected to be more resistant to sulphuretted hydrogen than the weak acid, carbonic. The general fault of the sulphate, deficiency in "body," seems not to be felt with this preparation.

J. Newton Friend, in his "Introduction to the Chemistry of Paints," also remarks on "the peculiar knack that white lead has of darkening when exposed to the fumes from burning coal . . . due to sulphuretted hydrogen," and further observes: "Experiment shows that white lead is less likely to be affected by sulphuretted hydrogen when exposed to strong light. In fact, tarnished pictures may be very gradually restored by the action of prolonged and intense illumination. The effect is obviously one of oxidation induced by the light."

For the United Kingdom we may give the following estimate:—

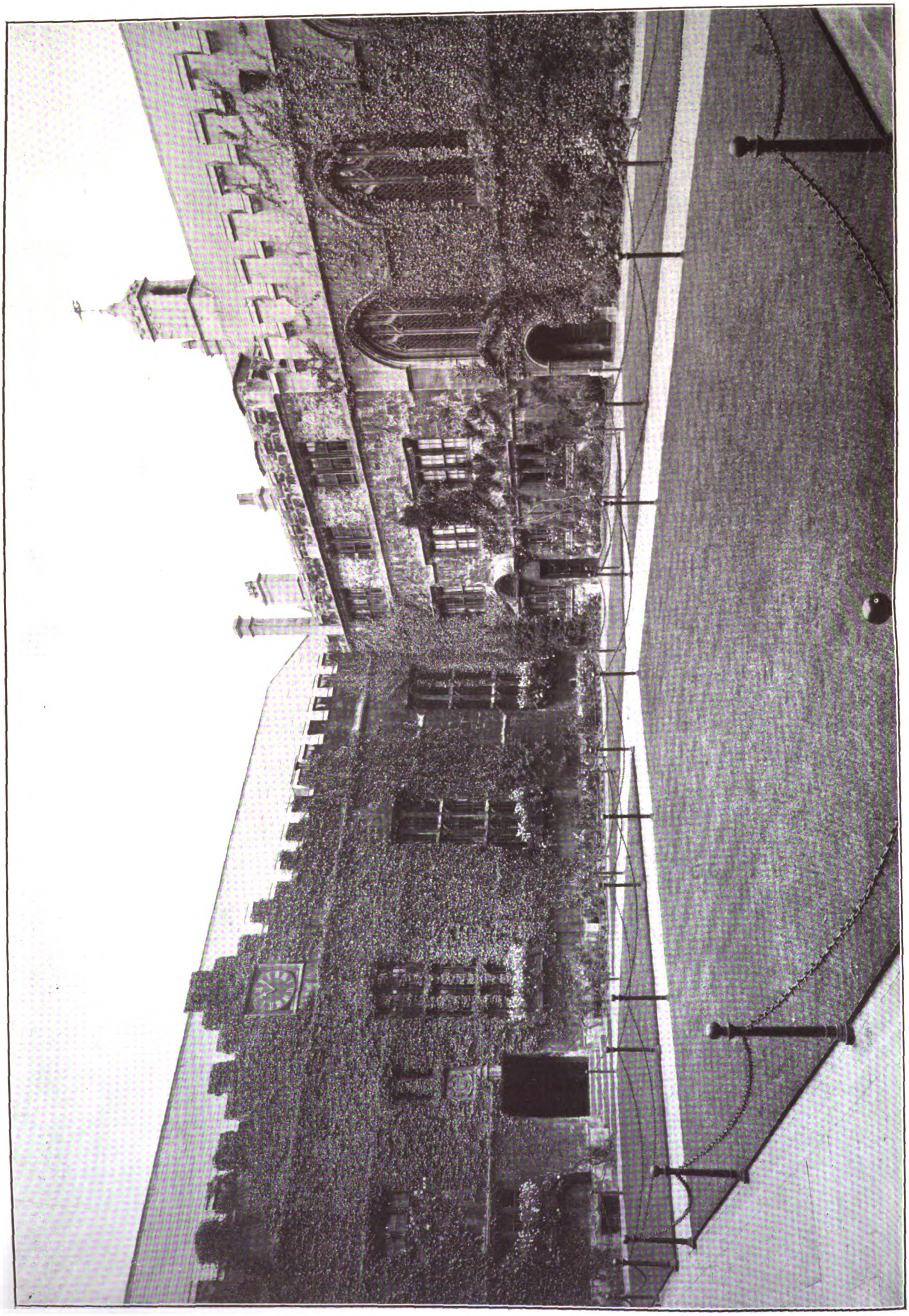
Coal Consumption and Soot Problem in the U.K.

	Quantity in millions of tons.	Per cent. as soot and smoke.	Loss as soot in tons.
Factories (for power)	60	0·5	300,000
Domestic grates	34	6·0	2,040,000
Iron and steel	30	0·5	150,000
Mines	20	0·5	100,000
Railways	13	5·0	650,000
Gas works	15	—	—
River and other boats	11	5·0	520,000
Total	185		3,790,000

The soot in London deposited annually amounts to about 76,000 tons, or 4,137,782 cubic feet, or 170,240,000 lb., and measures 413 feet 6 inches high by 100 feet by 100 feet. It is larger than the Clock Tower of the House of Commons, 315 feet by 40 feet by 40 feet, and much larger than Cleopatra's Needle, 69 feet by 8 feet by 8 feet.

What was the origin of the rule which obtains in London and in most other towns with leasehold property that outside paintwork should be renewed in every third year, whilst interior work is allowed by the landlord to pass for seven years before renewal? It seems to have been a recognised custom more than fifty years ago, and must have originated subsequently to the year 1400, when coal first began to be regularly burnt in London. In a judgment of Mr. Justice Willes, in a case of *Scale* v. *Lawrence* (1860), it was held that on a covenant "as often as necessary well and sufficiently to repair" the lessee was not bound to paint again on leaving, if he had painted the outside of the house during the previous three years, and the inside within the previous seven. Crown leases down to the early part of the nineteenth century did not contain any special painting covenant. When Regent Street was rebuilt under the new Street Act of 1813 leases granted by the Commissioners of Woods included a long clause to the effect that "the outside wood and iron

(*Continued on page* 249.)



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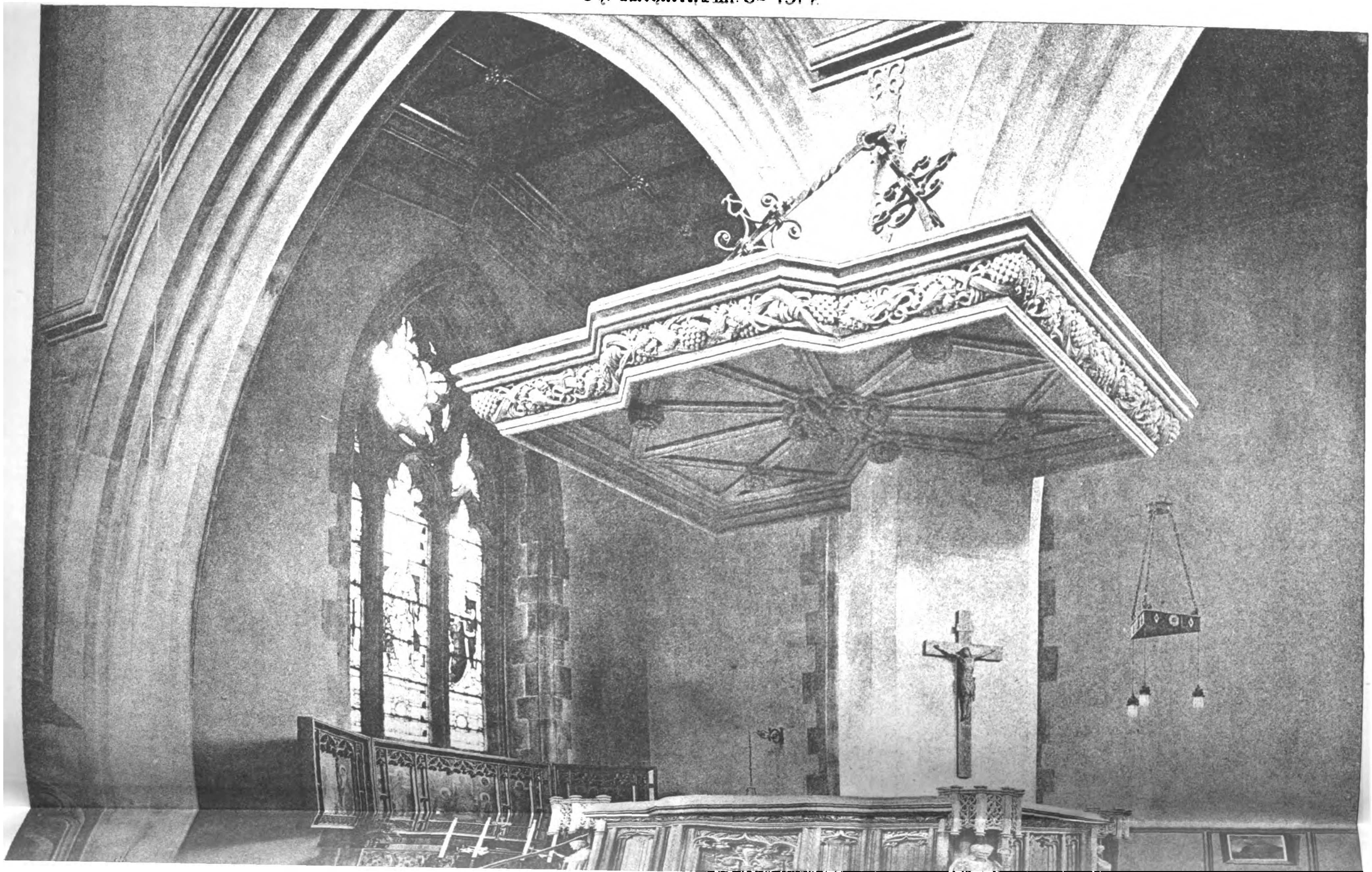

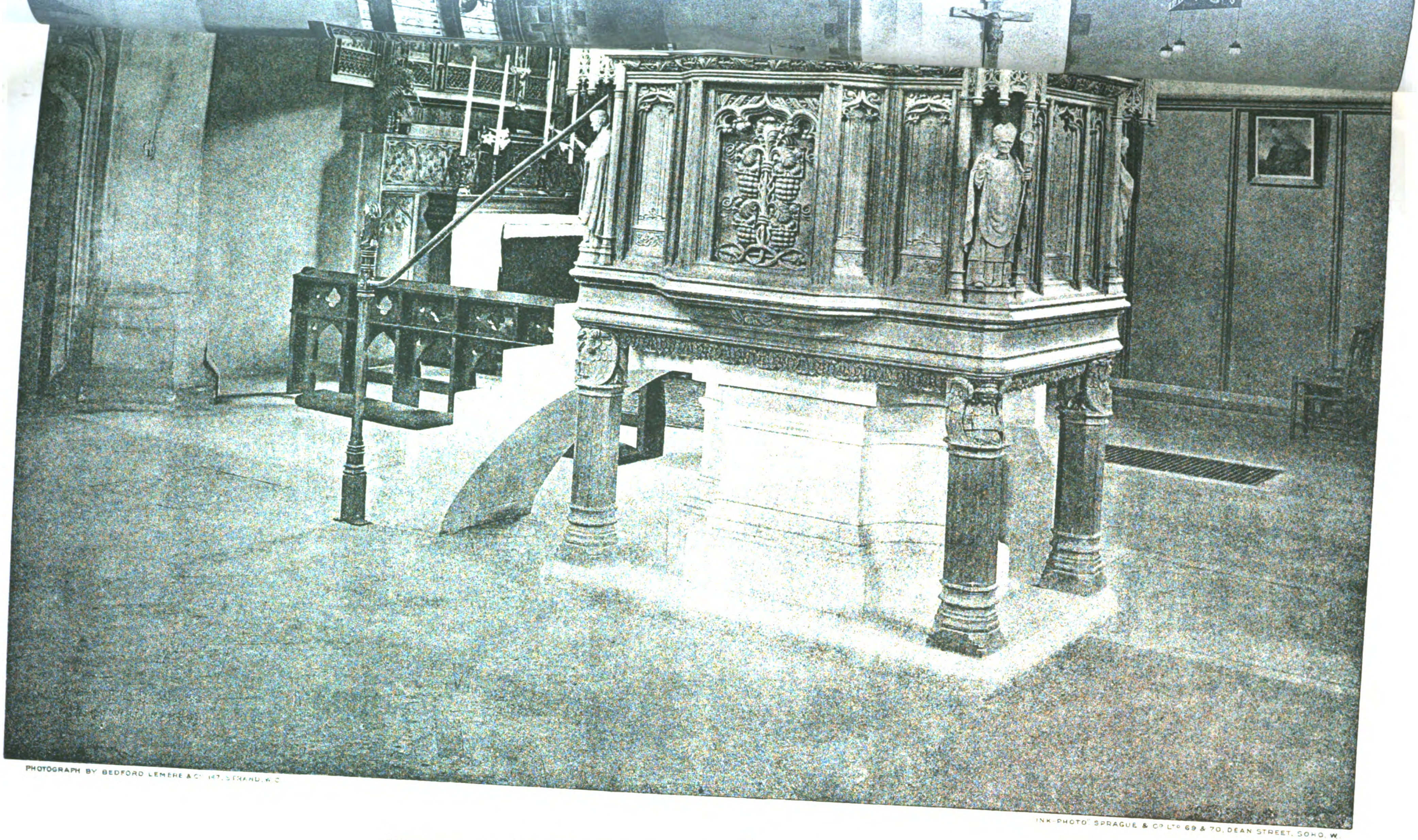

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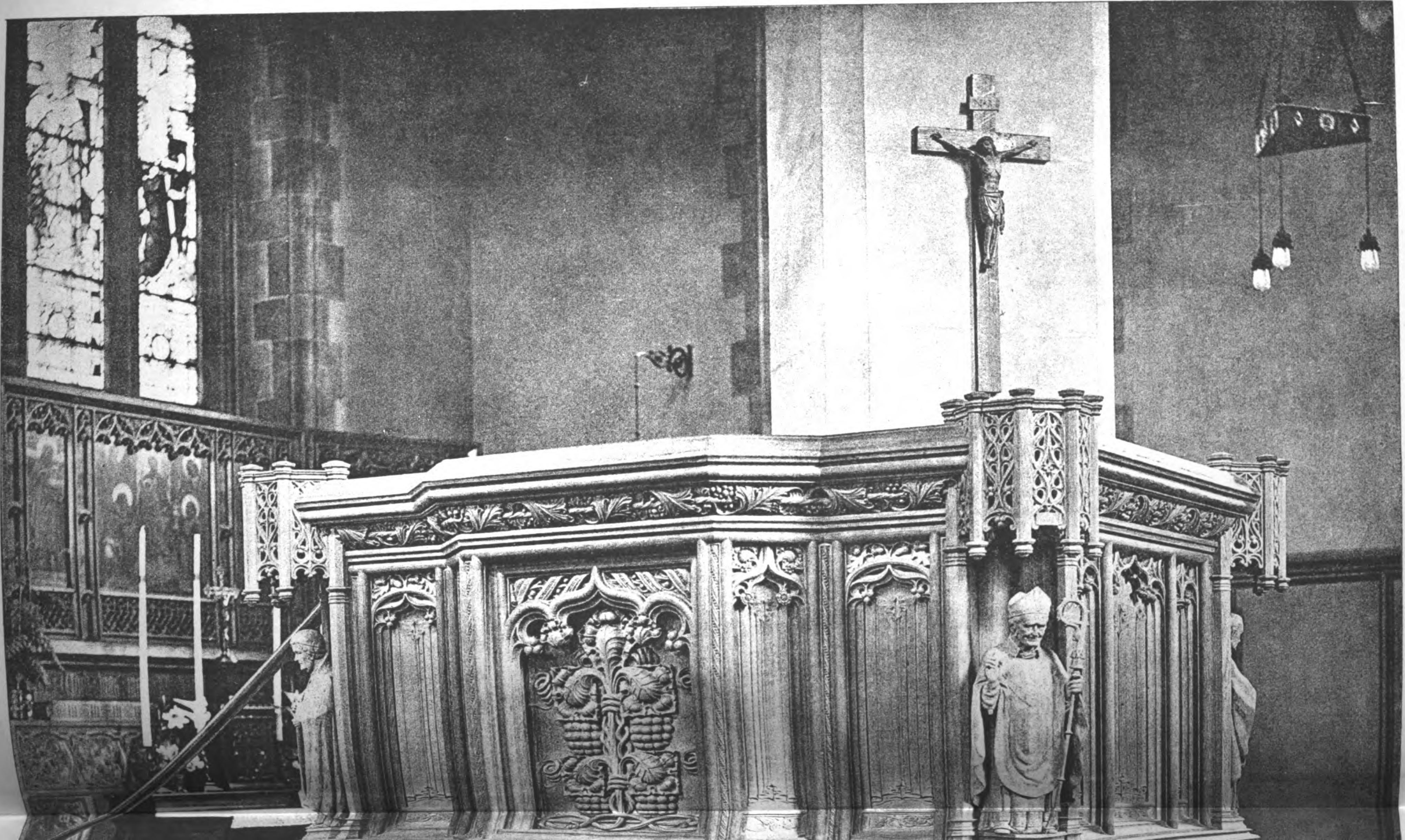

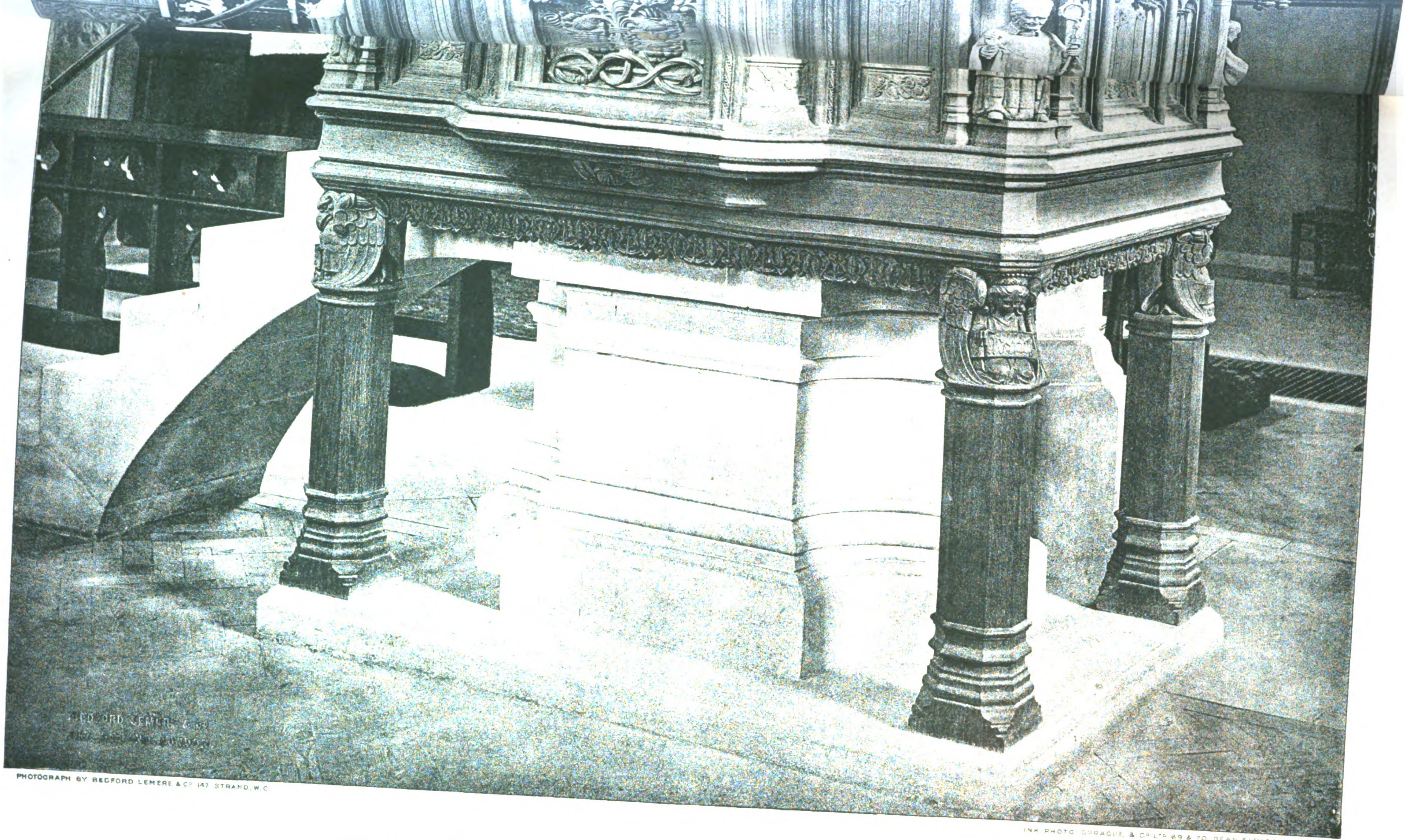

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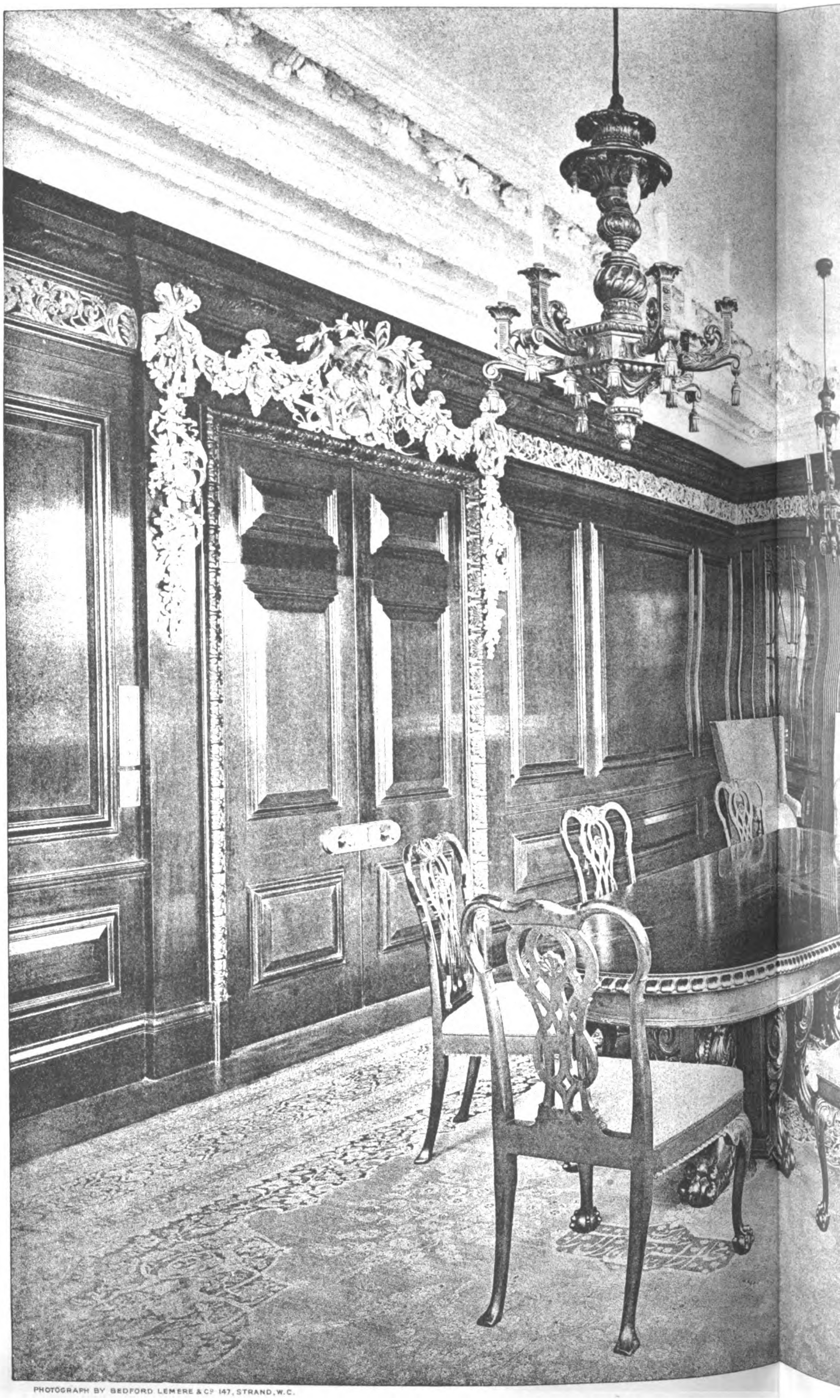

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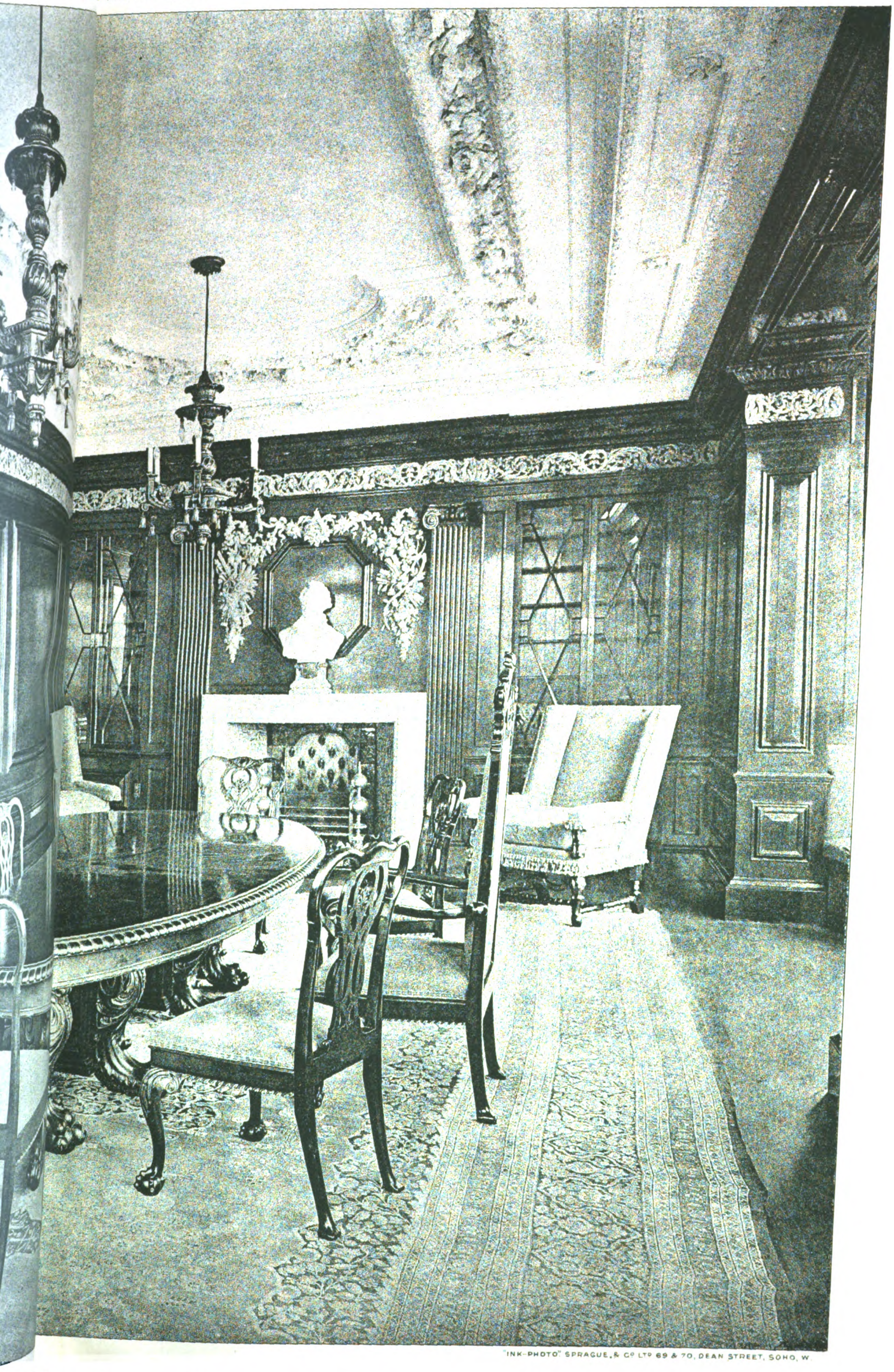

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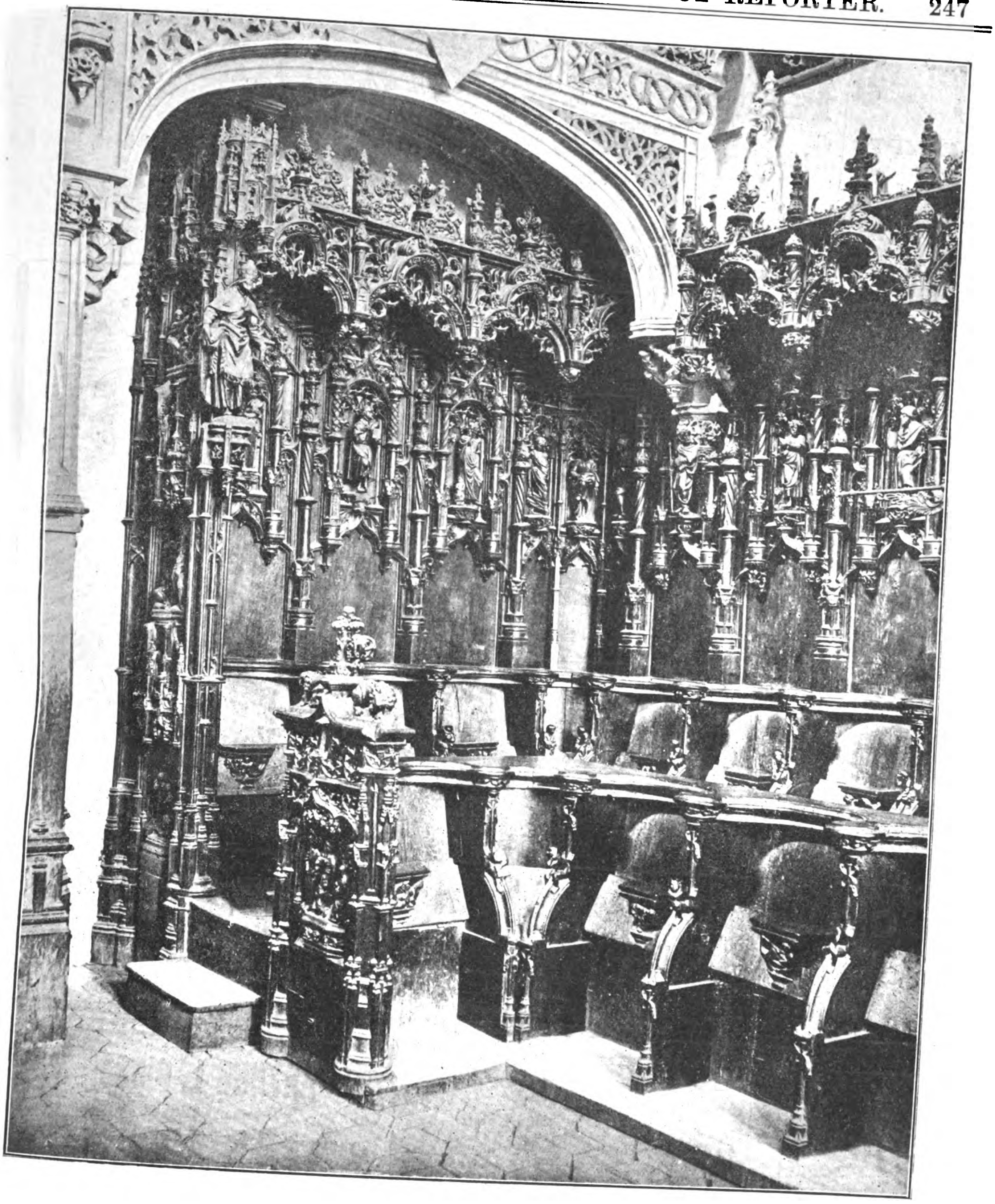

THE CHOIR STALLS AT BROU, FRANCE.

THE CHOIR STALLS AT BROU, FRANCE.

By J. H. KERNER-GREENWOOD.

IT is worth while to break the journey from Paris to Marseilles at the little town of Bourg. The junction is Macon, and it is about an hour's train ride. I should advise anyone interested to view the church at Brou, which is a suburb of Bourg. The illustration shows the wonderful choir stalls and elaborate canopies and a small fragment of the stonework which supports the rood-loft. Those readers of Matthew Arnold's poems will remember how he speaks of the church at Brou, which was built by Margaret of Austria, the wife of Philibert, in fulfilment of a vow made by her mother-in-law, Margaret of Bourbon.

I have for some years now made an annual pilgrimage to France, searching for unique examples of architecture, and I must confess that this church has been a surprise to me. I certainly had heard of it, but I had no conception of its beauty. The principal façade is considered a marvel of elegance, and the portal is richly sculptured. The rood-loft is different to any other rood-loft in its magnificence and elegant proportions, and the splendid tombs of the above-mentioned Prince and Princess excel everything of a like nature.

In the church is some fine ancient stained glass, and in the grounds an oval sundial. The visitor, by placing himself over the initial letter of the current month, may see the hour marked by his own shadow. There is little else of interest at Bourg, which must not be confounded with Bourges.

There is nothing else of interest at Macon, except an old half-timbered house. There is also one of these at Bourg.

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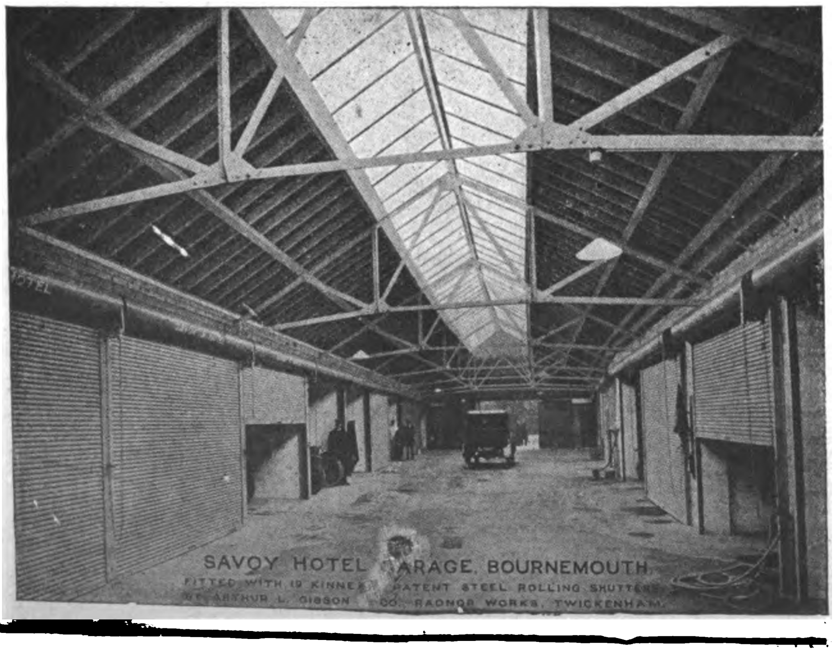
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(*Continued from page 247.*)

work was to be painted once in every four years, and the inside work once in every five years, whilst the outside stucco and stonework was to be recoloured and jointed in the month of August in every succeeding eighth year." But this practice was not adopted with regard to other Crown property until the Crown Lands Act of 1821. One would have thought, if these clauses were founded on experience, that improvements in paints and paint-vehicles on the one hand, and on the other the change in the air contamination which has already been brought about by legislation and scientific development both of heating and lighting, in our towns would have by this time caused some modification of these conditions in leases.

The tarry suspension in the air has also its influence on the sunlight received by towns, 25 per cent. and even 40 per cent. of the total light being excluded from houses and streets by the smoky sloud hanging over. There is, of course, also a loss of artificial light owing to the accumulation of dust and soot on burners and shades. Clemell has found that in factories the loss of light during three weeks' neglect amounted on the average to as much as 40 per cent.; and Mr. Harris calculates from the analysis of the gases in the domestic chimneys of Glasgow that 25.7 tons of tar are sent into the air of that city every day.

From every ton of coal consumed in gasworks, about 10 gallons of tar is collected instead of being distilled into the air in a semi-burnt condition, as constantly occurs in even the best domestic grates.

In order to preserve paintwork, and permit of delicate schemes and shades of internal decoration, it is necessary that the smoke nuisance be eliminated. The greatest sinner at the present time is the domestic coal fire, which, even for no other reason, should be replaced by some modern method of gaseous heating.

It is not at once obvious that electric lighting and electric radiators are responsible for smoke, but it so happens that the power stations are frequently the worst offenders as regards smoke emission, and until these make use of some form of gasified fuel or otherwise ensure complete combustion, gas is the least harmful as far as smoke emission is concerned. Not only is the production of gas economical, but its proper consumption is not attended with emission of smoke; in fact, a considerable portion is probably recremated and burnt completely to carbon dioxide and water. If this view be correct, gas actually serves as a smoke and dust scavenger, burning up continuously and automatically—by means of its self-created draught—dust, smoke, and other organic matter in the polluted town air.

Soot contains a varying but often large quantity of chlorides. These are dissolved out and washed on to the surface by rain or dew or in rooms by condensed moisture. The liquid is consequently a strong solution of brine, which causes local corrosions and pittings and discolorations of nearly all decorative materials, corrosions, and pittings.

THE SULPHUR PROBLEM.

Both oil and coal contain varying amounts of sulphur, ranging usually about 1 per cent., and occasionally up to 3 per cent. by weight.

The action of heat and combustion of these sulphur compounds may give rise to a variety of products, of which the most important are hydrogen sulphide, sulphurous and sulphuric anhydrides. These are all acid, and all more or less deleterious to every kind of paint work, varnish, and internal decoration.

All gasworks are compelled by Acts of Parliament to remove the whole of the sulphuretted hydrogen from the gas.

Not content with this 95 per cent. removal, one of the largest gas companies in London has by a new catalytic nickel contact process succeeded in still further purifying the gas from sulphur, and the time may not be far distant when these quantities will be still further reduced.

Gas is, consequently, the best form of fuel, as far as sulphur contamination is concerned, assuming always that electric power stations do not adopt gaseous fuel or do not recover their sulphur from their oil or coal combustion. When we come to investigate the question, in which form is this sulphur (which apparently we must put up with to a greater or less extent) least harmful to internal decoration, the answer is most undoubtedly sulphuric acid.

Hydrogen sulphide, liberated generally from coal fires, and not from gas or gasworks, has a blackening effect on white lead paints, and on gilding containing metallic copper, tarnishes silver and electro-plate, as well as nickel ware, and is not without effect on paints and varnishes in general.

It is perhaps outside the scope of this lecture to discuss the numerous attempts to overcome an evil of such enormous dimensions. The substitution of driers, containing no lead, and to a certain extent the agitation in favour of white lead substitutes, are two of the issues which have arisen.

Hydrogen sulphide is, however, very unstable, and as it is generally only liberated in presence of soot particles it is nearly all condensed and partially oxidised by them into water and free sulphur.

It will be noticed that the blackening and tarnishing effect is generally local in character, and does not correspond to the effect which would be observed if a uniformly distributed gas was the cause of the phenomena. When through negligence an escape of crude gas takes place, a blackening of paint work in the neighbourhood is at once noticeable, and the Courts have held that damages can be recovered. At Athy two jewellers succeeded recently in recovering damages from the local gas company for tarnishing their goods through negligently allowing impure gas to escape in the neighbourhood.

It is, however, well known that although the sulphur blackening can be removed by oxidising washes (hydrogen peroxide), a soot or tarry surface-staining in most instances remains, thus showing that the sulphuretting is associated with soot, and that the two impurities reach the paintwork together.

It will be found that the disfigurement is practically confined to those places where the carbon particles can impinge or lodge, and usually follows the line of flow of convection currents in a room. Hence it can be largely prevented by filtering the air or by allowing a free way for the egress of those air streams which contain the injurious suspended smuts. Many systems of heating, viz. hot-water radiators, and even the comparatively cold electric incandescent lamps, have sufficient ventilating effect to cause a convergence of dirty air into distinct convection currents which leave their dirty trail or imprint their blot on the light-coloured surfaces passed. When high-temperature lighting is employed, a cremating of some of these particles takes place, and the stronger movement carries the remainder to greater distances, so that local staining and tarnish are rare.

(*To be concluded.*)

BUILDING PROGRESS IN THE PROVINCES AND SUBURBS.

A LIST OF WORKS PROJECTED OR COMMENCED.

(N.B.—Local Authorities, architects, and others are invited to submit full particulars for insertion in this weekly list. Where districts are not entered against names of architects and builders the address is as a rule local.)

ENGLAND.

BUCKINGHAMSHIRE.

Gerrards Cross.—"The Nook," North Park: additions for Mrs. Hope-Smith.

Great Missenden.—C.E. School: girls' department.

Taplow.—"Cliveden": additions and alterations to the laundry, for Mr. W. W. Astor.

Wolverton.—County Secondary School: enlargement.

CAMBRIDGESHIRE.

Cambridge.—Fitzwilliam Museum: proposed extension.

CHESHIRE.

Bollington.—Conservative Club: proposed alterations.

Egremont.—Council school, Church Street (£16,000).

Macclesfield.—Motor Omnibus Garage, King Edward Street, for the British Automobile Traction Company, Ltd.

Northwich.—Council School, Whalley Meadow, for 300 places.

Stockport.—Stepping Hill Hospital; Nurses' Home extensions. Messrs. Peirce & Son, architects, 30 St. Peter's Gate.

Whaley Bridge.—Weaving Sheds: extension for the Goyt Mill Company.

CORNWALL.

St. Austell.—Workhouse: infirmary alterations (£3,800).

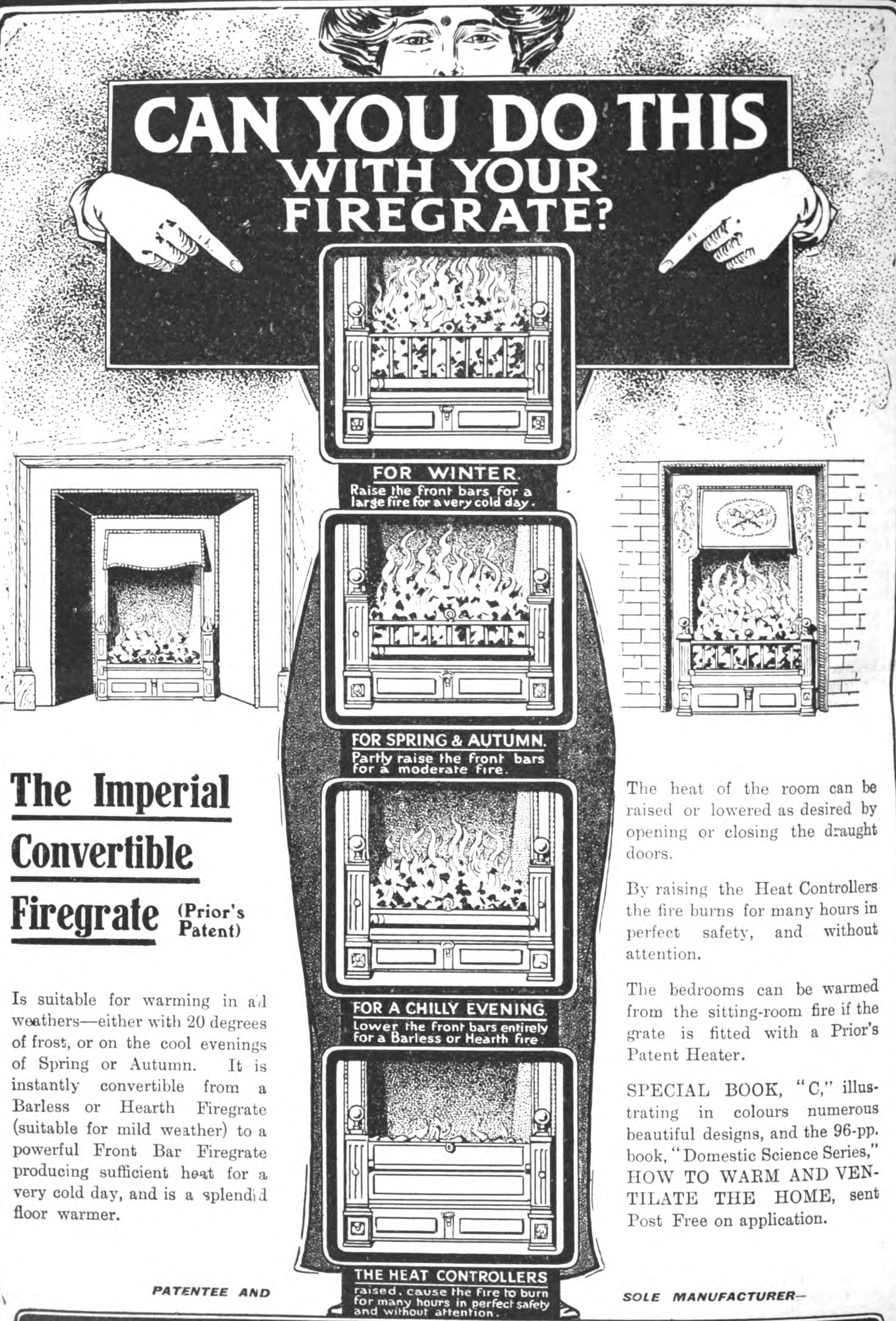
CUMBERLAND.

Silloth.—Four houses, for Carr's Flour Mills, Ltd. Mr. G. Armstrong, architect, 24 Bank Street, Carlisle.

DERBYSHIRE.

Chesterfield.—Proposed St. Augustine Church, Derby Road.

Derby.—Infectious Diseases Hospital: additions to the administrative block. Mr. J. Ward, M.Inst.C.E., Borough surveyor.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ENGLAND.—*continued.*

DERBYSHIRE—DERBY—*continued.*

Midland Railway Station: extension. Messrs. Walkerdine & Co., contractors, Bridge Street.

Mickleover.—Wesleyan Church. Mr. A. E. Lambert, architect, 28 Park Row, Nottingham.

DEVON.

Totnes.—Workhouse: infirmary extension (£2,500). Mr. F. A. Clark, engineer.

DURHAM.

Carville.—"King's Arms" Inn: additions and alterations, for Messrs. J. W. Cameron & Co., Ltd.

Framwellgate Moor.—Stables, for West Auckland Brewery Company, Ltd.

Gateshead.—R.C. School for 600 places.

Seaham Harbour.—P.M. Church, Hall, and Schools, Princess Road (£6,000). Mr. J. W. F. Phillipson, architect, 8 Grainger Street, Newcastle-on-Tyne.

Trimdon Grange.—Picture Hall, for the Grange Picturedrome Company.

Ushaw Moor.—Fourteen houses, for Messrs. T. & R. Walton.

ESSEX.

Benfleet, South.—Council School for 250 places.

Chelmsford.—Thirteen houses, Rectory Lane, for Mr. W. T. Miller.

Seventeen houses, Henry Road, for Messrs. Grimsey Bros.

House, Hill Road, for Mr. W. Mawhood.

Pair of houses, Marconi Road, for Miss Cramphorn.

Chipping Ongar.—Council School: extension and alteration (£3,120).

Hornchurch.—Proposed Public Offices.

Leyton.—Boys' Secondary School, Barclay Road.

Romford.—Boys' Secondary School.

Walthamstow.—Baptist Tabernacle.

West Thurrock.—Council School for 200 places.

GLOUCESTERSHIRE.

Cirencester.—Infectious Diseases Hospital: extension.

Fire Station.

HAMPSHIRE.

Christchurch.—Garage, Purewell: addition, for Mr. J. Campbell.

House, Queen's Avenue, for Mr. E. R. Saunders.

Southampton.—Baptist Church, Shirley. Messrs. Spalding & Myers, AA.R.I.B.A., architects, 36 and 37 King Street, Cheapside, London.

Public Library, Portswood (£2,500). Borough engineer.

ISLE OF WIGHT.

Ryde.—County Hospital: reconstruction (first portion, £4,000).

KENT.

Broadstairs.—Council School (£5,800).

Greenwich.—Tuberculosis Infirmary, Maze Hill (£1,500).

Hadlow.—Council School: additions and improvements (£2,000).

Herne Bay.—Council School: special subjects centre, &c. (£1,300).

Lenham.—County Sanatorium. Mr. E. T. Hall, F.R.I.B.A., architect, 54 Bedford Square, London.

Maidstone.—House, Postley Road, for Mr. W. Jenner.

Plaxtol.—Council School: additions.

Tenterden.—Council School.

Whitstable-on-Sea.—Handicraft Centre, Oxford Street (£550).

LANCASHIRE.

Barrow-in-Furness.—Branch Bank, Promenade, Walney, for the Manchester and Liverpool District Banking Company, Ltd.

Pair of houses, Tummer Hill, for Mr. J. S. Crewdson.

Three pairs of houses, Roose Road, for Mr. S. Barnett.

Seven houses, Salthouse Road. Mr. R. T. Dockeray, builder, Manchester Street.

One hundred and nineteen houses in Dundee, Dunoon, and Farm Streets, for the Cavendish Park Estate Company.

Nineteen houses, Worcester Street, for Mr. J. Ross.

Coppull.—Council School, Park Road (£6,350).

Manchester.—Synagogue, Ramsgate Street, Cheetham, for the Jewish Mission.

Pilling.—Proposed Wesleyan School.

Ulverston.—Proposed Coronation Public Hall (£3,000).

LEICESTERSHIRE.

Melton Mowbray.—Refuse Destructor (£2,150). Messrs. Dawson & Manfield (of Manchester), engineers.

LINCOLNSHIRE.

Cleethorpes.—Cinema Hall, High Street, for Mr. C. W. Dixon.

Public Hall.

Coates, Little.—Parish Church: extension, &c.

NORTHAMPTONSHIRE.

Northampton.—Factory. Messrs. Brown & Mayor, architects, Market Square. Messrs. H. Martin, Ltd., contractors, Thenford Street.

Wellingborough.—Boot and Shoe Technical Institute, Midland Road.

NORTHUMBERLAND.

Berwick-on-Tweed.—Secondary School (£35,000).

Newcastle-on-Tyne.—Royal Victoria School for the Blind, Benwell: technical school (£4,000).

NOTTINGHAMSHIRE.

Mansfield.—Picture Palace, Skerry Hill. Mr. F. Ball, architect, 23 King Street, Nottingham.

Newark-on-Trent.—Town Hall: extension.

Warsop.—Two houses, Carr Lane, for Mr. S. Hall.

Six houses, Carter Lane, for the Warsop Vale Co-operative Society.

House, High Street, for Dr. Horan.

House and shop, Sherwood Street, for Mr. W. Tattersall.

STAFFORDSHIRE.

Norton.—County Mining Institute and Handicraft Centre.

SURREY.

Clandon, West.—Church: spire.

Hindhead.—Public House, Beacon Hill, for the Surrey Public House Trust Company, Ltd. Mr. A. G. Harding, architect.

SUSSEX.

Arundel.—Housing scheme, Torton Hill. Mr. F. Wheeler, F.R.I.B.A., architect, 7 Stone Buildings, Lincoln's Inn, London (and at Horsham). Messrs. G. Greenwood & Sons, contractors.

Bexhill-on-Sea.—Drill Hall, for the Artillery.

S. A. Hall, Station Road.

WARWICKSHIRE.

Bedworth.—Two houses, Smorrell Lane, for Mr. Allen.

House, Leicester Road, for Mr. J. Knight.

Two houses, Earl Street, for Mr. Burrows Smith.

Thirty houses, for Foleshill D.C. Mr. Newey, architect.

Coventry.—Congregational Church: new buildings, Stoke.

Four houses, Hollis Road, for Messrs. Jervis Bros.

Foleshill.—Six houses, Courthouse Green, for Mr. E. Pearson, jun.

Thirty houses, for D.C. Mr. Newey, architect.

Keresley.—House, the Jetty, for Mr. Walton.

Polesworth.—House, Potter's Lane, for Mr. B. Clarke.

Rugby.—House, Poplar Grove, for Mr. W. Taplin.

House, Lawford Road, for Mr. W. E. Gray.

Two houses, Park Road, for Mr. C. Morehead.

House, Alfred Street, for Mr. H. Miller.

House, Frederick Street, for Mr. C. Louch.

WILTSHIRE.

Potterne.—Three pairs of workmen's cottages, for Devizes R.D.C.

WORCESTERSHIRE.

Selly Oak.—Training College, Selly Park: enlargement for the Sisters of St. Paul.

Worcester.—Boot Factory, College Street. Messrs. Brown & Mayor, architects, Market Square, Northampton.

YORKSHIRE.

Huddersfield.—House and shop, Victoria Road, Lockwood. Messrs. J. B. Abbey & Son, architects, District Bank Chambers, Market Street.

Scarborough.—Proposed Parish Institute, St. Saviour's.

Sedbergh.—Wesleyan Chapel (£2,000).

Sharlston.—Council School.

Sheffield.—Baptist Church, Taplin Road (£3,000).

Sowerby Bridge.—Three houses, near Hill Crest, Burnley Road. Mr. S. Wilkinson, architect, Town Hall Street.

Thurcroft.—Council School for 1,000 places (£13,000).

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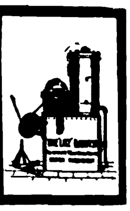

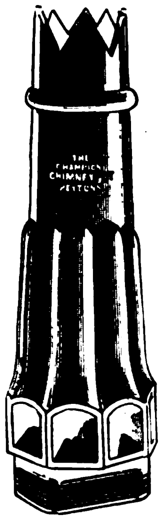

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WALES.

Cardiff.—Office Buildings, Mount Stuart Square Messrs. Teather & Wilson, FF.R.I.B.A., architects, Andrew's Buildings, Queen Street.

Carno (Mont.).—Proposed Village Hall.

Hendrefoilan.—Proposed Hospital for fifty beds (£12,000). Mr. G. Moxham, F.R.I.B.A., architect, 39 Castle Street, Swansea.

Llandudno.—Picture Theatre. Mr. A. Hewitt, architect, Town Hall Chambers.

Penygraig.—St. Barnabas' Church (£2,500). Messrs. A. O. Evans, Williams & Evans, architects, Court Chambers, Pontypridd. Messrs. Knox & Wells, contractors, Bangor Street, Cardiff.

Treorchy.—Workmen's Hall and Institute. Mr. J. Rees, architect, Hillside Cottage, Pentre.

Ystradgynlais.—Eighteen houses, for the West Garden Cities' Association.

SCOTLAND.

Coatbridge.—Miners' Rescue and Aid Station (£4,000), corner of Ellis and Whittington Streets, for the Lanarkshire Coalowners' Association.

Edinburgh.—School, Macleod Street: Housewifery building, for the School Board.

Two villas, Comely Bank Road, for Messrs. Leslie & Milne.

Glasgow.—City Chambers: extension, for the Corporation.

Tenements of houses, Edgehill Road and Woodcroft Avenue, Broomhill. Mr. J. M'Taggart, builder, 66 Bath Street.

IRELAND.

Dungannon.—Tyrone County Sanatorium (£20,000).

Glin.—Labourers' cottages, for the D.C.

Lurgan.—Labourers' cottages. Mr. J. W. Walby, architect.

Monaghan.—Labourers' cottages (£4,200).

PATENT SPECIFICATIONS PUBLISHED, FEBRUARY 26, 1914.

Selected and abridged by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

No. 25,029. Nov. 1, 1912.—H. L. Galloway, "Southcroft," Kilmacolm, Renfrew, and W. J. Frame, 13 Royal Terrace, Queen's Drive, Crosshill, Glasgow. Apparatus adapted for impregnating wood.

2,841. Feb. 4, 1913.—W. A. McGregor, 17 North Dingle, Kirkdale, Liverpool. Locking stays for doors.

2,956. Feb. 5, 1913.—W. R. Pilkington, Dowry House, Bamber Bridge, near Preston. Sundials.

3,008. Feb. 5, 1913.—Ingle & Burnett, Ltd., and J. M. Burnett, all of Essex Wharf, Hackney Wick. Material for removing paint or varnish from painted or varnished surfaces.

3,216. Feb. 7, 1913.—F. L. Keppler, architect, 204 Friedrichstr, Berlin. Glazed ferro-concrete structures such as floors and partitions.

4,897. Feb. 26, 1913.—T. B. Cooper and C. E. Holloway, Sun Buildings, Clare Street, Bristol. Reinforcing of concrete structures.

5,976. March 11, 1913.—W. G. Forder, The Cottage, Wood Lane, Shepherd's Bush, W., and D. O. Scott, 14 Arminger Road, Shepherd's Bush, W. Manufacture of compositions for pavements, &c.

6,536. March 17, 1913.—William Roberts and T. W. J. Cutler, 24 Emily Street, West Bromwich, Staffs. Fixing device for rulers, set squares, and the like.

7,300. March 27, 1913.—Joseph Shilcock, 16 Churchill Road, Willesden Green, N.W., and W. A. Weightman, 1 Guildhall Chambers, Basinghall Street, E.C. Means for fixing rain-water and other pipes to walls.

11,753. May 20, 1913.—The Beaver Co., Beaver Road, Buffalo, N.Y. Composite wood-pulp sheets.

11,923. May 22, 1913.—R. R. Carson, 6 Ardgowan Terrace, Glasgow. Fastenings for doors, windows, and the like.

12,592. May 30, 1913.—T. L. Watson, 106 Bath Street, Glasgow. Building with concrete and the like.

13,505. June 11, 1913.—H. M. Clements, "Cecilhurst," Walderslade, near Chatham. Sliding-sash windows.

13,526. June 11, 1913.—F. A. Roussel, 1 Rue Cozlin, Paris. Painters' knives, spatulas, or other similar tools with removable blade.

14,107. June 18, 1913. Dated under International Convention, June 18, 1912.—Professor Fridolin Zwicky, 8 Seestrs, Winterthur, Switzerland, and Walter Leeman, Frohburgstr 17, Zurich. Levelling apparatus for surveying purposes.

21,006. Sept. 17, 1913. Dated under International Convention, Oct. 10, 1912.—Louis Deschamps, Petit-Quevilly, near Rouen (Seine), and Rene Bablon, 14 Rue de Bagnolet, Les Lilas (Seine). Unions or connectors for pipes and tubes.

21,464. Sept. 23, 1913. Dated under International Convention, Sept. 23, 1912.—Carl Spiegel, 5 Alte Jakobstr, Berlin. Device for closing doors and the like.

21,951. Sept. 29, 1913.—R. De C. Weakley, 1,500 Central National Bank Building, St. Louis, Missouri, U.S.A., architect. Key bases or lathing substitutes for plaster and cement walls and ceilings.

Any of the above specifications may be obtained from J. D. Roots & Co.

Correspondence

[The Editor will not be responsible for the opinions expressed by Correspondents.]

The Preservation of Wood.

Sir,—I have read with considerable interest the report of Mr. Wallis-Tayler's lecture on the preservation of wood, which I was unfortunately unable to attend, otherwise I had hoped to join in the discussion which took place afterwards.

My object in writing now is not to criticise the many processes that Mr. Wallis-Tayler mentioned in the course of his lecture, or for the purposes any particular one might with the greatest advantage be employed, but rather to emphasise the fact that the science of applied chemistry has not stood still during the past seventy-five years, not even in the manufacture and application of wood preservatives.

I am speaking particularly in regard to my company's process "Burnettizing." It is quite true, as stated by Mr. Wallis-Tayler, that the founder of my firm, Sir William Burnett, invented and patented in 1838 a zinc chloride process for preserving wood by soakage, and this process was named after him—Burnett-izing—to distinguish it from other processes of that period.

Since then great strides have been made in chemistry, and it was discovered by us that the chemical solution originally employed and the method of applying it—i.e. soakage—did not go far enough to offer more than temporary resistance to the ills to which timber is liable, by reason, firstly, of the original preservative having a tendency to leach and wash out, and secondly, owing to frequent inadequate impregnation due to insufficient time being allowed for soakage and other reasons.

The latter difficulty was easily overcome by impregnating the wood to be preserved in a steel cylinder under pressure, but the former difficulty was far more serious. However, once the great initial step had been taken, it was not considered an insurmountable matter to carry the process forward by means of research, and innumerable tests were made until the vital shortcoming was rectified.

The difficulty to overcome was not only to make a powerful germicide that was uninflammable and odourless, but to make a chemical compound in such proportions which, besides having those properties, would, when employed in solution and impregnated into wood, act on the albuminous and nitrogenous matter and form an insoluble chemical compound something analogous to iron-mould in the wood, and the result of our research was "Burnettizine," which is the preservative impregnated into timber when "Burnettizing" is specified. In fact, it is usual now for architects and engineers to specify: "Timber to be preserved under pressure with Burnettizine, 10 lb. to the cubic foot," or more, according to the kind of timber required to be preserved.

Like the improvements made in other processes, it is merely a case of new methods taking the place of old ones; otherwise, progress.—Yours truly,

Lionel Castle,
Managing Director.
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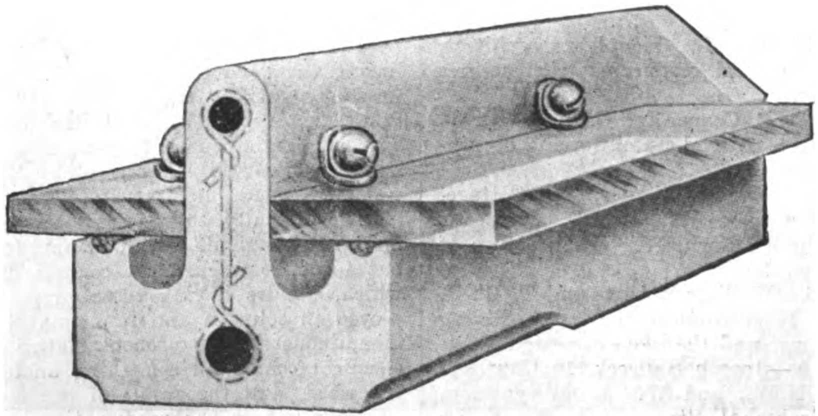

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FORTHCOMING EVENTS.

Friday, March 13.

Leicester and Leicestershire Society of Architects : Paper, entitled "Leonardo da Vinci," by Mr. E. A. C. McCurdy, M.A., at 8 P.M.

Saturday, March 14.

Architectural Association : Fifth Spring Visit to the Improvements to the Duke of Cornwall Estate, Kennington (architects : Professor S. D. Adshead and Mr. S. C. Ramsey, A.R.I.B.A.), at 2.30 P.M.

Monday, March 16.

Architectural Association : Paper, entitled "The Wonder of Work," by Mr. Joseph Pennell, at 8 P.M.

Exhibition of Cinematograph and Theatrical Supplies and Accessories opens at 179 Wardour Street, W. (The British Westinghouse Electric and Manufacturing Co., Ltd.), March 16-23.

Tuesday, March 17.

Illuminating Engineering Society : Paper, entitled "A Comparison between Illumination Estimates and Performance in Practice," by Mr. W. C. Clinton, at 8 P.M.

Nottingham and Derby Architectural Society : Exhibition of Designs and Presentation of Prizes at 8 P.M.

Wednesday, March 18.

British Academy : Paper, entitled "Recent Discoveries in Roman Britain," by Professor F. J. Haverfield, M.A., LL.D., at 5 P.M.

Thursday, March 19.

Leeds and Yorkshire Architectural Society : Paper, entitled "Modern Hospitals," by Mr. W. Milburn, A.R.I.B.A., at 6.30 P.M.

PUBLIC ABATTOIRS.

THE Model Abattoir Society exists with the following objects: to induce the nation to insist on the erection of public abattoirs, so that the private slaughter-house system generally may be abolished; to introduce into all slaughtering places efficient inspection, improved sanitation, and the use of humane arrangements and appliances. The present position of the movement in favour of public abattoirs is well summarised in a report on certain queries addressed to and replies received from the authorities of existing abattoirs in the United Kingdom by Mr. R. Stephen Ayling, F.R.I.B.A., M.R.S.I., the consulting architect to the Model Abattoir Society, with an introduction by Sir James Crichton Browne, M.D., LL.D., D.Sc., F.R.S.

The arguments in favour of the universal adoption of public abattoirs instead of private slaughter houses are weighty and convincing. The report, to which we have referred, shows that contrary to the assertions of those interested in the meat trade the establishment of public abattoirs tends to decrease the price of home-grown meat and does not increase the sale of foreign meat.

Another point on which the Society joins issue with the statement of meat traders is as regards the cost of the provision of public abattoirs. It has been asserted in the *Meat Trades Journal* that high-class municipal abattoirs cost from 10*s*. to 15*s*. per unit of the population. Mr. Ayling's report grants that this computation is probably correct when calculated on the basis of some of the most expensive Continental abattoirs, in which the whole of the meat consumed in the district is prepared in the public abattoirs and foreign meat practically unknown.

On the side of the meat traders assertions are quoted also from a pamphlet written by Mr. Alderman Redman, who instances eleven Continental abattoirs in towns with a total population of 2,738,000 persons, and costing together about £1,614,500, or 11*s*. 9½*d*. per unit of the population. Mr. Redman further mentions that the average cost per unit of the population in fifty-one other Continental abattoirs has been 15*s*. per head.

As against these assertions on behalf of the meat trade Mr. Ayling quotes the cost of the latest and most perfectly-equipped modern British abattoir—that recently opened at Edinburgh with a population of 316,800 persons. The total cost of the abattoir proper works out per unit of the population at 6*s*. 9*d*. Another recent example quoted is that of the very complete abattoir at South Shields, opened a few years ago. The population of this town is about 110,000, and the buildings with the land cost £20,052, namely, 3*s*. 8*d*. per unit of the population. The average cost of abattoirs now existing in sixty-four towns or cities, from which replies were received and which represent a total population of over 4½ million persons, works out at about 3*s*. 1*d*. per unit of the population.

We do not, however, find in Mr. Ayling's report any definite figures as to the amount of meat which should be credited to the imported or foreign supply. Obviously there is no value in an assertion that a public abattoir costs on an average about 3*s*. 1*d*. per unit of the population if the population obtain a large or indefinite amount of the meat consumed from animals slaughtered outside the town, whether imported as chilled or frozen, or killed immediately upon landing.

The cost, however, of public abattoirs, whether in terms of the price of meat or in terms of the cost of those establishments per unit of the population, is not the sole factor of importance. It appears that the balance between annual receipts from sixty-seven abattoirs and the total annual expenditure, including sinking fund, shows an annual loss on sixty-seven abattoirs of £1,649, twenty-three of the sixty-seven being self-supporting, the remaining forty-four dividing amongst them the loss of £1,649. As these towns contain a population of over four million persons the loss represents the almost infinitesimal sum of one-tenth of a penny per unit of the population.

But even if the expenditure in public slaughter houses exceeded the receipts, they would still be a profitable investment for any municipality by contributing to the good health of the community, and so diminishing the public burdens. Diseased meat is a cause of disease in human beings and the sale of diseased meat still goes on, and must remain a matter of comparative facility as long as private slaughter houses are tolerated. Butchers are honourable men, but they are not like the associates of Brutus, "all honourable men." There are black sheep or grey sheep amongst them, as there are in every calling. The seizures that take place from time to time in butchers' shops attest that, but these seizures very imperfectly indicate the amount of diseased meat that is placed on the market. It is meat in a state of more or less advanced putrefaction that is seized, because putrefaction is easily recognised, and much diseased meat from private slaughter houses slips through the shops into the domestic larder undetected because its blemishes are hidden, even from the skilled eye, by the trimming and preparation it has undergone. It is only by inspection of the animal before slaughtering, and at the time of slaughtering, and of the carcase immediately after slaughtering, that a trustworthy guarantee as to the soundness of meat can be given, and that inspection can only be adequately carried out in a public slaughter house. The large number of private slaughter houses in large towns where they exist, their scattered situation, the many different times at which slaughtering takes place in them, make it impossible for the medical officer of health or sanitary inspector to supervise them efficiently. The public is insufficiently protected against unwholesome meat when private slaughter houses exist. A good deal of subtle sickness emanates from them, and a public that values its health will peremptorily demand their abolition and the substitution for them of public slaughter houses, where thorough inspection by independent and competent public officials can be constantly maintained, and followed by prompt condemnation where need be. The confidence thus created in our meat supplies must be ultimately to the advantage of self-respecting butchers.

But, apart altogether from pecuniary consideration, motives of humanity should lead everywhere to the provision of public slaughter houses. A movement is on foot for the prevention of cruelty to animals taking part in public entertainments during their training or performances—a very laudable movement—but the suffering against which it is directed is infinitesimal when compared with the preventible suffering endured every day in our slaughter houses throughout the land. A certain amount of suffering is inseparable from the sacrifice of animal life for the provision of human food, but that may be enormously aggravated on the one hand, or minimised on the other, by the way in which the sacrifice is carried out. There can be no doubt that in private slaughter houses, owing to thoughtlessness, callous indifference, or their defective construction, there is a vast amount of suffering which cannot occur in a well-appointed and supervised public slaughter house. In a well-designed public slaughter house the animals of different classes slaughtered are screened at every stage from that sight of blood which sometimes induces terror; they do not while waiting their turn witness the tragic fate of their fellows, and they are protected against the accidents that cause unnecessary pain and from the clumsiness or brutality of their attendants. The preventible suffering still inflicted in private slaughter houses is a great wrong to the animal creation, and the public that concerns itself with comparatively trivial cases of the infliction of pain on animals would do well to concentrate its attention on this weighty matter.

The unanimous opinion of the experts consulted by Mr. Ayling is that public abattoirs have the effect of materially diminishing animal suffering at the time of slaughter. In this connection it is interesting to note that humane methods of killing are now being extensively adopted. The last word on this subject has not yet been spoken, and the Model Abattoir Society is giving it careful consideration.

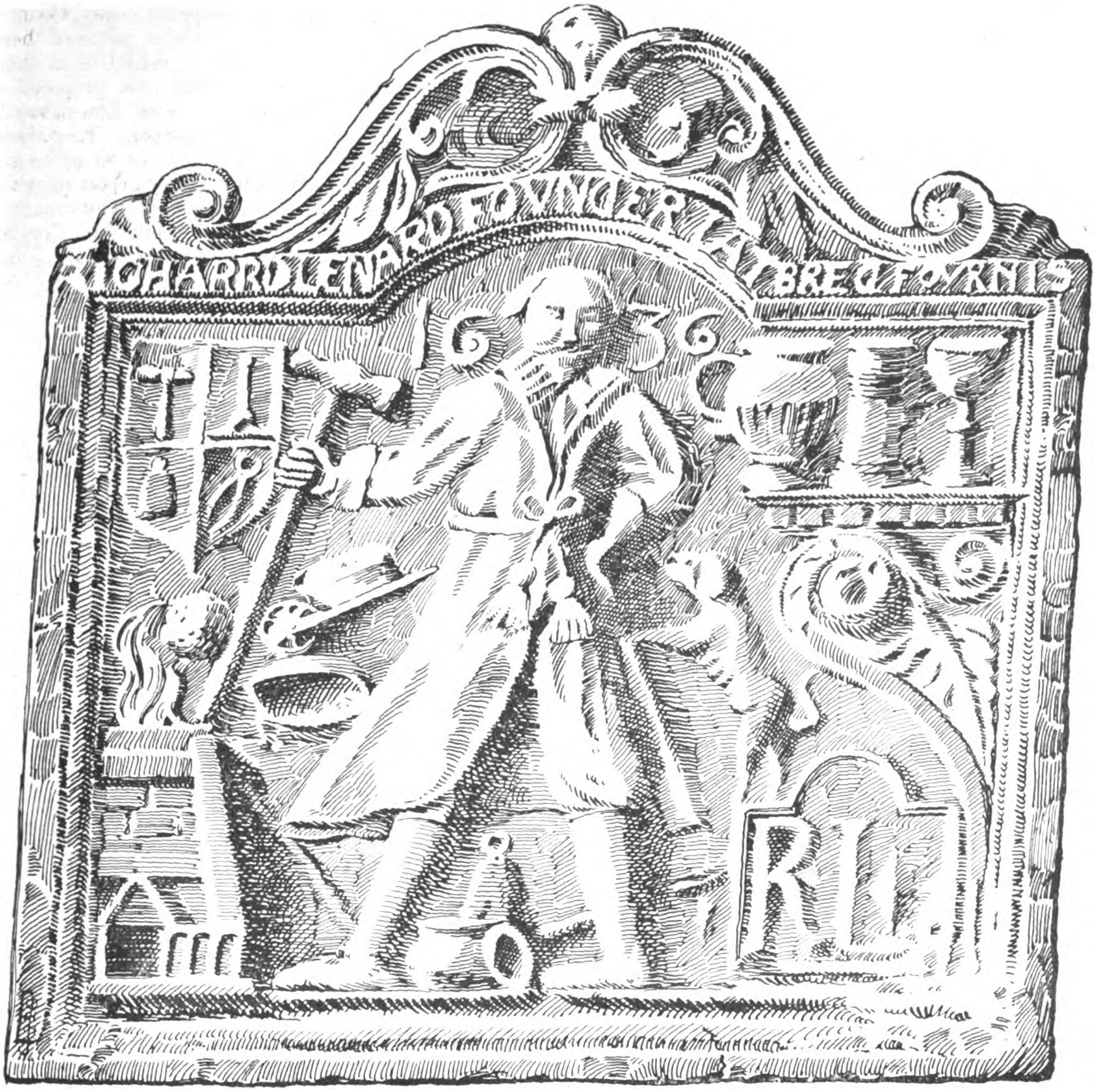
NOTES AND COMMENTS.

THE scheme prepared by the London County Council for the development of about 118 acres of the remainder of the southern portion of the White Hart Lane estate at Tottenham and Wood Green is an instructive commentary on the obstructiveness of local by-laws to the improved principles of housing connoted by garden-city or garden-suburb planning. The estate is situated in the urban districts of Tottenham and Wood Green, the by-laws of these two adjacent authorities differing in some respects from each other, which in itself is sufficiently condemnatory, as difficulties must obviously arise in the development, on improved principles, of an estate part of which is subject to one set of by-laws and part to another of different effect. The Housing of the Working Classes Committee of the London County Council express the view that the requirements of some of these by-laws are in their opinion unduly restrictive in their application to an estate such as that now proposed to be laid out, the effect being to increase unnecessarily the cost of the roads and the building work. They therefore propose modifications of the by-laws so as to give effect to certain special provisions, the purport of which may briefly be indicated as follows: (i.) The minimum width of carriage roads to be 40 feet; (ii.) Concrete for foundations to be in proportion of one part cement to eight of gravel, if Portland cement is used; (iii.) Portland cement mortar to consist of not less than one part cement to four of sand, &c.; (iv.) External and party walls of domestic buildings up to 30 feet long and not more than 25 feet high, to be 9 inches thick thoughout, irrespective of the number of storeys. Such walls, if more than 30 feet long and not exceeding 25 feet high, to be 13½ inches thick for height of lowest storey, and 9 inches thick above lowest storey, irrespective of the number of storeys; (v.) Walls of domestic buildings not more than 30 feet in height not to be parapetted where they adjoin other buildings; (vi.) Party walls of domestic buildings not more than 30 feet in height not to be required to be carried above the underside of the slates or other roof covering; (vii.) Window and door frames not to be required to be set back from the face of any external wall; (viii.) Height of one window in each habitable room to be not less than 7 feet above the floor; (ix.) Glass area of windows in habitable rooms in the roof to be not less than one-twelfth of the floor area; (x.) Dwelling and sleeping rooms to be not less than 8 feet 6 inches high wholly or partly in the roof; (xi.) Dwelling and sleeping rooms wholly or partly in the roof to be not less in any part than 5 feet high, and to the extent of half of the floor space to be not less than 8 feet 6 inches high; (xii.) The requirements as to open space at rear of domestic buildings to be uniform throughout the garden suburb, such requirements to be the provisions of No. 64 of the Tottenham by-laws; (xiii.) Working-class dwellings to be drained in combination where desired; (xiv.) Division walls between tenements having a common entrance to be not less than 4½ inches thick, and not to be required to be carried up above the ceiling of any such tenement; (xv.) Tenements having a common entrance to be treated, for purposes of drainage, as one building.

The character of the attendance at the annual general meeting of the members of the London Society at the Mansion House last week is proof of the position the Society has attained as one of the factors making for the betterment of the Metropolis. Presided over by the Lord Mayor the meeting included among those present Viscount Hambleden, Viscount Peel, the Archdeacon of London, Sir Melvill Beachcroft, Sir George Birdwood, Sir Aston Webb, Mr. Harold Cox, and Mr. H. H. Statham.

Reference was made by the Archdeacon of London to the church of St. Vedast, in Foster Lane, as to which he said that it could now be seen since the Post Office buildings were pulled down. When the new bridge was built it would probably be said that a new roadway to Liverpool Street would be required, and unless a watchful eye were kept on the scheme they would find that that roadway would be put right through where St. Vedast now stood. The London Society might do a great deal to preserve that wonderful bit of beauty.

The progress of the Society was a principal part of the theme of its Chairman, Lord Hambleden, who moved the adoption of the second annual report, which showed a steady increase in the numbers of the subscribing members, and dealt with various matters brought before the public by the Society. The balance-sheet showed an excess of income over expenditure of £548. The Society, though young, had fully justified its existence.


CHARRD LENARD FOVNDER AT BREDE FORNIS
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ANCIENT DOMESTIC IRONWORK.—FIG. 1.

It was a matter of great satisfaction to them that their policy had been recognised, not only by private notice, but by the Government and by local governing bodies whose responsibility for the beautifying of the Metropolis was so great. He called particular attention to their action over the Mall approach, to the question of the new main roads out of London, and to that of the Regent's Quadrant, in which he had been especially interested. Those who displayed their wares in shops wanted to have as large window space as possible, but architects did not want to design buildings which appeared to be supported only by large sheets of plate glass.

In seconding the motion Mr. Harold Cox directed attention rather to the future, and urged that open spaces were more and more necessary. The efforts of the London Society were bound to be hampered by the very rapid growth of population, which could only be accommodated in high buildings, and high buildings were not easy to make beautiful. He complained of the great centralisation of administration in London. It was because of this centralisation that they could not make their improvements without excessive expenditure. He urged that the south side of the Thames should be developed, so that it would become incorporated with the other parts, instead of forming apparently a separate entity.

COMPETITION NEWS.

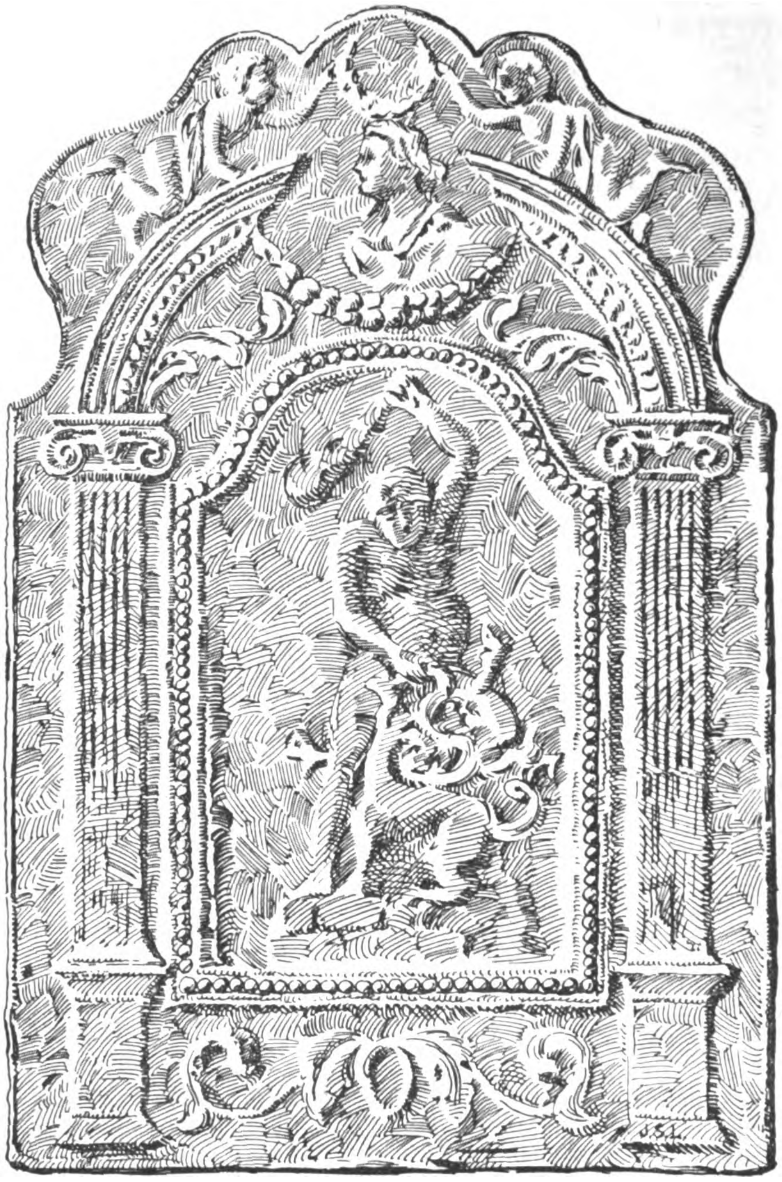
CONWAY.—The Board of Guardians have decided to offer in public competition prizes for the best designs for proposed cottage homes for children on the land recently purchased at Llandudno Junction.

DOUGLAS.—The Higher Education Board of the Eastern District of the Isle of Man agreed on Tuesday to invite selected architects to submit designs for a secondary school, accommodating 400 scholars, proposed to be erected at Douglas. The cost is estimated at £21,000. Mr. E. R. Robson, of London, will act as assessor.

EAST PRESTON.—The Southstrand Sports Club (newly formed) invite plans for a clubhouse to be erected on the Southstrand Estate, East Preston, near Worthing. The successful competitor will be instructed to carry out the work, and will receive, in addition to the usual fees, a bonus on completion of the building. A plan of the site and full particulars can be obtained of Mr. William Hollis, surveyor, Southstrand Estate Offices, Church End, Finchley, London, N.

HENDON.—On May 11 the Education Committee will be prepared to receive competitive designs for a school at Hale Grove Gardens, Mill Hill. Conditions of competition and plan of site may be obtained from Mr. James Anderson, secretary to the committee, Council Offices, Hendon.

SHIPLEY.—In connection with the competition for public offices, the Urban District Council have made the following awards:—First prize (£100), Messrs. Anderton & Bailey, architects, Shipley and Keighley; second prize (£50), Messrs. Clark & Moscrop, architects, Middlesbrough; third prize (£25), Mr. R. T. Wilson, architect, Beamsley Road, Frizinghall. The competition was confined to Yorkshire architects, the assessor being Mr. F. E. P. Edwards, architect to the Sheffield Corporation.



ANCIENT DOMESTIC IRONWORK.—Fig. 2.

R.I.B.A. EXAMINATIONS.

The designs submitted under Subject XIII. will be on view in the Galleries of the R.I.B.A. on March 20, 21, and 23, between the hours of 10 a.m. and 8 p.m. (Saturday, 6 p.m.).

ILLUSTRATIONS.

NEW CEMETERY BUILDINGS, HARTLEY, NORTHUMBERLAND, FOR THE WHITLEY AND MONKSEATON U.D.C.

The illustrations show the designs submitted by Mr. Edward Cratney, M.S.A., Licentiate R.I.B.A., in the original competition instituted by the Council.

All external walls to be of local stone rubble in lime mortar, faced externally with grey granite rubble; all dressings to be pick faced. Internal division walls to be brick; all steps to be pick-faced granite. Floors of chapel, mortuary, tower, and vestry self-faced Caithness flags on a concrete bed. All carpenter's and joiner's work to be in English oak, left clean from the plane, except internally to lodge, where the carpenter's work was to be in best-quality redwood, and joiner's work in basswood, stained and wax-polished. Metal casements in oak frames to windows of lodge; plastering to chapel and mortuary to be finished off with wood float, all other plastering smooth. Roofs covered with Tilberthwaite slates, specially selected for rough texture and colour. All valleys to be swept. Lead glazing with heavy cames to all windows. Artificial lighting by inverted incandescent burners, with wrought-iron fittings. Heating to be by gas radiators. Opening hoppers to windows and extract louvres in roof provided for efficient ventilation.

The whole of the boundary walls to be faced with grey granite rubble in cement mortar; gate piers to be pick-dressed granite, and the gates to be best-quality English wrought iron, specially designed.

As the site on which the buildings are to be placed is close to the coast line, and directly exposed to the north-east gales, the question of suitable materials and character of design were of great importance; for this reason granite was fixed upon, and simplicity was the general keynote that influenced the design throughout.

The Council having suggested several alterations, the three premiated architects in this competition were invited to send in fresh designs, and those submitted by Mr. Cratney were placed first by the assessor, Mr. A. W. S. Cross, M.A., F.R.I.B.A.

We hope to publish illustrations of the actual buildings at a later date.

OXFORD COLLEGE SERIES, No. 132.—JESUS.

Our plate in the Oxford College Series this week shows the interior of the dining-hall of Jesus College.

His Majesty's Board of Works, in whom was recently vested the care and preservation of the ruins of Lindisfarne Priory, Holy Island, have begun an extensive scheme of strengthening the whole structure. All the walls are to be re-pointed, cement being sprayed into the crevices of the ancient masonry with a new machine which has recently been invented for this class of work. The whole scheme will, it is stated, take five years to complete, and the method employed in no way disfigures the ancient structure which it preserves.

ANCIENT DOMESTIC IRONWORK.

By J. Seymour Lindsay.

Illustrated by the Writer.

The demand for something entirely original in decorative art has now died down; the demand which was responsible for "l'art nouveau"—that short-lived style which was conceived by uncurbed imagination and composed of a conglomeration of good and bad detail served up for the most part regardless either of proportion or line. Its death has left us, if not sad, wiser, for now, having had our fling at the novel, we have returned to the recognised styles from which to glean our data and inspiration for the production of decorative design. It is with this in mind that I bring to your readers' notice some of the iron implements which have adorned the homes of our forefathers. They all seem stamped with the same brand—utility; they were made for use, very often hard use, and they look it.

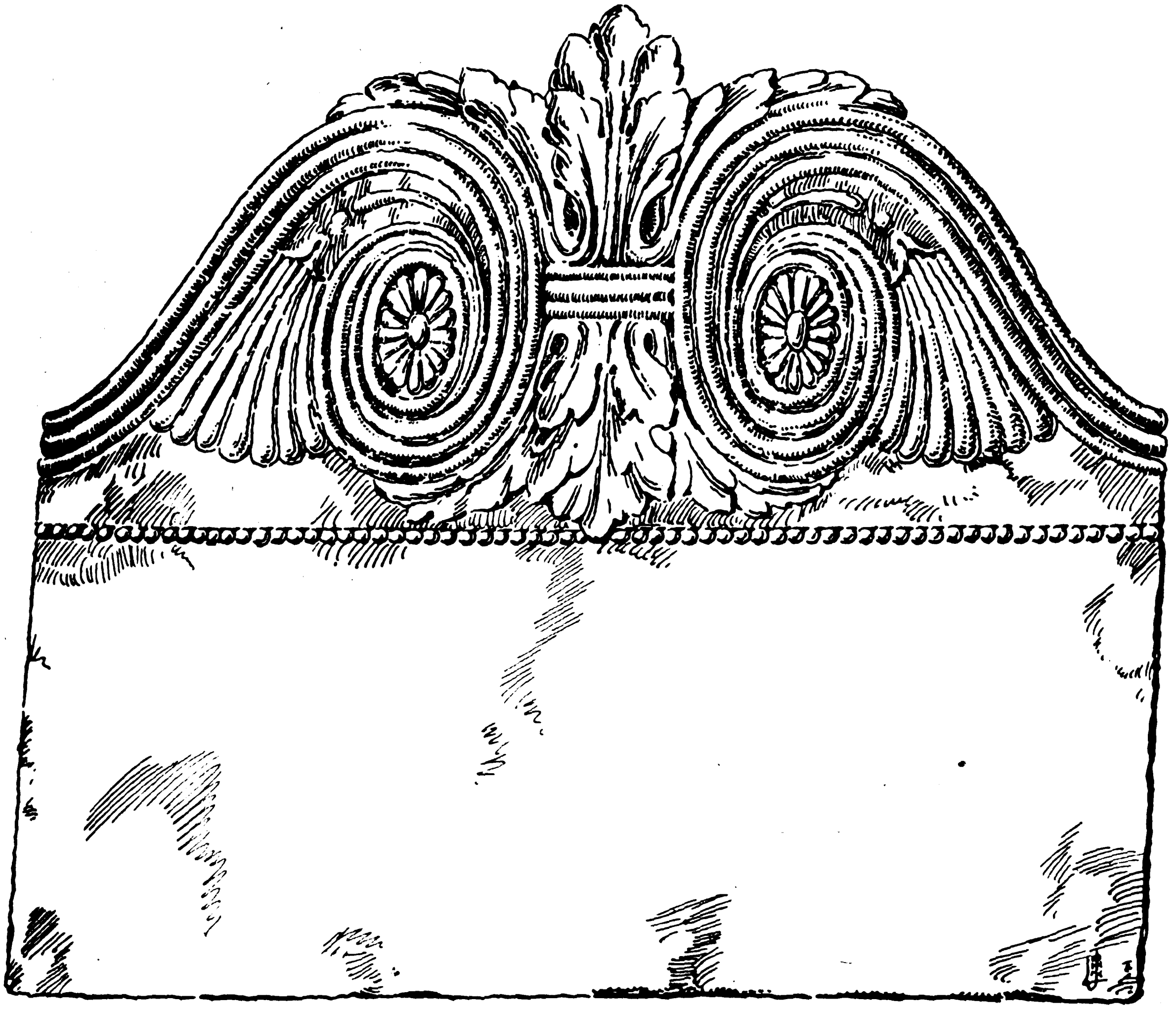


Fig. 3.

Of all the places within the house where iron implements were used the fireplace was the most rich, for upon and around it clustered many a well-wrought utensil whose use even is now long forgotten by the majority, but which was indispensable to the homes of our ancestors.

Of modern methods the well or sunk fire most closely resembles the old down-hearth, but it lacks the romance and grandeur that the great open fireplace inspired, with hearthstone and inglenooks and massive cast-iron fireback or, as it was sometimes called, fireplate. These latter were often richly ornamented with bold modelling, the subjects usually being of an armorial or allegorical nature—the latter being the result of Dutch influence—and were cast in large numbers in this country towards the end of the seventeenth century and the beginning of the eighteenth (figs. 1, 2, and 3).

Upon the hearthstone itself stood the firedogs which supported the billets of wood used as fuel (figs. 4 and 5), and above them swung, in many cases, a massive wrought-iron potcrane (fig. 6), some of which were quite simple, others ornamented with scroll-work and having various devices for adjusting the height of the cauldron. Small firedogs now in use in farmhouses and cottages in districts where wood fuel is still obtainable gratis are even yet to be picked up for a few shillings, but the more ornamental variety which have hooks for suspending a meat-spit are by no means common. These dogs, whose usual place was the great kitchen, are in many instances examples of really fine smithcraft (fig. 7); this also applies to the clockwork spit-driving gear (fig. 8), which, by means of a weight and a train of wheels, turned the meat-spit. They are often of a very ornamental character, fashioned throughout from spindles to faceplate in wrought iron, except in some instances, which are partly of cast brass, as, for example, those exhibited in the Victoria and Albert Museum, South Kensington. Their place in the kitchen was on the chimney breast at one end of the mantelshelf, which usually had a hole cut in it to allow the driving belt to pass through to the spit.

For suspending vessels over the fire pothooks were used when there was no chimney crane (fig. 9), and a small variety of pothook was also sometimes suspended from a crane, when the latter had no height adjustment (fig. 10).

The foregoing articles, although the dogs and pothooks are not strictly so, may be regarded as fixtures having their set place on or about the hearth.

Among other implements which may be ranked as down-hearth implements is the baking iron (fig. 11); this is a small, low trivet with iron handle made in various designs, the most primitive being of sheet iron. These irons were used to support a small vessel in which various forms of bread or cakes might be baked above the embers. Another implement also used in the process of baking is the salamander. This is a flat mass of metal at the end of an iron bar which was made hot and held close to any pastry or other dish, the crust of which the cook required to brown. The type of salamander used upon the down-hearth was fitted with two short feet (fig. 12). The characteristic of down-hearth implements is that they are invariably supported upon two or more short feet, as, for instance, the baking iron and salamander just mentioned, and the bronze skillets, the early equivalent to the modern saucepan (fig. 13). The iron cauldron was, and is still in remote districts, the most indispensable of all cottage and farmhouse utensils, owing to the different uses to which it can be put—primarily as a boiling vessel for all manner of food, secondly as an oven, not only for baking bread and cakes, but also game and birds, which may be cooked to perfection in a cauldron either suspended above the fire upon a chain or pothook or placed upon the ashes upon the down-hearth.

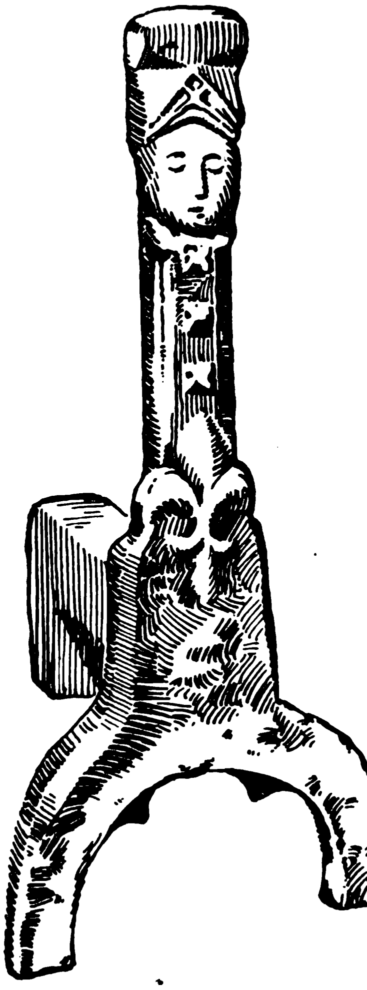


Fig. 4.

Toasters for use upon the hearthstone differ from the later types, inasmuch as they are made of very much thicker metal—often ornamented with chamfering and incised decoration—and stand upon squat feet instead of being constructed to hang upon the bars of a grate (fig. 14).

An article which is considered a great rarity among collectors of old domestic metal-work is the fire-cover or curfew (fig. 15). This implement was used to bank a fire down at night, the embers being raked together at the back of the hearthstone and covered over, so that on the following morning, the fire-cover being removed, live embers would be found sufficient to start the day's fire without having to resort to the tinder-box. In this way kitchen fires were kept burning for months together.

It may seem strange to some that there are so few examples of Mediæval iron domestic implements in existence, but it must be remembered that prior to the fifteenth century there was no cast iron used in this country, and that iron in its decarbonised or malleable state was given to rapid oxidisation. This fact alone would account for the scarcity, but there are other reasons besides this, one being that the metal was scarce and in great demand, and that implements on becoming obsolete, or of no further service, would not, as now, be cast away, but they would in all probability be transformed, or rewrought into some other article, and in this way types common enough at one time would be almost obliterated. During the eighteenth century, when numbers of these old implements were being superseded by other and more up-to-date types, and the metal had become much cheaper, they would no doubt be cast aside with contempt, the usual treatment meted out to household gods, no matter how excellent their past record. Then later, in the nineteenth century, when many fine examples of smithcraft still survived, the public taste did not move in antiquarian channels; far from it. All around was novelty, and all thought and energy was taken up by the production of the thousand-and-one things that had hitherto been impossible but that had been made possible by the ability to produce good iron and steel cheaply in large quantities, which was brought about by the introduction of coke fuel in the smelting furnaces in the middle of the previous century

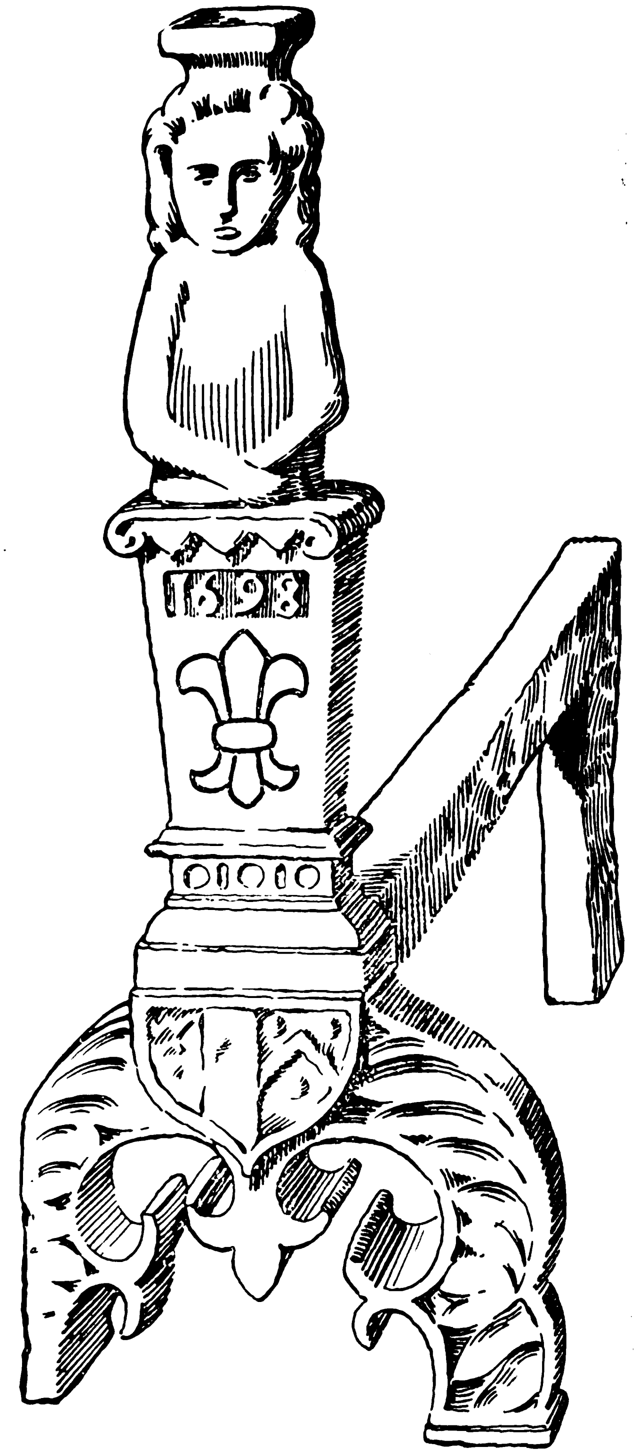


Fig. 5.

It was a period of many extraordinary engineering triumphs. It was an age of inventors and mechanics, and a mechanic, whatever else, is seldom an antiquary. It seems that the only chance Mediæval ironwork had of escaping destruction either at the hands of the blacksmith or by the action of the elements or the ever-ready eighteenth and nineteenth-century dustbins, was to get buried, or else be cast into the river, and so lie submerged in the mud until brought to light through the medium of the dredger, which often yields interesting Mediæval treasures. But now that we have become accustomed to the wonders of modern engineering and to the countless advantages and comforts it has bestowed upon us, we find a growing tendency to take an intellectual interest in the old domestic implements that were made before the introduction of modern appliances, which have given us what might be called a period of stereotypes.

Although these articles which the writer has endeavoured to describe, and many others of a like nature, may not appear to some more than obsolete machinery, they are, in fact, apart from any artistic virtue, a monument to the men who, by their skill and perseverance, have given us, through the medium of the great iron industry, the greatest civilisation the world has ever seen, and the most notable century the world is ever likely to see again.

(*To be continued.*)

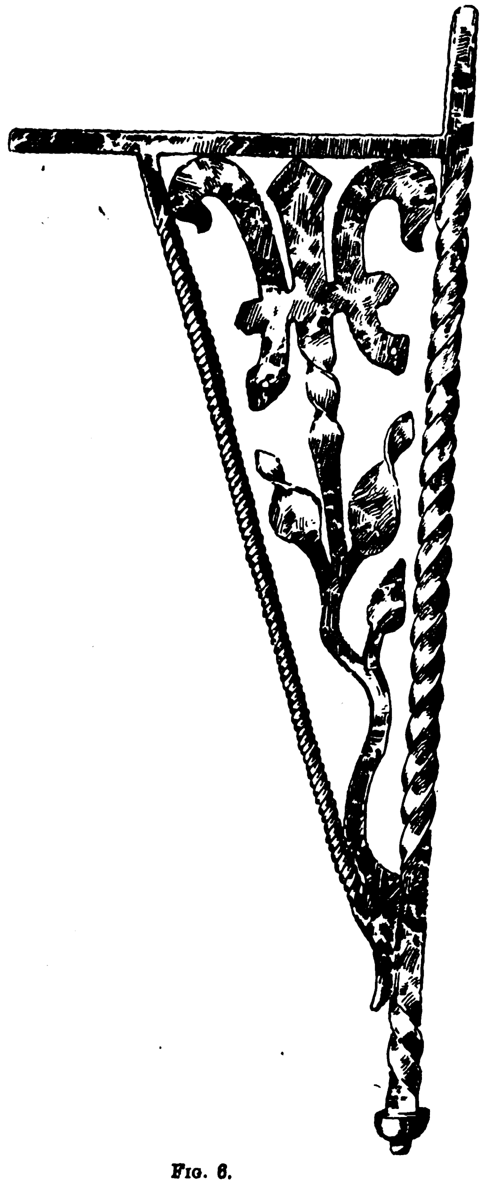


Fig. 6.

DESCRIPTION OF FIGURES.

Fig. 1.—Fireback depicting a Sussex ironmaster surrounded by articles connected with his trade surmounted by scroll-work and the following description, "Richard Lenard Founder at Bred Fournis," with the date 1636. In the collection of Mr. Charles Dawson, F.S.A., exhibited in the Hastings Museum.

Fig. 2.—Late seventeenth-century fireback of Dutch design, with central panel representing Hercules slaying the Hydra. In the collection of the writer.

Fig. 3.—Late eighteenth-century fireback in the collection of Mr. L. G. Russell-Davies.

Fig. 4.—Cast-iron Sussex fire-dog, late fifteenth-century type, in the possession of Mr. Wayte, of Edenbridge.

Fig. 5.—Cast-iron demi-figure fire-dog, dated 1698. From a drawing by William Twopenny in the British Museum.

Fig. 6.—Wrought-iron pot crane. In an old house in Flintshire.

Fig. 7.—Eighteenth-century cresset fire-dog, with adjustable hooks for suspending the meat-spit. In the ironwork collection at South Kensington Museum.

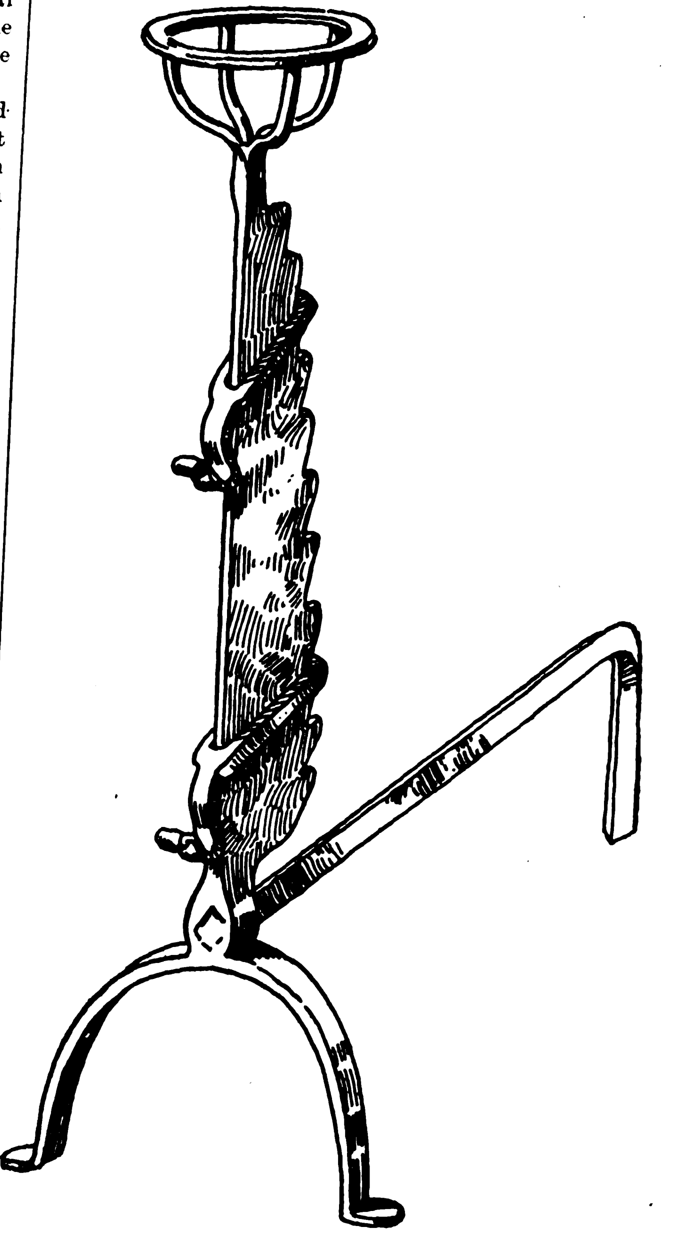


Fig. 7.

Fig. 8.—Spit-driving gear. Seventeenth-eighteenth century type. In the writer's collection.

Fig. 9.—Wrought-iron pot-hook on rachette principle. In the writer's collection.

Fig. 10.—Pothooks for hanging from a crane; A. Property of Mr. R. Turner. B, In the collection of Mr. L. G. Russell-Davies. C, In the writer's collection.

Fig. 11.—Baking iron. In the collection of Mr. L. G. Russell-Davies.

Fig. 12.—Salamander. In the collection of Mr. L. G. Russell-Davies.

Fig. 13.—Bronze skillets. Seventeenth and eighteenth century types. In the writer's collection.

Fig. 14.—Down-hearth toaster. Seventeenth-eighteenth century type. In the loan collection at South Kensington Museum formed by the late Lady Dorothy Neville.

Fig. 15.—Fire-cover or couvre-feu. In the metalwork collection at the Brighton Museum.

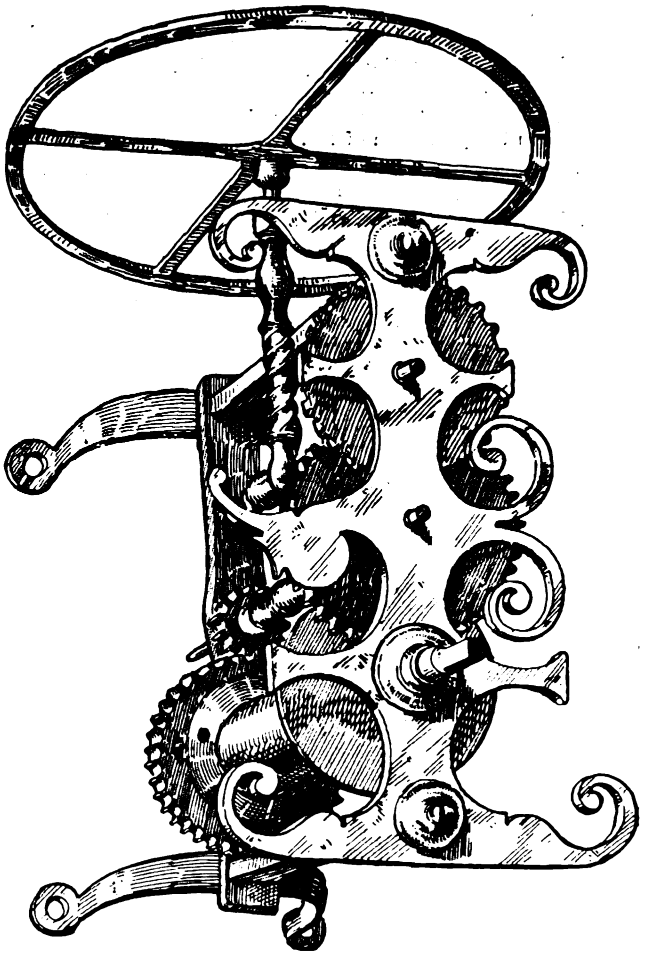


Fig. 8.

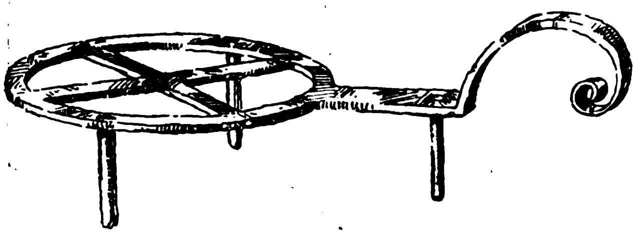


Fig. 11.

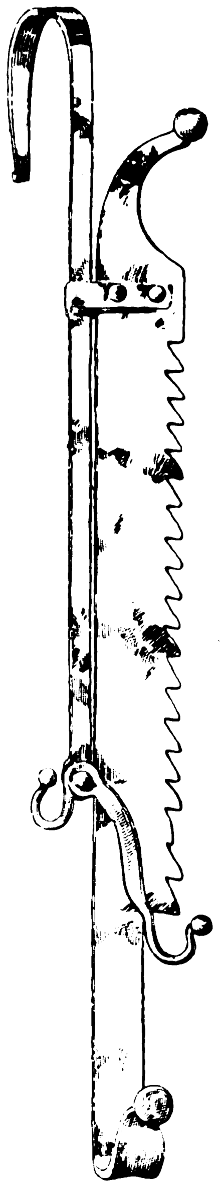


Fig. 9.

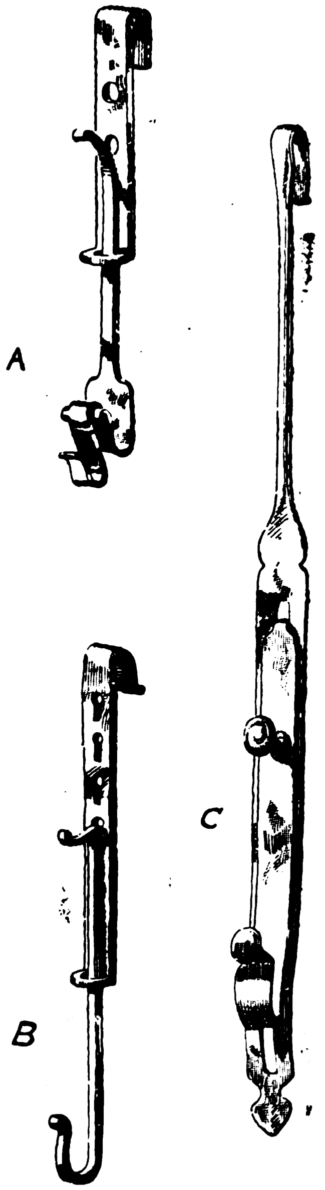


Fig. 10.

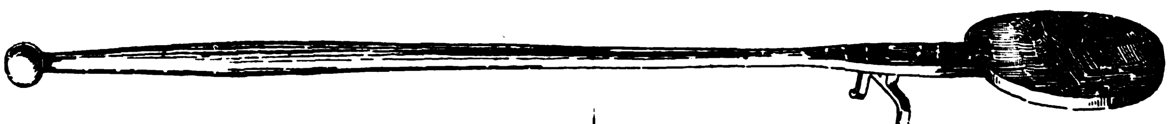


Fig. 12.

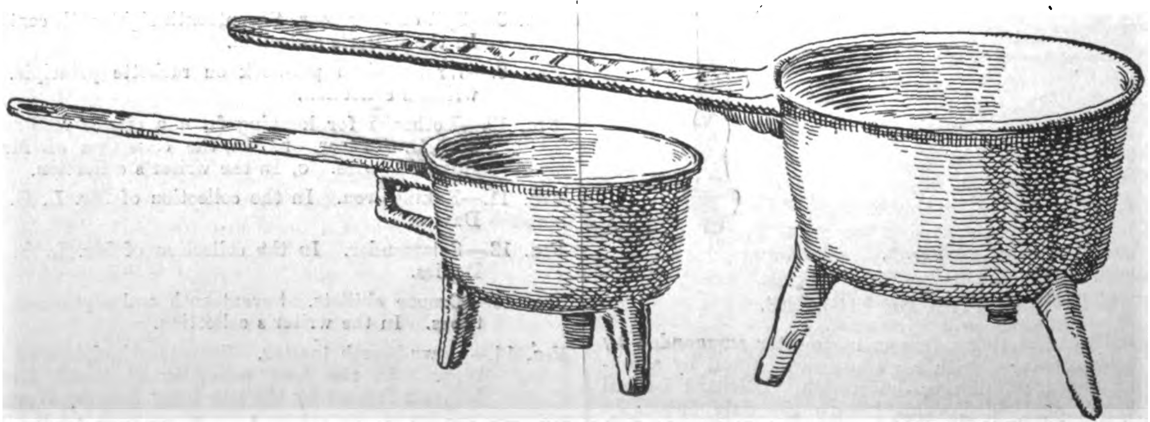


Fig. 13.

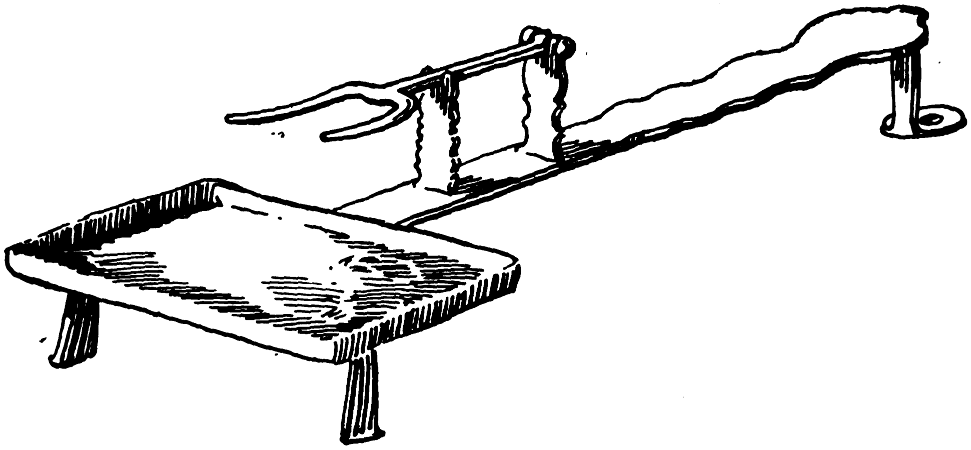


FIG. 14

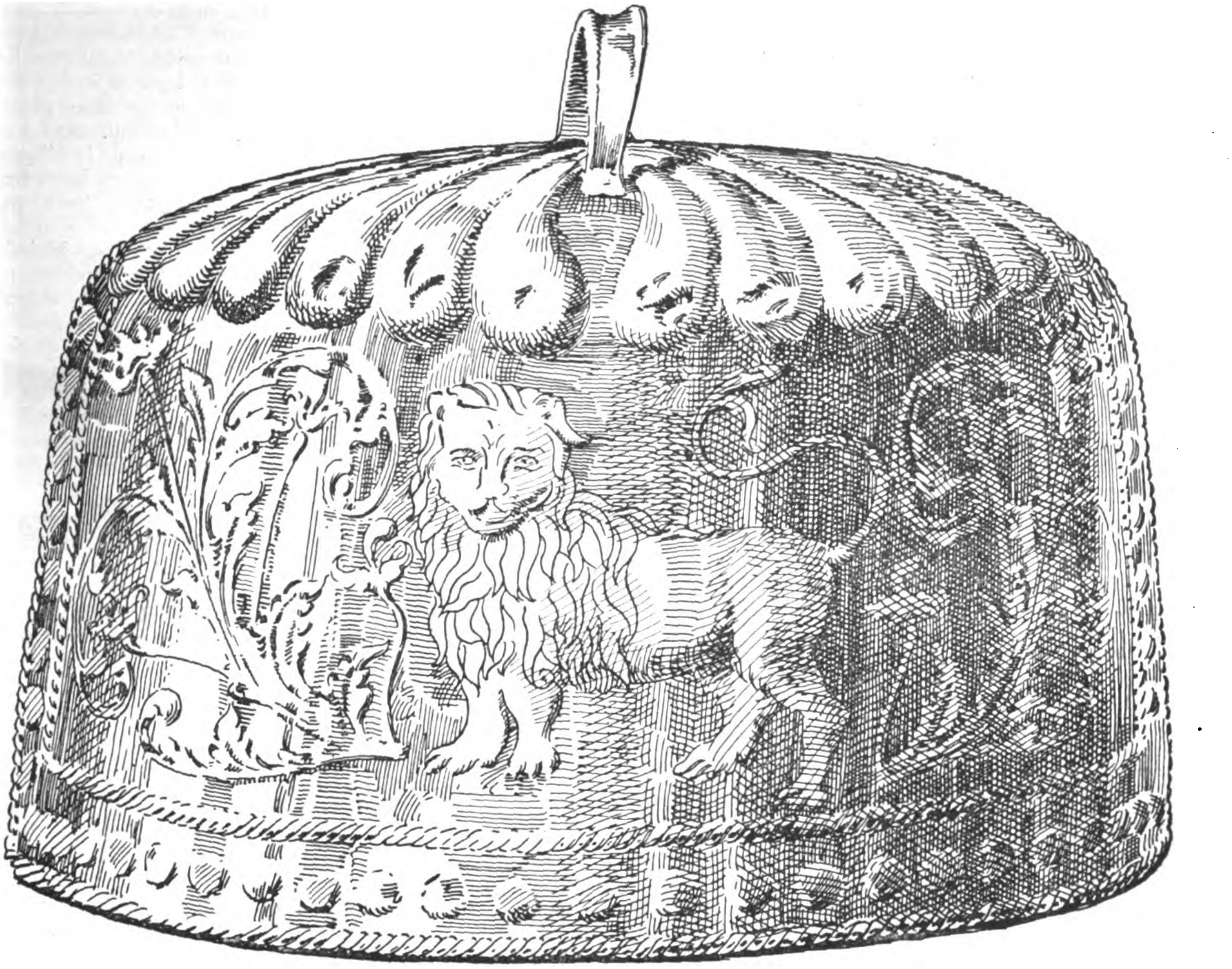


FIG. 15.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

SPECIAL general and business meetings were held at the Institute on Monday evening, Mr. George Hubbard (Vice-President) occupying the chair.

There was not a large attendance of members, but a quorum was obtained shortly after 8 P.M.

The first special motion was the election of M. Jean Louis Pascal, the eminent French architect, as Royal Gold Medallist for the year.

This was moved by the Chairman, seconded by Mr. A. W. S. Cross (Vice-President), and carried unanimously with applause.

The Chairman then moved, on behalf of the Council, the suspension of certain by-laws, so that the President might be re-elected for another year of office.

Mr. Hubbard said he wished to put on record the very able services that Mr. Blomfield had rendered to the Institute during the consideration of the registration question and in other matters of importance. He was sure they all would congratulate Mr. Blomfield on his recent elevation to full membership of the R.A.

The resolution was seconded by Mr. A. W. S. Cross, and carried with acclamation, without discussion.

The business meeting opened with the election of fifty-five Associates *en bloc*.

Mr. Edward Bullough, M.A., Secretary to the Board of Architectural Studies of the University of Cambridge, was elected unanimously as an Hon. Associate.

The meeting then resumed consideration of the new R.I.B.A. scale of charges.

Clause 4, relating to the fees for preparing sketch designs and approximate estimates, was discussed at length by Messrs. Greenup, Max Clarke, W. H. White, G. L. Elkington, and others, and was made to conform to Clause 1.

Clause 5 was passed, with the omission of the first subclause, and with other slight alterations; and Clause 6 was carried after a brief discussion.

Clause 7, relating to the reuse of old materials, did not meet with the approval of the meeting, and its deletion was moved but not carried. Several members asked what it was really intended to mean.

Mr. Greenup instanced cases where old oak panelling was purchased by a client at a high price, and the architect had great difficulty in adapting it to its new surroundings, or where a valuable old fireplace was fixed instead of a modern one as specified. In these cases, the speaker contended, the architect would suffer greatly by this clause, but the Chairman pointed out that in such cases the architect would be entitled to charge an extra fee under Clause 3 relating to decorative work.

Eventually a clever re-drafting of the clause was submitted by Mr. Paul Waterhouse, and seconded by Mr. M. Garbutt, and accepted by the meeting.

Clause 8 was moved by Mr. Elkington, and accepted without discussion.

At this point Mr. H. Shepherd suggested that matters were proceeding too rapidly, and proposed as a matter of order that each clause should be read through carefully by the Secretary.

The feeling of the meeting was against this, and it was negatived by the Chairman as unnecessary.

Clause 9, relating to surveys of sites and estate plans, was carried quickly, on the motion of Mr. W. H. White.

Progress was being made with Clause 10, relating to estate development and road making, when a member called the Chairman's attention to the fact that several members had left, and that a quorum did not remain, and the meeting was counted out at 9.50 P.M.

ARCHITECTURE AND ENVIRONMENT.*

By Mr. W. S. Purchon, A.R.I.B.A.

(Concluded from last week.)

I THINK we must agree that what is admirable in these types of architecture of the past is not so much that which was taken from previous styles, but rather the bold modifications which were made by the builders on that which had gone before, in order to make their buildings fit for new requirements, for different environments. Should not we also tackle our own problems in a somewhat similar spirit?

Let us have one more look at Greek architecture. What is it? Short definitions are dangerous, but is it not fairly safe to say that it is a combination of Greek marble, the Greek climate, the requirements of the time, and the Greek mind?

We do not possess one of these things, but we have our own requirements, our own materials, our own climate, and our own mind. Let us find an architecture which shall be a combination of these things—poor things, perhaps, but our own.

It has been said that we should base our architecture on that of the Greeks, because the latter is intellectual. It is intellectual because it is so satisfactory a solution of a definite problem.

Again, it has been said that the details of Greek architecture are words which we may build into new sentences, but we must remember that the words would be Greek ones, and so the resulting sentences would also be Greek—of a sort. They would certainly not be English.

I have referred to the question of the style to be adopted in the new buildings at Delhi. When this was before us some little time ago interesting discussions took place in some of our journals. Some writers, in defending the idea of putting up English buildings in India, quoted the example of Rome as a precedent, but really if we followed the example of the Romans we should let the Hindoo continue to put up his own type of building, for in Egypt, the only country other than Greece in which the Romans found an architecture, they practically left it to develop on its own lines.

In one leading article the writer saw the importance of climate as a factor in architecture. He saw that the difference between Gothic and Greek mouldings expressed the difference between northern and southern climates, and he realised the suitability of great cornices and open loggias for a sunny climate. These things we can all see clearly enough to make a case for a certain type of building in India, but are we prepared to use the same arguments with regard to work in England?

Surely the proper attitude to adopt with regard to the Delhi question is that the new buildings should be designed with the object of making them thoroughly efficient for the purposes for which they are required, and perfectly harmonious with their environment. And that brings me to the second reason I gave for speaking on my subject, for exactly the same objects should be borne in mind in designing English buildings.

A strenuous attempt is being made at the present time to show that Neo-Grec is suitable for all purposes and all surroundings. I am convinced, however, that if we start off with such an assumption as this we are not likely to get such a good result as we should do if we begin by attempting honestly to satisfy the needs of those for whom the building is intended, and let the external treatment be the logical result of this and a proper consideration of the materials used and the nature of the environment. With the former method we are likely to get architectural scenery with a building behind it; with the latter we may get architecture.

My third reason for reading this paper was connected with educational matters. It may perhaps be thought, from what I have said, that I desire to reduce study of the work of the past; on the contrary, rather would I see it increased. I am very sorry, in fact, that measured drawings are no longer compulsory for the R.I.B.A. Final, for those which have now to be done for the Intermediate are hardly likely to reach such a high standard. I do suggest, however, that the study of the architecture of the past should be approached not with the idea of collecting interesting details either Gothic or Greek, but rather with the idea of seeing how problems were solved in other times or in other places, bearing in mind that our requirements are different from those of other times, and that our environment is different from that of other lands. And not only can we learn from past successes, but also, as I have suggested, from past mistakes.

To those entrusted with the setting of problems in design I would particularly draw attention to the importance of environment. Students are frequently asked to design a building for no environment in particular, but no architect ever had such a problem to carry out. There is, in fact, no such thing as architecture apart from environment. The more clearly problems in design state the nature of the environment—such, for instance, as the materials available, the adjoining buildings, if any, and the country for which the building is intended—the more genuine are the designs likely to be.

In a problem recently set the environment was given, and it was so interestingly put that it will bear repetition: "A classical villa situated in wooded country." The environment I can understand, incomplete as it is, but why a *classical* villa? I would suggest, as an alternative problem to this: "A Greek Revival Church for a Cotswold village," or "A Gothic Cathedral for the Athenian Acropolis." Seriously, however, it would be interesting to ask students to design two buildings to meet the same requirements, except that one was for Athens and the other for England.

Architectural education is surely one of the influences affecting modern architecture; we might, in fact, extend our definition of environment so as to include it, and so perhaps I may be allowed to say a little more about these testimonies of study. The idea of asking a student to choose between making shaded drawings of designs for buildings or of making working drawings for such features as a bridge, a spire, or a roof is, I think, a mistaken one.

It is a mistake because it suggests that there are two kinds of architecture—one in which construction is important and another in which it is not. It is also a mistake, because it allows a student to avoid the making of working drawings, to avoid those "greater opportunities for that design which is, after all, the final end of those studies, including, as it does, construction, materials, and applied science as necessary elements of good design." I quote from a letter written by Mr. Blomfield to the *Builder*. And when the working drawings are not to be of complete buildings, as is the case with the present set, the student who wishes, as I think he ought, to design such complete buildings is not allowed that free play for individual methods and idiosyncrasies which was promised him when the new scheme was introduced.

It may, of course, be said that a design in any style could be finished with shadows and a gold border, but we are practical men, and we know well enough that that method of finishing drawings tends to produce one particular type of design. It is, in fact, tending to squeeze out the consideration of construction, material, colour, and suitability to environment; it is tending to squeeze out work of a type done by some of our best men.

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* A Paper read before the Architectural Association on March 2.

So I am glad that one set of designs worked in a recognised school may now be submitted in lieu of one set worked to the Institute conditions, and I hope that before long all four sets may be submitted in this way.

Any revival which may be brought about by persuading all students to work in one manner—a manner not of their own choosing—would not be genuine. It would not be based on any genuine movement such as that which was at the back of the Renaissance, or even the Greek Revival; it would be forced and would inevitably collapse.

And is all this painstaking drawing of shadows worth while? When casting shadows on plans and sections and even reflected shadows on elevations, are we not literally grasping at the shadow and losing the substance? Would not our time be far better spent in learning a little more about such fundamental factors in design as the proper uses of materials, sound construction, sanitation, and suitability to purpose and surrounding conditions?

The making of sound, clear, and definite working drawings is also far more valuable to a student than the making of shaded drawings, and would doubtless lead to a higher standard in working drawings than that which obtains among English architects at present.

I hope this paper has shown, if perhaps somewhat indirectly, that good might result from a continuation of the study of architectural principles—a study once encouraged by the authorities, but recently thrown overboard as "lumber," possibly because the study of principles and the practice of Neo-Grec were found to be mutually exclusive.

I firmly believe in training students to understand architecture rather than to follow cut-and-dried rules. The latter method brings quicker results, but the former is a surer one, and one more likely to lead to ultimate success. I do not desire to replace order by licence, but I do desire to see dogmatic teaching replaced by the inculcation of broad principles, with one of which I have endeavoured to deal in this paper on "Architecture and Environment."

In conclusion, may I say that not only is the influence of environment on architecture of importance to us as architects, but we must also bear in mind that architecture is a part of the environment of the people, and a very important part, too. Our responsibility is therefore a great one, for, while the influence of ugly and sordid buildings is degrading, and that of a sham, forced architecture is, at the best, ineffective and inoffensive, the influence of a genuine architecture on all who come into contact with it is uplifting and ennobling.

DISCUSSION.

Sir Thomas Graham Jackson, Bart., R.A., in proposing a vote of thanks, said he had listened, as he was sure they all had, with great pleasure to Mr. Purchon's instructive paper. It could not be repeated too often that the changes in the history of architecture have not been the result of caprice or mere fashion, but have had some solid reason behind them—generally some necessity of construction which suggested new methods, or some difficulties arising out of the previous style. Mr. Purchon had shown them that in connection with the styles of the ancient world, how in Egypt, to begin with, the local circumstances of the country and the climate influenced the architectural history; how in Greece the slightly differing circumstances developed a different style; how, again, Roman architecture had to meet conditions very different from anything known in Greece, having a very much larger field to cover and a demand for great utilitarian buildings. At the time of the breaking up of the Roman system fresh difficulties occurred. Art had sunk to a low level, and the reproduction of the architecture of Rome, which was really the goal of Rome's conquerors, was impossible. Recourse was had to other expedients. And thus there came the Romanesque style, which could be built with smaller materials and fewer appliances. As skill improved, the builders came to Gothic. All these changes were based on environment or the local circumstances of the case. There was a distinct reason running through them all. There was no break in the sequence from Roman work till Gothic expired. Then came a revolution, and the first instance of a revival; there had been nothing like it before. Gothic had become worn out, and people looked about for something else. That was not a natural outcome of environment, so in the north of Europe the Renaissance ran its course and wore itself out. As a result there came the Gothic revival. The life of the Classic Renaissance had been the survival of the Gothic in it. There is an ethnology in art—*i.e.* certain tempers and dispositions which differ among themselves. In the monotony of Roman architecture, for instance, one sees the effect of the centralising of everything in Rome. When the Gothic or German races overthrew the Roman Empire, a different temper was brought in—that restless mood typical of the northern races. That fact is reflected in Gothic architecture, for in less than four and a half centuries Gothic ran through its different courses and then expired. Gothic architecture never stood still; one phase succeeded another almost in the same generation. Thus the people who built the west front of Peterborough might have had grandchildren working on the Perpendicular choir of Gloucester. His own belief was that no architecture will ever live in England which is attempted to be confined to strictly conventional rules. English architects must have liberty which allows them to express their feelings according to the natural views they might possess.

Mr. F. Dare Clapham thought the paper was full of sound advice which all would do well to take to heart. The influence of environment was recognised to be very strong on human beings. For example, dirty and unhealthy streets tended to produce an unhappy race; conversely, the finer the streets the more likelihood of having a healthy people. If that were true of human beings, it stood to reason that art, too, must be influenced. Indeed, all arts are influenced by social conditions; times of peace and strife have each played their part in architecture. They had just heard how much environment had influenced architecture, and they must admit that all architectural features and details were the outcome in every case of overcoming difficulties in a careful and practical manner, and of the use of handy materials and of meeting local climatic conditions so as to best suit the convenience and add to the comfort of those who will use the buildings. Unless a building did that it could not be called in any sense of the word true architecture. The old builders recognised this; they made their designs to fit in with their surroundings, as was exemplified in English country villages. Unfortunately, much modern work offended in that respect. What could be more out of keeping than some horrible concoction in red-brick pork-butcher's Gothic in a Cotswold village? Probably faults like those arose mainly from the present-day desire to go one better than one's neighbour. Where the surrounding work is good an architect should aim at less individuality in design, and try to obtain more unity in the mass. If architects paid great consideration to the use to which the buildings will be applied and had them executed in a proper and logical manner to suit their purpose, he believed they would be doing a lot to fulfil the motto of the Architectural Association.

Mr. Winton Newman suggested that what gave the highest pleasure was not the essentials. Gothic vaulting, for example, as developed in our country was not an essential in any way. The vaulting always had a protection in the way of a roof above. It seemed to him that Gothic development was due rather to adherence to a fine architectural idea. There was great hope in the thought that without departing from an essential one can keep a fine architectural ideal.

Mr. Arthur Keen described the paper as a very thoughtful and earnest effort to throw light on a subject worthy of serious consideration. With regard to Mr. Purchon's criticism of the R.I.B.A. Final Examination, the obvious reply was, "If you do not like these things why do them?" Mr. Purchon was a member of the Board of Architectural Education, and, therefore, might deal with those questions at their source. The Board recognised that the present swing of the pendulum was in favour of Classic, and, therefore, appear to be concentrating their attention on Classic work. Mr. Purchon had further referred to the different classes of subjects set for design. But the Board recognised that there were two kinds of students, the imaginative and the practical, and they felt it was not right to encourage only one of these; so subjects suitable for both are set side by side. The present manner of drawing to which the lecturer had taken exception was the best for the expression of the Classic method of design, and, therefore, it was right for the student to perfect himself in it. If a thing was worth doing at all it was right that it should be done in the best possible way the student could do it. He could not help thinking that perhaps Mr. Purchon was claiming rather too much for environment, for he included everything in it, and attributed every development to it. Gothic was essentially an architecture of small materials, and he personally would say that most of its development was due to the builders' ambition as craftsmen and to their efforts to reach their ideal under difficult circumstances. The history of Gothic architecture was the history of construction with small materials. In some cases the pleasure and pride in successful achievement carried the builders far beyond the actual structural requirements of the case. There could be seen to advantage side by side brick and stone buildings, as in the Cotswolds, and in other parts of the country. It should also be remembered that many things which look so charming now would not always have looked so well. He quite agreed that orthodox Classic architecture, being essentially the architecture of dignity, repose and breadth, was out of scale and keeping with the restlessness of our modern conditions. As a consequence, architects were led to all kinds of falsities of expression.

Mr. W. Curtis Green, the Chairman, in closing the discussion, said they had had an excellent paper, particularly excellent, perhaps, because they were not all in agreement with Mr. Purchon's deductions. When many of them were surveying the base upon which architecture stands, it was inevitable that some should be at opposite sides of the circumference of that base, able neither to see nor hear the fellows on the other side. If the base was a circle, one side was really as beautiful as another; those who could ascend to the apex of the cone might see the whole in perspective. English architects were following a spiral course up that cone, a course passing in its ascent a view seen from a lower level earlier in the pilgrimage. Just now some of them were passing the Neo-Grec Revival of fifty years ago; the view below was so enticing that some may halt there altogether, leaving others to advance. Others, again, either further on or further behind, he did not know which, saw below them the romance of the Middle Ages or the feast of the Renaissance. Or others dug in their own consciousness and that of the workman for inspiration. Mr. Purchon took his audience with him to the apex of the cone in the last sentence of his lecture, where he spoke of the ennobling influence of genuine architecture. Personally he (the speaker) cared little what trappings architecture might wear provided she was there herself. Too much importance was attached to externals. The essential thing was that architects should ascend to where the atmosphere supported life. Mr. Purchon was devoting himself to finding the way up for others besides himself. They were very much indebted to him for giving them the benefit of his experience.

The vote of thanks was then passed with acclamation.

Mr. Purchon having briefly replied, the meeting then terminated.

COTTAGE HOUSING.*

By Maurice B. Adams, F.R.I.B.A.

The need of cottage provision is undoubtedly one of the most pressing problems of the day, and linked with it certainly is the question as to how best to get the labourer "back to the land." Temperament and love of excitement, with the increasing zest for amusement, have had a good deal to do with this difficulty of keeping able-bodied men and women on the land. Certainly it will never be accomplished unless you make it worth a man's while to stay on the soil, and that must be done by degrees to be permanent and effective. This same difficulty is already being experienced in Canada.

Occupying ownership furnishes the only true solution of this extremely far-reaching national difficulty. Cottages have little in common with the Mistress Art of architecture, but are the outcome of daily needs, traditions, manners, and habits of workaday families engaged on the land—not the sediment of society, for the dregs of humanity have less than a nodding acquaintance with the aristocracy of industry.

In sparsely-populated agricultural localities, cottages should not be so isolated as often happened in the past, although no doubt the farm labourer does still need to be located near his work. Children's education has to be thought of, and much misery is caused in times of sickness by being beyond the reach of a helping hand. Besides all this, neighbourliness is an enormous factor in life. Groups of cottages, therefore, are preferable, and also are less expensive to carry out than single ones. Combined water supply and drainage cost so much less than individual installations. Successful cottage-work must depend on simple ideas, avoiding any attempt at architecture in the ordinarily understood sense of the word—that is to say, cottages must be free of all affectation of style. Pleasing proportions and nice groupings unassumingly managed constitute the sum-total, all told, for good results. To worry a rustic's cottage, by the wayside or in the hedgerow, with platitudinous detail can only arise from a loss of artistic judgment or sterility of imagination. To waste labour and material trying to make a tricky villa resemble an old-world cottage is sheer folly. The historic charm of these homes originated from frank conditions and methods indigenous to the soil, with workmanship done in a vernacular way.

Many excellently-illustrated books representing cottages and small houses are issued nowadays, for the English are much ahead of any other nation in domestic building-work. No one regrets that the once fashionable pattern-books intended to furnish houses in all styles have gone out of date. There seems, however, to be a tendency to adopt a far more pernicious practice, much advertised in America, of publishing sheets of lithographed plans of standard houses for universal adaptation. A short time since the Ecclesiastical Commissioners issued sets of regulation working draughts for vicarages, with specifications and bills of quantities, and sold them to country parsons for a few guineas. This questionable enterprise, I understand, has been stopped. Loudon's Encyclopædia, typical of its time, was a hideous and ponderous book, dated about 1833, and crowded with decadent cottages, farmhouses, and parsonages, set out in graduated sequence, after the vogue handed on by late eighteenth-century compilers.

Someone suggested last autumn that the plans of the much-talked-of and advertised "standard cottage" built in Surrey for £110 ought to be patented; but difficulties seem to have cropped up which put a quietus on the notion. The only actually patented plan of the sort that I can recall was that of some hexagonal cottages erected forty years ago at Seacombe, in Cheshire. They were original and ingenious, so schemed as to give the maximum quantity of habitable space with the minimum amount of material; but their appearance is far from attractive, the rooms in some cases are badly lighted, and the stairways are very cramped. Each block consists of six tenements, radiating round a centre, with projecting adjuncts, containing offices, extending into the areas surrounding the premises. These patented buildings can be seen near Birkenhead.

Thus far, so to speak, we have been wrestling with some of the economic limitations referred to in my text, harping along, as it were, with the old ploughman's doggrel song in mind:—

"I hope there is none offended with me for singing this,
For it was not intended for anything amiss;
But, if considered rightly, you will find what I say is true,
That the wealth of the Nation depends upon the plough."

Unfortunately, agriculture has for some years now taken a very secondary place in the national wealth, and healthy stalwarts have undoubtedly diminished. Football and cricket, instead of being played, are spectacular and vicarial games. No reason exists why we should limit ourselves to the threshold of cottage enterprise, for its artistic and poetic relationships are infinitely more agreeable than mere utilitarian conditions, and of all branches of building, domestic architecture is the most personal. Failure often happens by shirking practical details, and instead of devoting our energies to obtain the picturesque, we should do better by following simpler ideals and adhering to quiet appropriateness in our small buildings. All semblance of importance is alien to the spirit of so inconsequential an affair as a cottage.

The value of scale in colour must be recognised in any well-thought-out design. Red brick is apt to look crude or too assertive; so, if a choice is possible, darker or brindled shades and thin shapes are preferable. Purple slates are out of place with red brick in a clay district where tiles are made. Slates go better with masonry, and red pantiles, though cheap, are too big in scale for little structures. Flint facing with red-brick or tile dressings, in Sussex fashion, want a lot of beating, provided a cream-coloured mortar is used. Snap flintwork, as used in Norfolk and Suffolk with stone, is too expensive for cottages. When random masonry is employed with wide, uneven joints, the walling is much increased in interest by garnetting with pebbles or little pieces of black ironstone stuck into the mortar. I have used salt-glazed bricks with good effect for house-walls facing the sea and actually built on the shingle shore. For walls under bay-windows, salt-glazed brick is also valuable, keeping out the damp, so often a source of trouble in such positions, owing to the water running down from much glass surface. Grey stocks look nice for cottages; but the size of Midland and North-country bricks make them difficult to use unplastered. Cob cottages roofed with thatch nearly always look delightful; they are warm in winter and cool in summer, and last a long time. Deep eaves are essential, of course, and the plinth of the walls of thatched buildings should be tarred or asphalted, on account of the drips from the roofing. Unbroken roof-lines are of the utmost consequence in buildings of this class, while horizontal proportions are so essential that not even breadth of walling—always so valuable—can claim a prior place for insuring success. Pargetted cottages are met with chiefly in the Eastern Counties, where they are built with studs, and lathed with split unbarked hazel, used when green and pliant. The panels were pricked-up with coarse plaster mixed with chopped straw or hay mingled with pebbles, and finished off with fine stuff. This style of building had a remote origin in the mud-and-wattle work of our Saxon ancestors, and it is very durable. Pargetted walls often had rounded angles, such as befit the material, and were frequently whitewashed or roughcasted. New plastered examples are familiar, and sometimes are made very pleasing, though the effect too frequently bespeaks the builder's ideas of cheapness with vulgarised detail and lack of broad surfaces. Whitewashed brickwork is recommended for inexpensive work; but a spotty look results from soft and dark bricks grinning through, and though the lime may help to keep out the wet, it is not satisfactory. The question of cost necessarily has to be faced, and occasionally disputes arise; but a large proportion of these financial troubles are due to misconceptions resulting from an absence of judgment and forethought. Too commonly inducements are held out which persuade the unwary to give a preference to quantity regardless of quality. The craze for bargains is still so deep-rooted as to justify the old saying, "If you scratch a Britisher, Shylock appears very near the surface," thus also, perhaps, incidentally confirming the correctness of our Israelitish origin. Casual promises easily take in sanguine people, and, in looking back over our immediate past, we know the cost of living was not appreciably reduced after the alluring poster of "The Big and Little Loaf" had played its part in the last election. Deceptions at the best are risky; but deceptive building-work is dear at any price, creating an enduring source of trouble in store for those who come after, because scamped work, sooner or later, is bound to tell. Many small houses, not otherwise bad, fail from the initial fault of their builders in trying to make them look bigger than they actually are. The result is a thin and gaunt appearance, devoid of all imagination, owing to upstart blight of its parsimonious conceit. The practice of utilising every odd corner of almost every available cubic foot of enclosed space, thereby multiplying the number of windows, greatly increases this restless, shoddy character, which is aggravated by overdoing the superficial areas of glass to the detriment of breadth and value of wall. This bad habit is made worse by model by-laws, and by keeping the top of all window-lights level with ceilings. It is preposterous to impose urban regulations, determined by the conditions of crowded areas, upon buildings carried out in the open country. Ill-considered restrictions of this sort are at variance with reasonable liberty and the amenities of rural life. They also increase the cost of building in quite a needless manner. Thatch is one of the most delightful roof-coverings in the country; but under the régime of these provincial wiseacres, thatch and weather-boarding are not allowable. In vain may you draw attention to the fact that thousands of boarded and thatched cottages and wooden maltings also have graced numberless out-of-the-way lanes, by the turnpikes and away nestling by the hedgerows of pastureland, for numerous generations. It may be interesting at this point to state, as an instance of longevity, that there still stands in Grove Lane, within a stone's-throw of Camberwell Green, a thatched cottage in substantial order, and this probably is the sole representative of its class existing within the Metropolitan Police area. Good reed thatch will last good for thirty years—quite as long as corrugated iron-sheeting, which at best is a horrid-looking material, raining condensation-water in winter, and bakingly hot in summer. Uralite is a non-conductor, and will not burn; it keeps out the wet, also cold and heat. I have used it with lasting advantage for a studio. Timber and thatch can be treated with fairly reliable solutions to render them fire-resisting, and corrosive sublimate makes an excellent dressing against vermin. Lloyds insure thatched buildings of brick, stone, or cob wallings at half a crown per cent., or one shilling premium above the usual charge when the roofs are covered with tiles, slate, or iron.

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* **Abstract of a Lecture delivered in the Hall of the Worshipful Company of Carpenters on March 11.**

The only reliable way in which to produce satisfactory cottages—which must, of course, be modern—is to intelligently learn the lessons taught by the old vernacular work scattered up and down the countryside. May I enumerate a few very simple points which occur to me, though most of them are patent to anyone who uses his eyes? When half-timbering is employed, never use small scantlings, but follow historic solid methods and sizes, with curved stuff as grown, and carefully selected, for the shaped framings in honest carpentry, well pinned, and in oak left from the saw or adze to weather. It will stand quite well in big scantlings, if green. Old and seasoned oak fresh worked will shrink and split more or less when exposed to the wind, sun, and rain. Teak makes the best sills, and will not so readily turn up and twist in hot weather. Brick nogging or pargetted fillings look best in grey lime, properly used, with sharp sand of light colour, and it has a better appearance than Portland cement. Concrete-breeze slabs, used either double or singly, can be grooved into the timber framings and rendered over. The natural surface of lime mortar should be left untouched, for colour-wash is not to be compared with it. Decorated, diapered, and trowelled pargettings are familiar in many parts of England, also plastered figure-work and foliations of great beauty. Moreover, it is most durable, lasting much longer than some masonry; witness the figures still intact in the unfinished mansion standing in ruins in front of Hardwick Hall, Derbyshire. I am to show you some examples of old pargetting from East Anglia.

Deep eaves always improve the appearance of cottages, and when tile-hanging is used, the bottom verge-courses should tilt out boldly with a decided drip, throwing the water off the lower walling and keeping it dry, besides adding a welcome shadow just where it is wanted to give emphasis to horizontal lines, so very characteristic of old domestic work. When barge-boards are used, they are preferably plain in cottages. Chalk-built walling may be seen in Wiltshire and Surrey, with pretty and effective results, for this class of work, mingled with stone and brick for quoins, plinths, and dressings. Cob-walling suggests rounded corners and restriction to one-storey building, as in Devonshire. Windows and door openings in cob walls are pleasingly strengthened with random-ended courses of red roofing-tiles for the jambs. If a little decoration is needed occasionally, terra-cotta pins pushed into the face of the cobwork, in diapers or other simple patterns, sparsely managed to emphasise points, and not scattered about, will be found effective. The historic mud walls at Warka, in Chaldæa, are handsomely treated precisely in this way, and are so ancient as to be reckoned of uncertain antiquity. I am intending to show a drawing of this work. In Egypt the mud wallings in the valley of the Nile resist the sand-scourings of the winds, and stand better than the modern French ashlar buildings, which rot near their bases from the salt left after the Nile subsides, and they crack badly. So much for cob. As to concrete for cottages, if shingle or other suitable aggregate is found on the site, the material may be useful; but rounded shapes for walls, as in cob or flint-built work, where stone is scarce, seem the more natural form to adopt.

Nothing adds to the charm of home interiors like good plastering, and artistic attention to stucco detail repays itself more than anything. For example, in ceiling-coves above the walls, or to soffits for bay treatments, in buildings where handsome ceilings and rich cornices might be out of key with the general scheme, much effect can be obtained for trifling extra cost. On the other hand, it always seems a doubtful expedient to affect a barnlike eccentricity by using rough construction such as we see adopted for gentlefolks' cottages, under the supposition that this style of thing is very arty and chic, particularly when combined with random-built masonry or rough brickwork in big fireplaces which smoke like fun, and, to stop their nuisance, end up by resorting to the use of American stoves for anthracite coal. Fussy-shaped ingle-nooks in such rooms surely are reminiscent of old bar-parlours with rough ceiling-beams and big posts of timber of little use structurally, and looking more fit for the cowbyre than a modern parlour. Such anachronisms, so fetching on first acquaintance, no doubt may be mollified by the inmates dressing in Burberry short skirts and tweeds—always becoming for country wear; but such dégagé interiors are scarcely consistent with contemporary habits, neither do they furnish an agreeable setting for ladies in up-to-date evening gowns dancing the latest Tango to the gramophone by acetylene-gaslight. It strikes one as a trifle incongruous, and it is usual in cultured circles to allow some concessions to the conventions of society. Not everyone favouring a family with a friendly visit is prepared to deck themselves out in smock-frocks, sun-bonnets, and sabots in order to appear in keeping with the place. Extremes are apt to be peculiar, and are calculated to make visitors ill at ease. On the other hand, there is undoubtedly a perfectly natural and artistic quaintness, at once homely and comfortable, without evident effort, as the outcome of taste in the use of long low windows or pretty oriels and commodious bays, with pleasant vistas, so unassuming and befitting in cottage interiors, with peeps through the open casements into the sunlight and the garden suggesting the mystery of perspective and beyondness. Contentment is inspired by such simple possibilities, and the treatment, being reposeful, is unlikely to wane or become out of fashion. Meretricious effects soon tire, having only a transient character, which is apt to become uncanny. When good-patterned wallpapers are judiciously used, they are comfortable to live with, and last a long time. Whitewashed walls show off oak furniture and pictures to advantage, displaying tulips and roses delightfully. Consequently, no better setting need be required for well-dressed ladies. In Englishmen's houses the chimneypiece and fireplace is the centre of home comfort, where refinement and individuality of treatment ought to find recognition. A pretty grate is certainly a desideratum. Choice carpets and well-chosen rugs are of the utmost importance in any well-furnished home. Few things tell more as an evidence of an artistic temperament. Easy-chairs of good shapes are essential, and are not exclusively a concession to old age. Activity in labour or sport equally justify the enjoyment of rest, and where better than in the home? Why should clubs have the monopoly? Cottages for workaday people ought to harmonise with precisely the same qualification as to restful ideas; but they can scarcely be made too simple. Lime-white for walls is more suitable than paltry-patterned wallpapers, and is far more sanitary. Rounded corners to angles of walls next the ceiling, as well as along the skirting, are less likely to harbour dirt, and are more readily cleansed. Ledged doors with latches are more appropriate than panelled doors with mortised locks.

The outstanding drawback about so-called "standard cottages" for labourers in country places is their inadequate size, giving no room "to swing a cat"; and yet healthy men and growing boys, working from morning till night in the open fields, developing their muscles like cart-horses', are to be cramped up, with scarcely more than a gangway between the table and the hearth to turn in, or stretch out their tired limbs when the day's task is over. After being exposed to the wind and weather from sunrise to sunset, such people rather enjoy a stuffy atmosphere at night-time, when they like to feel warm: hence their disinclination to open the windows. But that is no reason why their keeping-room fire should be set in a draught between the front and back doors. As a matter of fact, one door is, generally speaking, sufficient for a house of this sort. It is a mistake to provide parlours. They encourage taking a lodger, leading to troubles later, and parlours are occupied for storing a lot of dust-collecting rubbish, and seldom are used except for funerals. In middle-class cottages it is wise to reduce the parlour in order to enlarge the living-room, or the parlour may be arranged as an alcove out of the other, for use at meal-times. But a small separate room in which to see visitors and for personal business is desirable. Staircases in the better type of cottage should be located out of sight of the front entrance, to preclude too ready a survey of the interior, and all stairways must be ample enough to pass coffins and wardrobes. Bathrooms and lavatories are best placed away from the main fronts, so as to keep wastepipes out of hearing and sight. In such rooms, window-boards of plain oak, or topped with plate-glass, prevent stains and mess from soap and sponges. In cottage sitting-rooms, tiled window-ledges accommodate pots of flowers better than painted wooden boards. Vitrified glazed baths are to be preferred; but earthenware baths are not adapted to domestic use or small dwellings, as they crack if hot water is suddenly turned on, they are too heavy, and cool the water. It would be tiresome to extend this list; but the hot-water system of cottages cannot be overlooked. People often insist on having up-to-date baths, and get exalted ideas from "Ideal Exhibitions" about all sorts of costly equipments. It is not everyone, however, who will allow sufficient fire to heat the needful supply of water. A lady was overheard to say, when inspecting her intended bungalow, "I am glad there is a bath, as one must have a store for the anthracite coal." Some time ago, when I erected some groups of cottages at Port Sunlight, one of the tenants in an adjoining block kept fowls in his bathroom. It led out of the scullery, and so was handy for poultry. At Letchworth, Mr. S. H. Donnelly, the resident engineer, designed an inexpensive hot-water contrivance, using a cylinder in lieu of a cistern with much success. I cover my cylinders with asbestos, and such a storage for more than one bath following in order can be used advantageously in connection with the kitchener. People complain sometimes that the only day of the week on which they can obtain a hot bath is an awkward time—on Sundays when dinner is ready. The old trouble about a sufficient fire probably explains this difficulty.

One word, in conclusion, about drainage, which cannot be too simple for industrial tenants, who usually have very elementary ideas about such matters, and they neglect earth-closets shockingly. Waste-water and slops are best thrown on the garden; but the bucket is seldom left in its proper position outside the scullery-wall. If, therefore, the local authority will permit, a soakage-pit, in light soils, makes the simplest arrangement. Combined drainage is allowable for cottage property in some rural districts, and cesspits are often unavoidable; but where a sufficient fall is available, semi-septic purifiers and filtering-beds furnish a most efficient method of dealing with the soil. The effluent is unobjectionable and colourless, so can discharge into a ditch or stream without risk of pollution. I speak of this from experience. Only, in such cases do not allow chemicals or carbolic acid to get into the drains, or the disintegrating process will at once be sterilised, and stop the aerobic efficiency of the scheme, causing a fearful nuisance. Brick-built junction-chambers, with airtight covers at every branch connection, add greatly to the cost of drains, and occasionally cause accumulations of filth which are very offensive. To obviate such objections and expense, the "Rodding eye" system has been carried out successfully on an extensive scale at Letchworth by Mr. Donnelly, and the local authority has also taken it up for their properties. The point about this method is facility of access, all else as to ventilation, tubes in straight lines, and ventilation being similar to all up-to-date plans of drainage. I will show you some diagrams on the screen.

I conclude by urging attention to the warning in the following particulars: The Council of the Associated Chambers of Agriculture last month came to the conclusion that a standard cottage of cheap construction, "without sacrifice of efficiency," at 2*s.* 6*d.* a week, was the lowest *economic* rent conceivable. The annual rental was thus £6 10*s.*, and from this deductions of £1 for repairs, 2*s.* 6*d.* for insurance, leave a balance which, if capitalised at 3¾ per cent., would represent £143 6*s.* 8*d.* This would provide £5 for the site purchase, £10 for water supply, and £5 for fencing, paths, &c., and leave £123 6*s.* 8*d.* for the building. Evidence was given that three bedrooms, a living-room, and scullery had been built for that money. Mr. Walter Runciman, speaking on behalf of the Government, promised if money was wanted for such rural housing it would be forthcoming from the national purse. More recently still, the Chancellor of the Exchequer, on the eve of a by-election, promised, in the House of Commons, that the Government would arrange to what extent public credit should be hypothecated, and what would be the financial grant necessary, "to deal with this tremendous problem."

EDUCATIONAL CINEMATOGRAPH FILMS.

On Friday evening last there was a large gathering of members and visitors at 18 Tufton Street, Westminster, S.W., at the invitation of the Architectural Association, to view an exhibition of moving pictures dealing with certain trades in the building trades.

Mr. W. Curtis Green, F.R.I.B.A., the President of the A.A., gave to the audience the following introductory explanation:—

A cinematograph entertainment seems, on the face of it, a curious thing for an Architectural Society to invite you to see. You may wonder why we have embarked on such an enterprise. Well, as some of you know, we run an Architectural School here, probably the largest in the kingdom. And the knowledge of building materials, their uses, and the processes of their manufacture are essential to all students of architecture. To impart this knowledge by means of lectures alone is difficult—almost impossible. In addition to lectures we can, and do, give demonstrations of actual work in progress, but these are necessarily somewhat fragmentary. A student's time would soon be filled up with nothing but these demonstrations if we attempted, by means of them, to impart a really complete knowledge of the various trades and building processes. Most of our lecturers have found that a lecture—for example, on bricks and brickmaking—usually fails to hold a student's interest without illustrations. The more true to life these illustrations are the better, and so it occurred to some of us that the cinematograph was the obvious development of the still photograph to lend the interest of actuality and continuity. We intend then to supplement, and not to supersede, the lectures or demonstrations and the visits to work in progress.

I should like to make this Association's position in the matter quite clear. We wanted these films for use in our own schools, but we could not afford the heavy outlay involved —really a very considerable amount if a sufficiently large series is to be undertaken to cover the multiplicity of materials and processes with which we have to deal.

We therefore approached Messrs. Ruffell's Exclusives, Ltd., with the proposition that they should make a few experimental ones. This they undertook to do at their own expense, and it is therefore due to their enterprise that we are able to show you these films to-night. If they are a success, and taken up by the technical schools and schools of architecture generally, the complete series will be undertaken.

Arrangements can be made for any school or institution to buy or hire copies, and any further information will be given by the manufacturers on application to them or ourselves. The Association will continue to supervise the making of the films and the lectures which will accompany them, and have not, I need hardly say, undertaken the scheme with a view to making money out of it. We have undertaken it for the sake of our School, and we hope to cover expenses and obtain copies of the films.

We are also much indebted to the firms whose names are on the programme, who have placed their works at our disposal free of any expense for the making of these experimental films, and also to many others who have promised, to do so when required.

To-night, as we have a good many films to show, they will run through the machine rather faster than will be the case when they are used in a class, and you must not, therefore, be deceived at the apparent speed at which the British working man performs his duties. Also, for the sake of saving your time, the lectures which you will hear are merely abstracts from those which we intend to issue with the films, and are given in most cases by those of our members who have given up a great deal of their time to supervising the actual taking and making of each film.

I will not detain you any longer; but I should like to add this: that at the back of your programme you will find a blank page upon which any suggestion you may have for improving the present films or for the production of new ones will be very much welcomed by us.

Brickmaking.

The first film showed the process of manufacturing hand-made bricks at the Daneshill Brickworks, Basingstoke. Mr. C. E. Varndell, F.S.I., A.R.I.B.A., in explaining it, said that as a lecturer in technical subjects he welcomed the use of these films in the A.A. School as an additional means of illustrating the lectures, and in his opinion they will prove of great value in the teaching of various subjects. It was essential to the proper understanding of the different trades and materials to know not only why, but how a thing is done. And this cannot be more clearly shown than by the pictures of an operative at the actual work. He frequently came across instances in the preparation of materials and methods of construction which were difficult to explain or illustrate by diagram. And upon these points the student may be left in doubt, unless he has an opportunity of viewing the actual operation—an advantage denied to many by reason of distance or time. This doubt in the student is overcome by the use of these films, which convey knowledge by vision. Sense of sight is more retentive than sense of hearing.

Owing to mechanical difficulties it is not possible to stop the picture at any point for more than twenty seconds, and the lecturer may not always synchronise with the picture. This difficulty can be overcome by the use of slides.

A brickfield is not laid out in a haphazard way, but all possible means are taken and natural conditions considered to effect economies in time and labour. It is, as in the case illustrated, usually arranged on sloping ground, with the works and railway at the lowest level. And the clay bed is worked up the slope, so that all weight carrying is downhill.

The film commenced with a view of the approach to the brickyard, including the offices erected from designs by Mr. Lutyens from bricks made on the site. Then came the drying ground and the moulding sheds. Men were shown wheeling clay to the weathering ground for the frost to break it up and assist its preparation for next season's moulding and burning. Preparatory to clay getting, which is undertaken in the autumn, the top soil is removed, and large masses of brick earth are detached by underdigging and levering out at the top with shovels. Water may also be poured in to assist cleavage.

The film then depicted the process of mould making. The mould is made of a larger size than the brick actually required to allow for a shrinkage of about one-tenth in burning. Great care must be exercised to get the surfaces square. Beech is utilised for moulds, as it is hard, smooth, and non-absorbent. Corners are bound with iron to prevent splitting, and all rough edges are taken off so that the strike will work smoothly. The clay is tempered by digging and watering to render it workable for the moulder. The inside of the mould is sanded to prevent the clay sticking to the sides. The clay is thrown into the mould, and the superfluous stuff is cut off with a wire strike. The brick is then turned out on to pallets and laid in a hack barrow. The latter is fitted with springs, so as to lessen the vibration and any possibility of alteration in the shape of the brick.

The bricks are dried in hacks, *i.e.* parallel banks, for three of four weeks, according to weather. They are placed eight courses high on edge, with spaces in between for air, and are covered in with a light wood roof to protect them from inclement weather and too rapid drying. After some days they are turned and reversed to ensure equal drying. When the drying process is complete they are wheeled to the kiln, where they are so spaced as to allow the heat to get to all faces. Special-shaped bricks are placed in the centre, where they will receive equal burning. The burning and shrinkage of a brick varies according to its position in the kiln: those nearest the centre are more thoroughly burnt. Scotch kilns hold 20,000 to 80,000 bricks. They are built with thick walls, so as to retain the heat, and roofed to keep out the weather. Doors at each end allow of the stacking being done, and the fire holes are at the sides for stoking. The stacking of the bricks is so arranged as to leave continuous flues or spaces from the fireholes to the top. When the kiln is full, the ends are bricked up, the joints smeared with clay so as to keep in the heat, and the top covered with loose sheets of iron for the same purpose. For the first two or three days the firing is gradual, to drive off the moisture in the bricks. Next the fires are run for two or three days to their full capacity, and then gradually damped down for the bricks to cool slowly. When eight or nine days later they are removed out of the kiln, they are sorted into qualities, and then stacked ready for despatch.

The final operation shown on the film was the loading on to railway trucks, in which the bricks are well packed in hay to prevent damage in transit.

Portland Stone.

There next came a film, or rather a part of two films, showing the stone taken from the Bath Stone Firm's quarries at Portland to its position on the Australian Commonwealth Building, recently commenced in Aldwych.

First there was thrown on the screen a reproduction from a ½-inch scale drawing of one of the arches in the Aldwych front of the Commonwealth of Australia Building. The general idea of the film was to illustrate the various processes through which this stone passes on its way from its position in the whitbed stone-bearing strata at the Portland quarries to its final position in the Commonwealth Building. The film had to be cut down to the twenty minutes allotted to it. Consequently, some of the quarrying processes, and the removal of the overburden by blasting and other methods were not included, but they form part of the complete film.

The opening portion of the film shows the strata from the surface of the land to the bottom of the quarry. Starting from the grass, Mr. Christopher Mitchell, the lecturer, explained that there came first 17 feet of rubble, consisting of soil, broken stone, and clay. This is generally removed by pick and shovel, and wheeled back on to the spoil heap on the land which has already been quarried out. Next (omitting sub-divisions) there comes 12 feet of cap, which is of a hard and almost flinty nature; it is very uneven in texture, and valueless except for dumping into the sea to make a breakwater. It is always removed by being blasted with a high explosive known as ammonite. The next portion of the overburden is the roach, which is here 11 feet high. This roach is a material very similar to the whitbed, except that it is full of shells and fossil remains. It is not greatly used, being only suitable for such work as dock walls. Then comes the top of the whitbed, here 9 feet high; and then immediately below that comes the basebed 5 feet in height, and then we have the bottom of the quarry, below which there is nothing for 200 feet or 300 feet but flint beds. The basebed, whitbed, and the roach are all salt-water deposits, while the cap and rubble are fresh-water deposits.

The film having carried the audience to the bottom of the quarry, showed a piece of the whitbed just loosed from its bed, waiting to be lifted to the quarry bank by the steam crane, and squared or scappled ready for the market. Gullies or natural crevasses, locally known as "southers," run all through the island from north to south. Sometimes they are only 2 inches to 3 inches in width, and sometimes they are wide enough for a man to crawl into. All the quarrying operations are regulated by these gullies or joints. Running at right angles with them are smaller crevasses, or "east and westers."

The film next showed the quarrymen squaring or scappling the blocks ready to be sent away. This is only done somewhat roughly, and no attempt is made to keep all the arrises or corners. The tools employed in the scappling are the big kevil, small kevil, and the axe. The first is used for spalling off large pieces; the second for picking the face down approximately level, and the work is then fined up with the axe. The work is somewhat arduous, and as the big kevil may weigh anything from 18 lb. to 24 lb. it requires a man of considerable strength as well as skill to use it effectively.

Practically all the getting and squaring of the stone is done at so much per cubic foot. The men work in gangs of about four to a hand crane, and twelve to a steam crane; and the money earned is divided equally between them. Generally speaking, the blocks of Portland stone are not made to exceed 160 cubic feet in size. A block of 160 cubic feet weighs nearly twelve tons, and that is the limit of the size which can be dealt with by the crane and railway gantries at the loading depôt at Portland.

When a piece of stone has been lifted from the bottom of the quarry to the bank, and the waste which has to be removed in the process of squaring is too much to be taken off by the big kevil, a V-shaped groove is cut into the block and this groove is lined with thin strips of iron called "scales." Small wedges are then driven in, and the waste is somewhat easily split off. The stone is then squared in the usual way with the kevil, and finished with the axe. This method of cutting the stone with scales and wedges is very largely employed in the quarrying process. After the rubble, cap, and roach have been removed from the stone the whitbed rock is then cut into suitable lengths and sizes by this "scales and wedges" system—sometimes as many as a hundred or more wedges being employed in one operation.

After the blocks are squared they are examined by a representative of the Quarry Company, who inspects the blocks, first for defects, and then enters in his book the length, width, and thickness of each. Every block is then numbered, and its cubical contents painted on it. And cut in with the axe are two marks, one being the trade mark of the firm to whom the quarry belongs and the other being the mark of the quarrying gang who quarried the stone.

The blocks are then placed in a stack until required for the market, when they are loaded on to heavy wagons with solid wheels, and drawn out of the quarry by traction engines either to the masonry works or to the loading depôts.

The frame or grit saw has been employed for a great number of years in all stone-cutting works. The method is that steel blades are fixed in position in a cast-iron frame, which is then swung backwards and forwards by machinery. Water and coarse grit (which is obtained from Bridport) are then fed into the cut, and the steel blade, which is not toothed in any way, rubs the grit on to the stone, and cuts it away at the rate of 6 inches per hour. The water which carries the grit into the cut comes out at each stroke of the blade, and brings with it the stone which has thus been cut away. It is quite possible to have twelve or fourteen blades in the frame at once, and this is done when stone slabs of 3 inches thick are required. The chief modern improvement in these saw frames is to have them hanging like a short pendulum, which causes the frame to lift at the end of each stroke and allows the grit to get under the blade more easily.

The carborundum saw is a circular steel blade with pieces of carborundum or emery fixed at its outer edge. The block of stone to be cut is placed on a moving bed, which travels towards the revolving saw blades. Water is copiously supplied, and this prevents heat being generated by the cutting process.

No up-to-date mason's yard is quite complete without a "diamond" saw—an expensive tool costing from £700 to £800. On this, instead of the carborundum, small diamonds weighing about ⅓ carat (which have been electrically welded into small sockets) are fixed. The speed of the blade is about 400 revolutions to the minute, and it will cut through a block of stone at the rate of 5 inches per minute. The average life of the diamonds is eight months, but sometimes they last eighteen months.

The stone then passes to the machines for cutting mouldings or for preparing plain faces on the stone. The chisels are solidly fixed in a heavy cast-iron frame, and the block of stone is placed on a travelling bed, which carries it forward against the cutting edge of the tool, and then travels backward at an increased pace to take the next forward stroke. Immediately the backward movement is completed the machinist lowers the chisel slightly, and is then ready for the next forward movement.

In order that the worked stone may be so prepared that it exactly fits its place on the building, each stone is worked carefully to a pattern (called a mould) cut from stout sheet zinc. When this has been applied and the exact size and shape have been scribed in the work of cutting can be commenced.

The latter operation was shown with considerable minuteness on the film.

Sometimes Portland stone is put into a building with the chisel marks left on the face, but the general custom is to have all traces of the chisel removed by rubbing the stone with water and sand. A coarse grit is first used in order to remove all marks of the chisel, and a fine sand is then employed for bringing the face of the stone to a fine, close surface. In order that the face, corners, and edges of the worked stone shall not be damaged by lifting them with chains, the Lewis bolt is in general use both in masons' yards and on the building.

The concluding portion of the film dealt with the last stage of the process, namely, the putting into the building of the stone which had been seen quarried, sawn, worked, and rubbed. The bedding material consists of a mixture of lime putty, which has been run into the bin a month before, in order that there shall be no risk of blowing after it is in its work. With this lime putty there is a good quantity of Portland stone dust, with a small admixture of Portland cement. The lime putty makes the bedding soft or "fat" enough to be spread easily, and the Portland cement hardens the mixture after the stone is bedded. The block of stone is lowered and accurately fixed. Folding wedges are placed between the timber centreing and the soffit of the stone just fixed. The centreing can be easily removed by easing these wedges, and the arch thus gradually takes its own weight.

FERRO-CONCRETE.

As an illustration of ferro-concrete work, a part of a film was shown representing the manufacture of piles for foundations by the Considère Construction Co.

The lecturer, Mr. A. Gilbert Scott, confined himself to pointing out the various processes. First, a diagram was given to explain the principle of construction. The piles are made actually on the site of the building in which they are to be used, as it is easier to cart the various materials to the site than the finished piles; this also prevents any chance of damage to the piles in transit.

The first part of the film showed the winding of the wire for the spiral reinforcement. This arrives in coils of about 2 feet in diameter, and is placed on a large drum and wound off, after passing round a smaller wheel to create tension, on to a long wooden drum, which is the size and shape of the finished pile. When this is complete the wire is cut and the coil springs loose from the drum to about an inch larger in diameter, and is then drawn off, looking like a large spiral spring. This is slipped on over a skeleton of the pile composed of eight vertical rods, about ¾ inch in diameter, which are held in position on a temporary centreing of discs of wood. The coil is spaced at regular intervals by means of a gauge, and wired to the vertical rods with pieces of thin wire. The coils are closer at the head of the pile, so as to stand the concussion of driving, as these piles are driven direct on to the concrete, no pad being necessary for protection. When the iron shoe or point of the pile is hooked on and wired the reinforcement is complete.

This is now placed in a wooden mould. Mr. Gilbert Scott pointed out that it is not allowed to rest on the bottom of the mould, but is slung so as to hang about 1 inch above it, thereby allowing the concrete to pass underneath and protect the reinforcement. Concrete is then grouted into the mould, care being taken to thoroughly work it into the centre of the pile. These piles are made octagonal in shape, and to complete the octagon it is necessary to insert triangular

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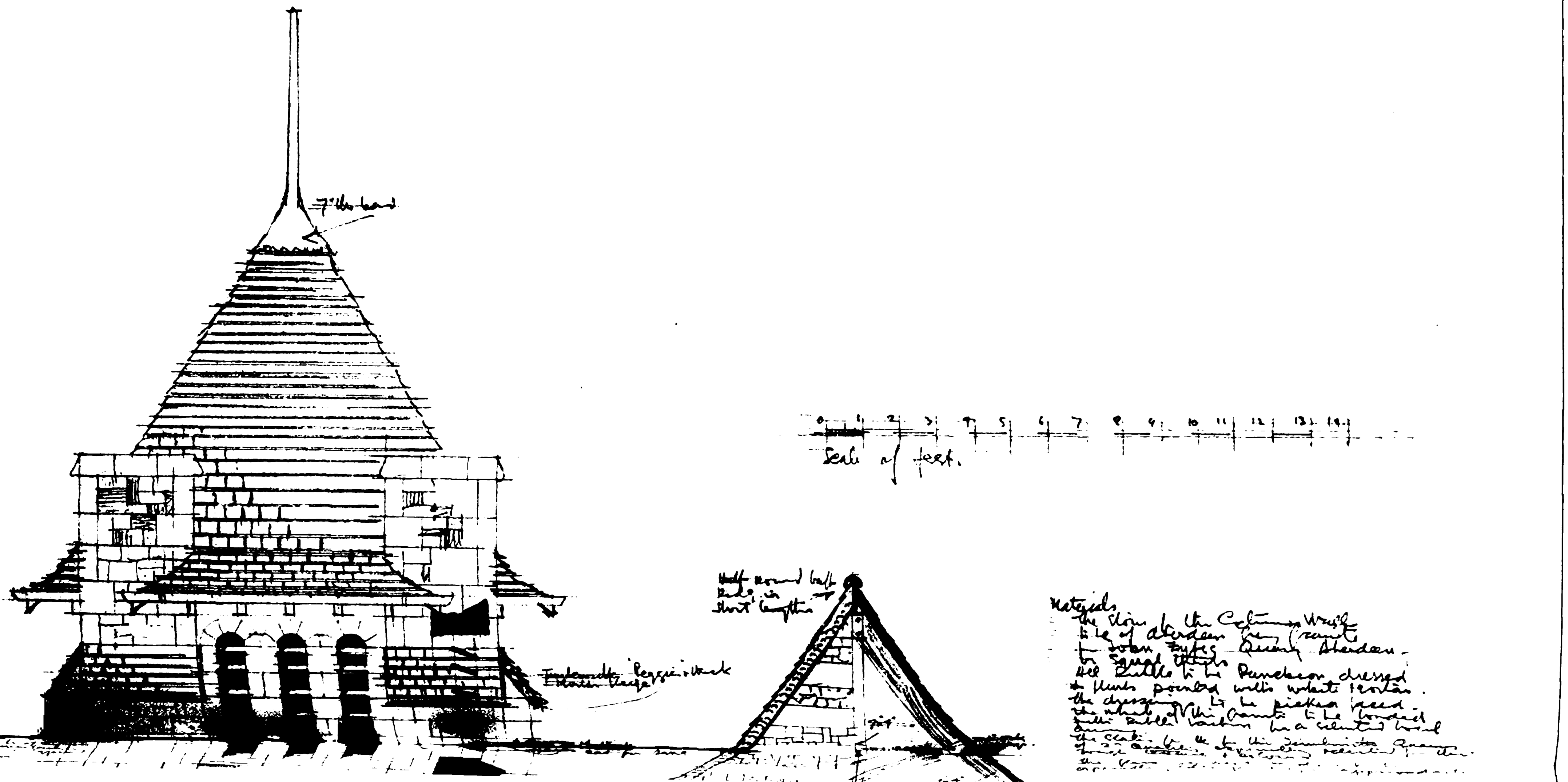
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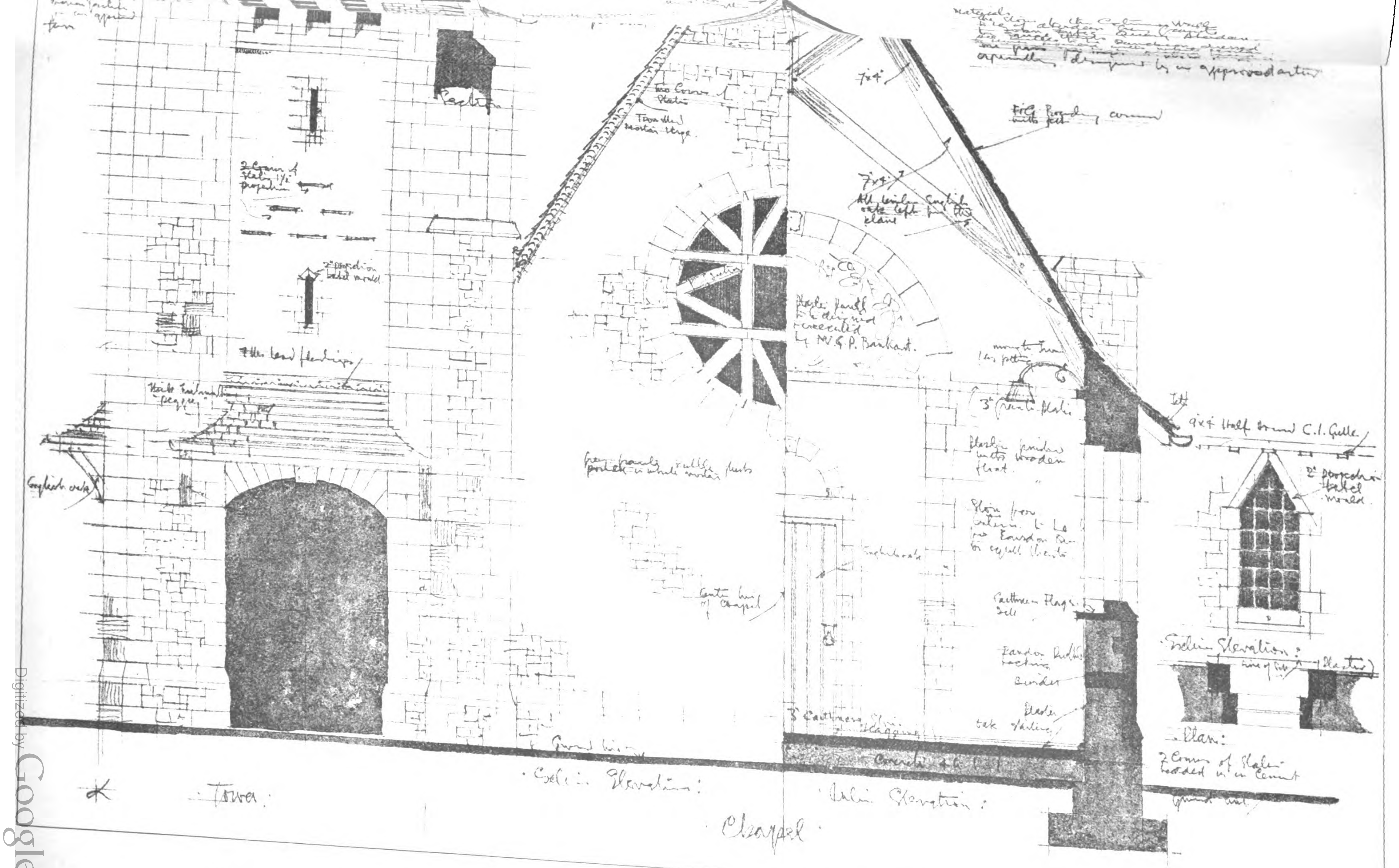

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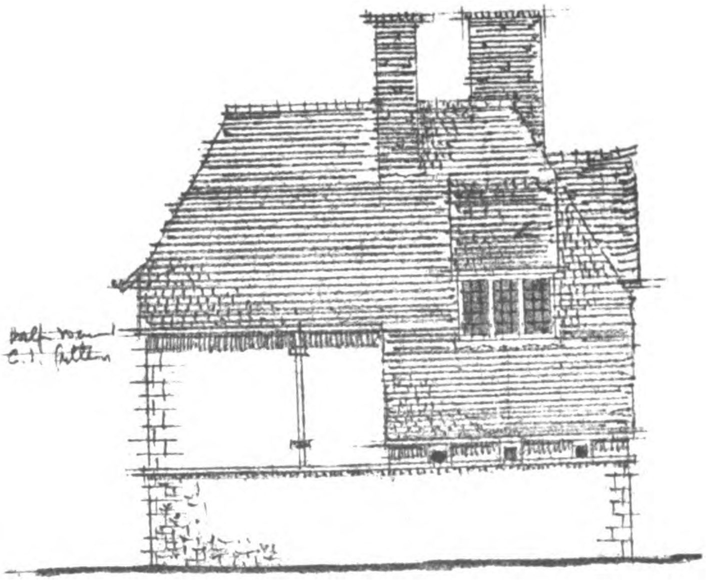
Ground line
Ground line
English oak
Lead flashings
Concrete
7x4
7x4
All timber English oak left from the plane
Stained glass designed & executed by Mr G. P. Bankart.
3" granite slabs
9x4 Half round C.I. Gutter
2" Doorcasing label mould
Caithness Flags Sill
Binder
Plaster
Line of roof
Plaster
2 Courses of Slates bedded in Cement
Centre line of Chapel
3" Caithness Stone flagging
Two courses of slates
Toothed mortar edge
2" projection label mould
Plaster finished with wooden float
appropriately designed by an approved artist

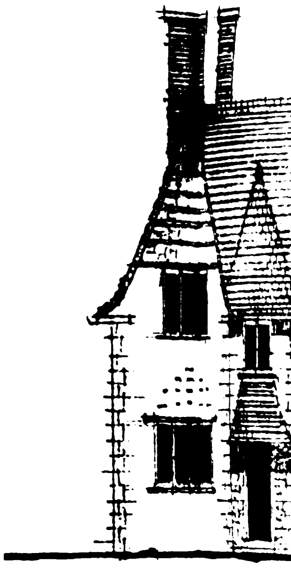
Whitley and Monkseaton Urban District Council.—Proposed Cemetery Buildings: Details of Chapel.

Mr. Edward Cratney, Licentiate, R.I.B.A., Architect.

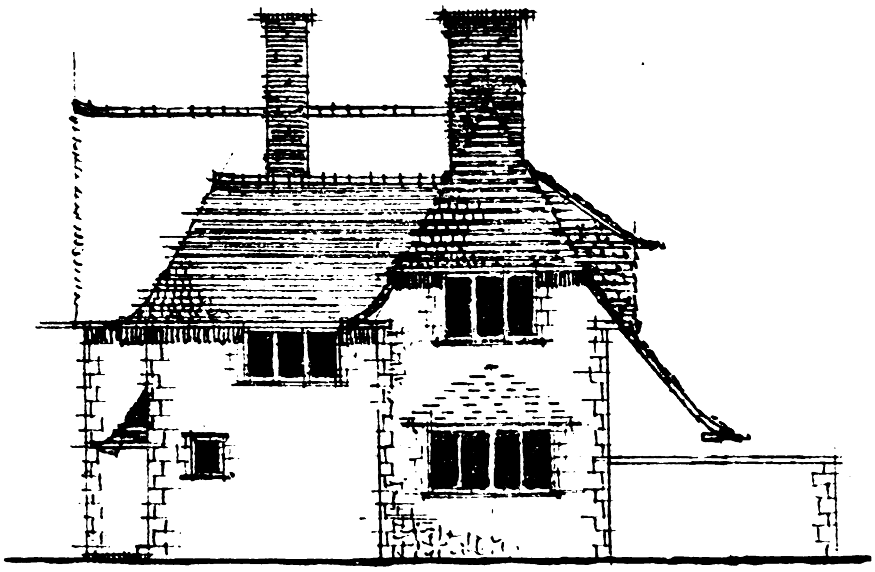
Ink-Photo. Sprague & Co Ltd 69 & 70, Dean Street, Soho, W.


half round C.I. Gutter

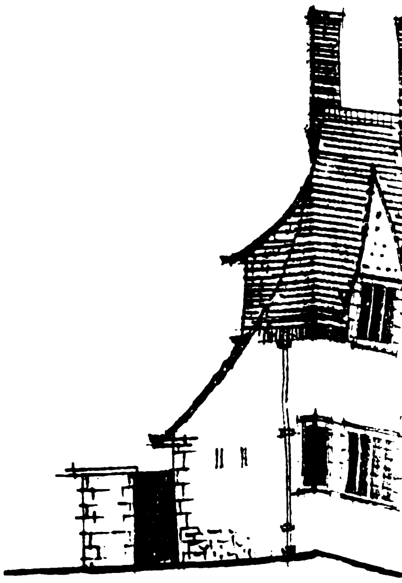
· North Elevation



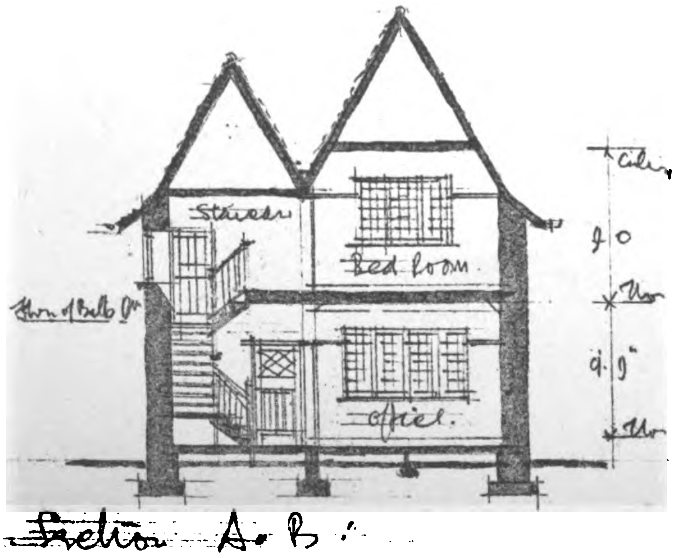
South Elevation



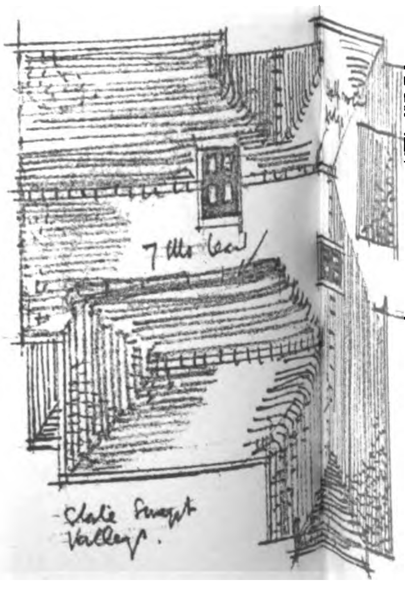
East Elevation :



West Elevation :


Staircase
Bed room
Office.
Line of Bells
Ceiling
9 0
Floor
9. 9"
Floor

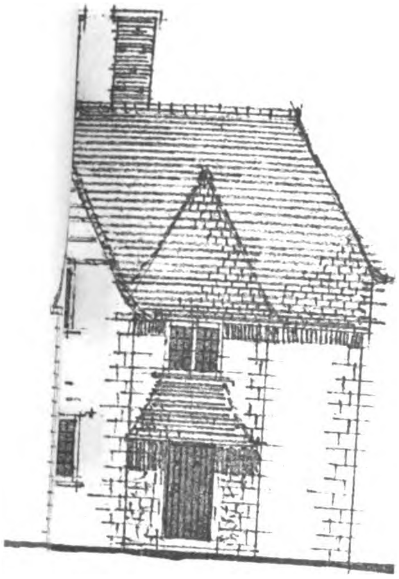
Section A. B :

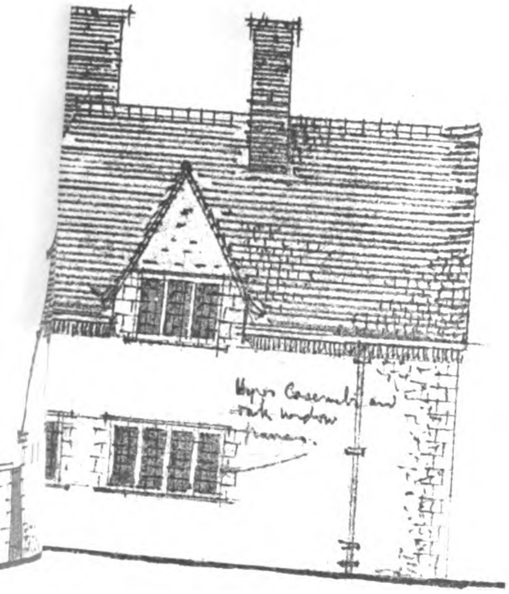

7 lbs lead
Slate Swept Valleys.

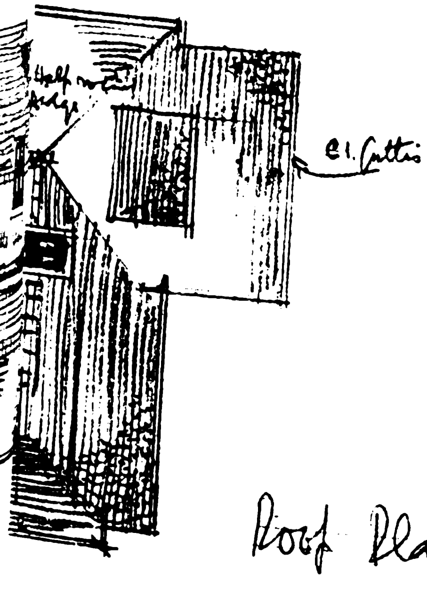
WHITLEY AND MONKSEATON URBAN DISTRICT COUNCIL. PROPOSED CE

MR. EDWARD CRATNEY, Li R.I.B.A. Arch

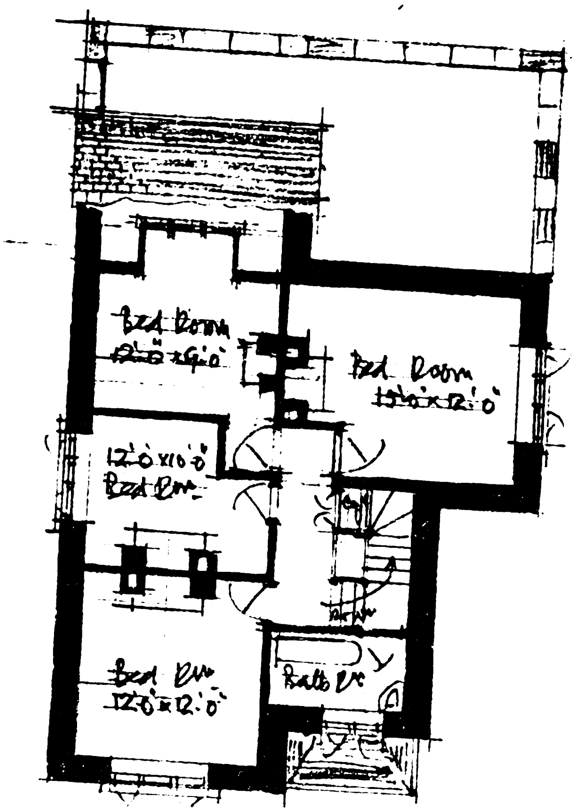
6th Mar: 13th 1914.



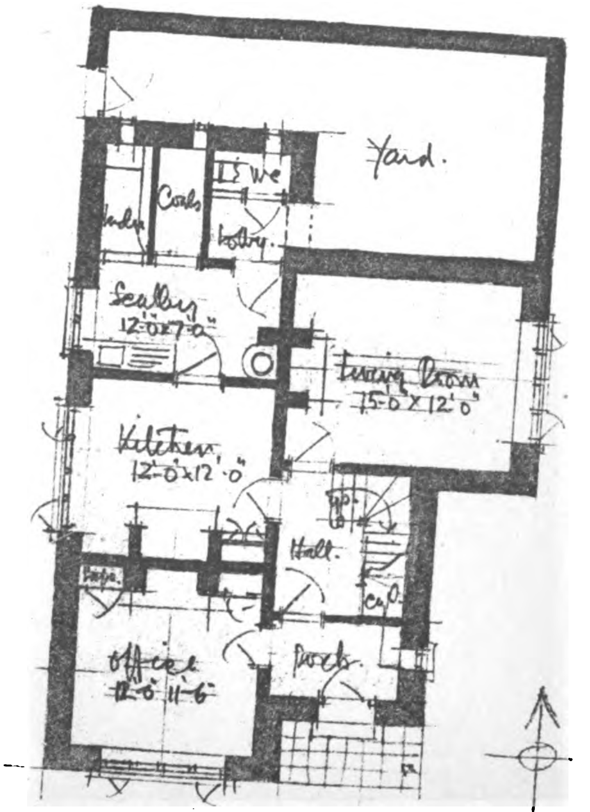

Wyns Casements and oak window frames


Half round ridge
C.I. Gutter

Roof Plan


Bed Room 12'0" x 9'0"
Bed Room 15'0" x 12'0"
12'0" x 10'0" Bed Rm
Bed Rm 12'0" x 12'0"
Bath Rm

· First · Floor · Plan :


Yard.
E.S. WC
Coals
Larder
Lobby
Scullery 12'0"x7'0"
Living Room 15'0"x12'0"
Kitchen 12'0"x12'0"
Hall
C.O.
Office 12'0" 11'6"
Porch

Ground · Floor · Plan :

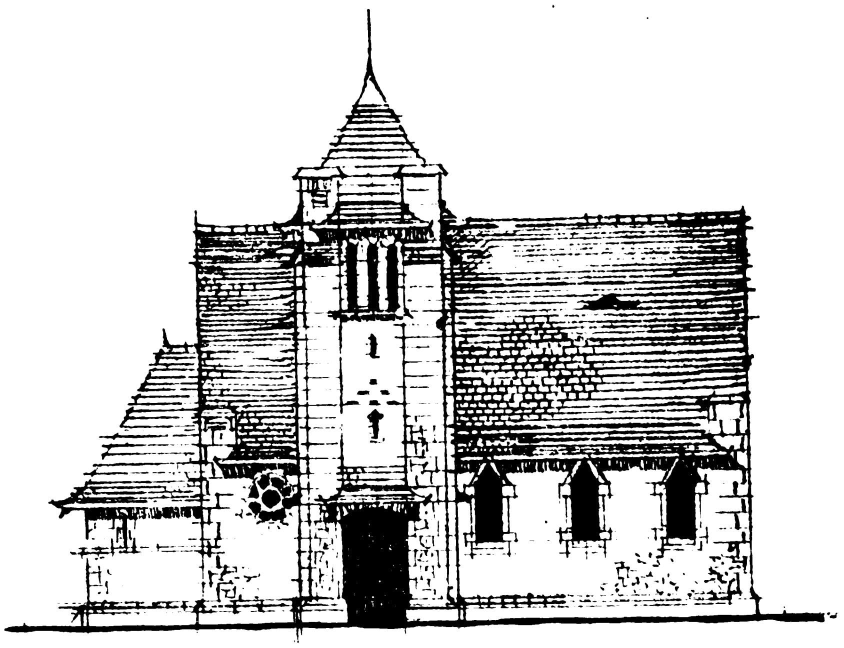
0
5
10
20
30
40
50

Scale of feet

"INK-PHOTO" SPRAGUE & Co LTD 68 & 70, DEAN STREET, SOHO, W.

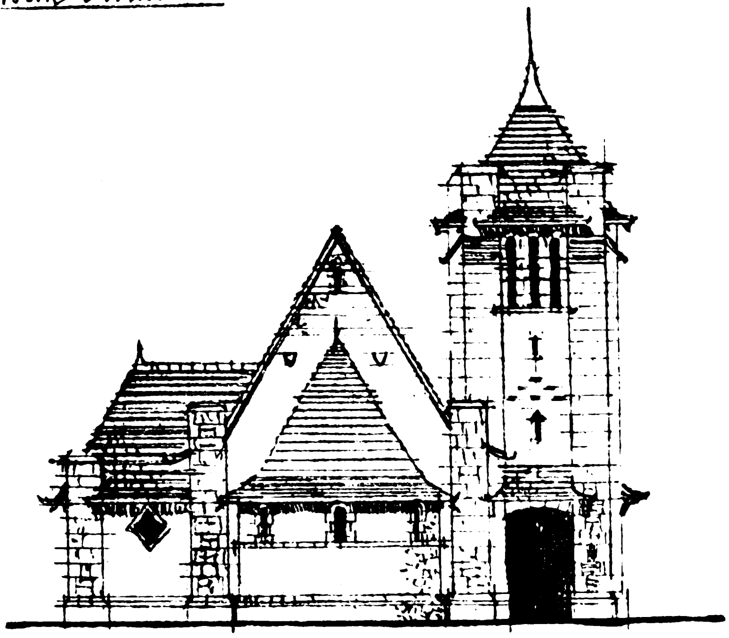
ROPOSED CEMETERY BUILDINGS: ENTRANCE LODGE.

te, R.I.B.A, Architect.

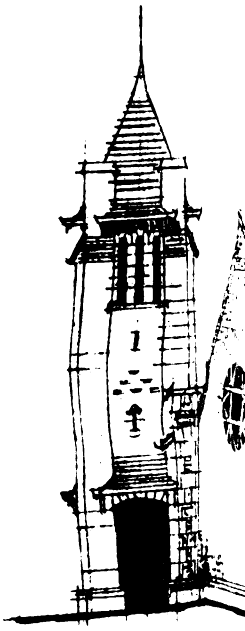


North Elevation

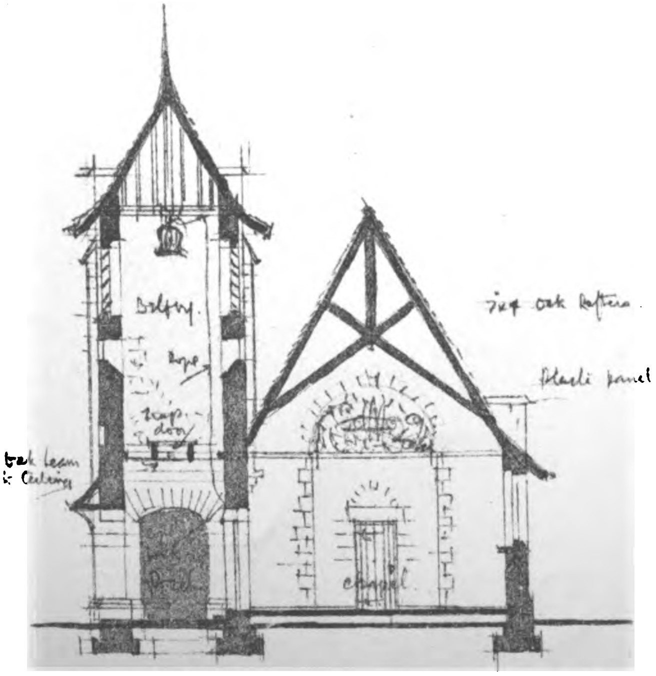
· South Elevtn



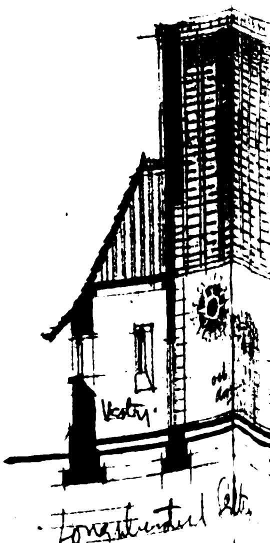
· East Elevation :



· West Elevtn


Belfry
Rope
Trap door
Oak beam & Ceilings
7x4 oak rafters
Plastic panel
Chapel

Cross Section

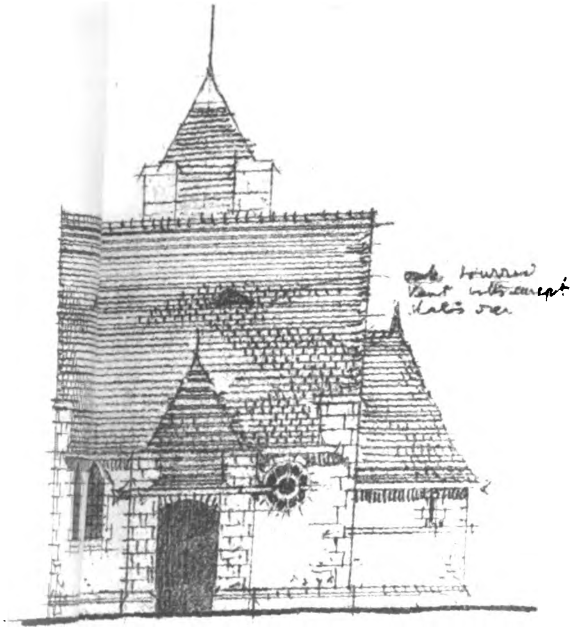


Longitudinal Sect

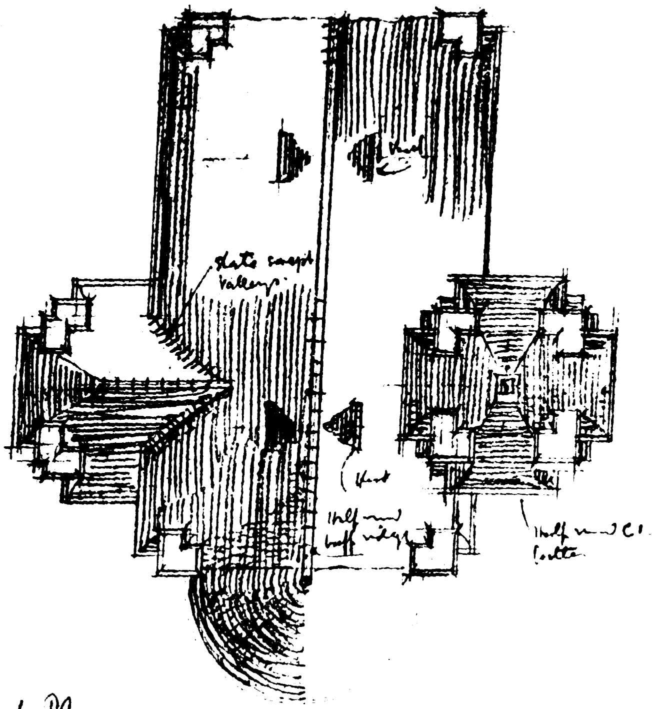
WHITLEY AND MONKSEATON URBAN DISTRICT

MR. EDWARD CRATNEY

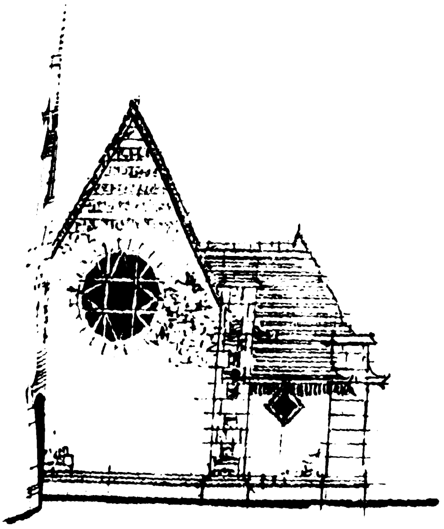
Mar. 13th 1914.

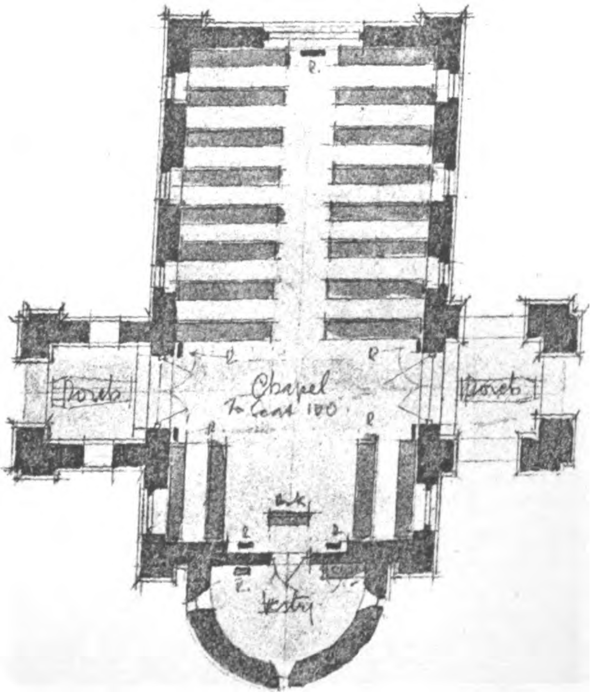

Oak louvres
Vent with swept
slates over

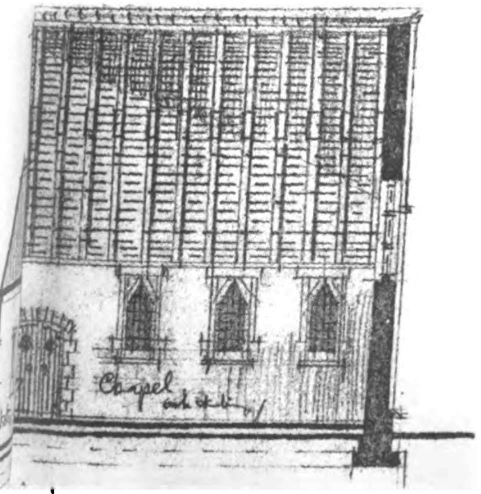
ide.


Vent
Slate swept
valleys
Vent
Half round
buff ridges
Half round C.I.
Gutter

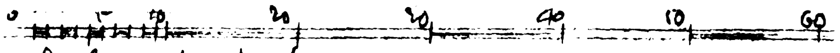
Roof Plan




R.
Porch
Chapel
To seat 100
Porch
Vestry



tion.

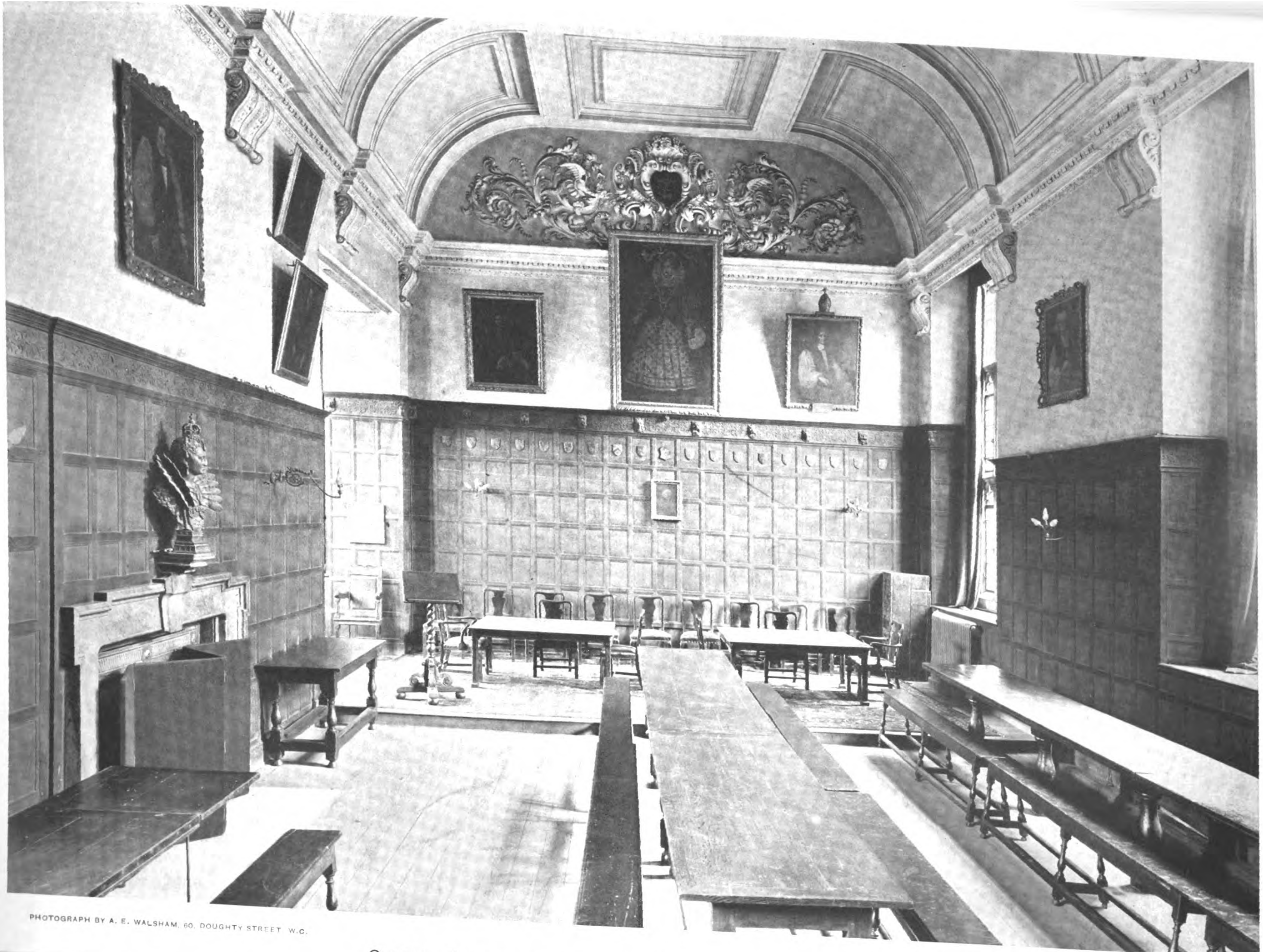

0
5
10
20
30
40
50
60

Scale of feet

INK-PHOTO SPRAGUE & Co. LTd 69 & 70 DEAN STREET, SOHO, W.

UNCIL.—PROPOSED CEMETERY BUILDINGS: CHAPEL.

centiate, R.I.B.A., Architect.



PHOTOGRAPH BY A. E. WALSHAM, 60, DOUGHTY STREET W.C.

OXFORD COLLEGE SERIES. No. 132. JESUS: DINING HALL.

Sprague & Co Ltd., 69 & 70, Dean Street, Soho, W.

lengths of wood at the top when the pile is half filled with concrete. The grouting is then completed, and the top flushed off with trowels.

After two days the sides of the mould are removed so as to allow free circulation of air around the pile, and after nine days it is very gently rolled away, numbered, and added to the stack. It becomes ready for driving after about two months of ordinary summer weather.

The final section of the film gave a general view of the site, which was almost entirely covered with the piles and moulds. The piles here used were about 15 feet long, but they have been made up to 75 feet long, and can be even longer if necessary. In the job the piles were being used for foundation work. They were driven in groups of nine, with about 2 feet between each pile; a grillage was then placed on top of these, and the building is carried on this.

The complete film is being made showing the driving of these piles and the fixing of the grillage.

Joinery.

Some phases of joiner's work with modern machinery at Messrs. Elliott's works, Reading, were selected out of a film about a mile in length. It depicted the making of a hard wood door. In work of this sort, said Mr. Philip E. Webb, A.R.I.B.A., who acted as lecturer, everything is done in one large shop under one roof, thus minimising handling, labour, &c. The numerous stages of production were then illustrated from the moment of the selection of the wood by the foreman to its transformation into the finished article.

Plaster Work.

The next film showed decorative fibrous plaster work being made for the new Cunard liner *Aquitania*, at Messrs. Jackson & Son's works.

The different pieces were a fibrous plaster curved coffered ceiling, tympanum panel on the wall, and a modillion block cornice and frieze supporting the tympanum panel. First was seen the curved drum for the ceiling, and the blocks which had been previously made to the correct curves from other moulds, and which form the sunk panels, being placed in position. The mould being ready, the cast off the mould is made (1) by covering with plaster; (2) inserting the canvas; and (3) strengthening with wood laths and covering the laths with the canvas. The cast, when set sufficiently hard, is lifted off the model, and the enriched mouldings in the coffered panels are inserted with the mitre leaves. The mouldings are bedded on with plaster and canvas at the back. The cast then only requires to be screwed up to wood grounds, fixed in position, and the joints made good with plaster and canvas.

The second series of films exemplified the process of clay modelling. The ground on which the clay was to be modelled was shown being prepared, and plaster mouldings, which had been already made to the correct curves, were fixed on temporarily. The ground is then ready for the modeller, and he was seen first roughing out the modelling and then with the finished model. This model afterwards had a gelatine mould put on it, and a fibrous plaster cast made from the gelatine mould.

Another series of films showed the construction of a cornice. The bed of the cornice is first run in plaster, with a prepared runner made of wood, with the section cut in thin sheet-iron. After the section is properly run the enrichments, which have already been made from other moulds, are inserted into each moulding. The model is painted with two coats of shellac, to prevent the gelatine sticking to it, and is then covered with thin sheets of clay to represent the thickness of the gelatine which has to go on it. These sheets of clay are then covered with plaster, canvas, and wood to make a strong outer case for the gelatine. The clay is then removed, and hot gelatine is poured into the case on to the model. When the gelatine has cooled, the case is lifted off, the gelatine mould is greased, and the fibrous plaster cast of the cornice is made in the mould with plaster, canvas, and finally strengthened with wood battens. When set hard it is lifted out of the mould. It is afterwards fixed with screws through the top and bottom moulding into wood grounds fixed on the ceiling and wall.

Owing to the lateness of the hour the sixth and final film showing the laying of a "Kleine" floor was not given.

In connection with the above, we might here mention that the British Westinghouse Electric and Manufacturing Co., Ltd., propose holding at 179 Wardour Street, London, W., a special exhibition of cinematograph and theatrical supplies and apparatus from March 16 to March 23 inclusive.

GLASGOW INSTITUTE OF ARCHITECTS.

The annual general meeting of the Glasgow Institute was held on the 4th inst. in the rooms at 39 Elmbank Crescent. Mr. Alexander N. Paterson, M.A., A.R.S.A., F.R.I.B.A., President, occupied the chair.

The Secretary, Mr. C. J. M'Lean, read the report of the Council, in the course of which it was stated that the membership included 116 Fellows, 90 Associates, 31 lay and 25 student members, a total of 262, as compared with 252 last year. A Special Committee, it was added, had been considering the best means of further increasing the student sections of the Institute by strengthening the connection between it and those entering the Glasgow School of Architecture. Arrangements had not been completed, but it was anticipated that a scheme would be placed before the Council shortly. The Council had continued its policy of protesting against the placing of architectural works of importance by public bodies in the hands of their officials as at once detrimental to the public interest and unfair to independent architects. The matter had been brought to the notice of Govan School Board and the Glasgow Parish Council during the session.

Mr. Paterson, the President, in moving the adoption of the report, said that the Institute had every reason to be gratified with the record of the past year. It showed a continued increase both in numbers and influence. Year by year they were steadily approaching the ideal of including in their ranks every practising architect with the necessary qualifications. There were now very few in Glasgow who were not members. In the wide area which constituted their province under the territorial scheme of the Royal Institute of British Architects they had a very large number of members, nearly 25 per cent. of their total being outside the city. These members were distributed over the whole of the West of Scotland. As regards the influence of the Institute, they had gratifying evidence during the past year that the benefits of their advice and assistance had been recognised where in former years it was perhaps not so appreciated. In this part of the country they had not much to complain of, with one or two flagrant exceptions, as regards the employment by public authorities of unqualified, or semi-qualified, officials in carrying out architectural works of importance, and where the work was thrown open to competition it seemed that an approach to the Institute for guidance in drawing up the conditions and selecting the best design was steadily becoming recognised as the best course to pursue. The best in this case did not mean solely or even mainly the best in the interests of the architects, but rather as regards the artistic quality and the general efficiency of the result secured in the building erected. Architects individually and as a class were a most altruistic section of the community. They might be jealous of each other, but they were much more jealous in regard to the high standard of their own work and of architecture generally, and they endeavoured to raise its standard quite outside and beyond the demands of their clients, who in most cases were little aware of the amount of labour that had gone to the study and perfecting of the designs for their buildings. It was by making it clear to the public generally, by their conduct as individuals and in their corporate capacity, that their interest was in the advancement of the art of architecture, and the better service of the community through its means, rather than in self-seeking, that they had the best hope of extending and consolidating their influence. The advice which they had proferred to the Corporation of Glasgow in the matter of the Municipal Buildings extension had been accepted, and again in the case of Cathedral Square. Was it too much to hope that the appeal recently addressed to it in connection with the thorny subject of cross-river traffic would also be listened to?

The report was adopted.

Messrs. Andrew Robertson, Thomas M. Lunan, John Fairweather, and John Watson were elected as new members of Council.

THE ACTION OF TOWN AIR ON DECORATIVE WORK.*

(Concluded from last week.)

Sulphurous anhydride, or sulphur dioxide, SO_2, is the first product of combustion of coal or gas. With water it forms sulphurous acid, H_2SO_3, which, in common with other acids, has a corrosive action on metallic decorations, but occasions no blackening like that from hydrogen sulphide. Its commercial use for bleaching, however, points out a

---

*** Abstract of a Paper read before the Paint and Varnish Society on Feb. 19 by Dr. Rideal.**

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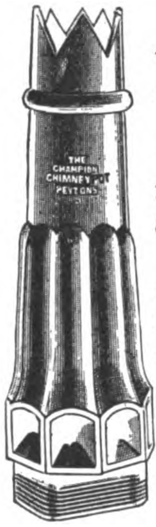
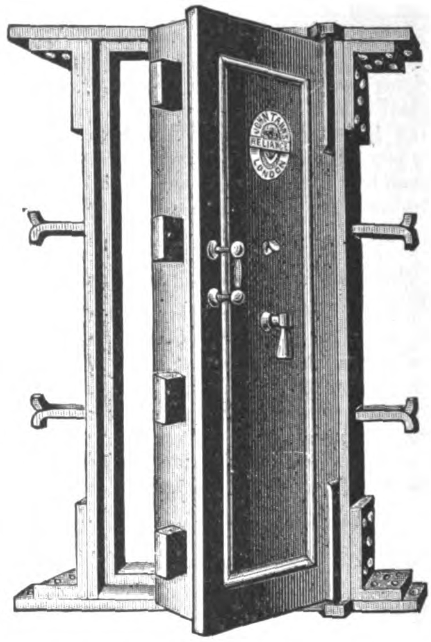

THE CHAMPION CHIMNEY POT PEYTONS

The principal feature of the CHAMPION CHIMNEY POT is its magnificent updraft. For many years the "Champion" has been specified by LEADING ARCHITECTS, and has sold in large numbers. Architects speak highly of its SMOKE-CURING and VENTILATION qualities, and admit it to be of excellent design. Catalogues with views and particulars on application to The Patent Chimney Pot Co., Ltd., 105 Albion St., LEEDS.



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GLASGOW:—79 West Regent Street. MANCHESTER:—33 Arcade Chambers, St. Mary's Gate.

property that to us is often dangerous, its power of paling or even discolorising a number of colouring matters.

Sulphuric acid, H_2SO_4, is the final product of oxidation. In this last stage any traces of sulphur in air reach their least detrimental form, since they do not bleach or discolour, and also they are readily fixed by basic materials, as by the lime in the plaster of walls and ceilings. Through this absorbent action the air of rooms is often more free from sulphur than the atmosphere outside. A great deal of the air of rooms is drawn through the porous brick walls, which naturally absorb sulphuric acid, any remainder being taken up by the plaster of ceilings and interior walls.

In the absence of such basic absorption, the free acid, of course, attacks metal work, which must consequently be protected by paints or varnished.

The greater portion of the acids of smoke is, of course, long clause to the effect that "the outside wood and iron removed from the air of towns by rain and snow. Fountains have also a marked purifying effect in scrubbing the air from these acids.

A great number of materials used for decorative and constructive work are basic, and neutralise the condensed acid without the use of soap or alkali. Much havoc has been caused by these acids on imperfectly protected iron, and on stonework and masonry of our public buildings, yet still no systematic steps to combat the evil have been adopted in this country. The protective coatings for external ironwork are well known to the members of this Society; their absence soon develops art into ugliness and a decay which even endangers the safety of the structure. All basic building stones are similarly attacked, marbles and dolomitic limestone (Westminster) with rapidity, and the oolitic and Portland limestones (St. Paul's) only to a lesser degree. Prevention is not always better than cure, but in America the new public buildings are being protected from corrosion so soon as they are erected, and ironwork for reinforced concrete is not allowed on the job without its cement protective to ensure the absence of rusting and corrosion, whilst the early stages of the erection of the building are in progress.

The lime and basic distemper on walls and ceilings plays a very important part in this acid neutralisation. In one case 50 lb. of carbonate of lime as whitewash were used to clear-colour a room; this is capable of fixing very nearly 50 lb. of sulphuric acid, and this power would not be exhausted for twenty-five years with gas used in the ordinary way and as at present manufactured.

C. Witz long ago noticed the decolorisation of red lead by the sulphurous and sulphuric acids in the air.

Sir A. Church investigated the action of sulphur acids on mural paintings; and noticed the gradual conversion of the film of calcium carbonate into gypsum, expanding from ten volumes to twelve, and losing all its binding power. Even the painting ground—that is, the lime plaster beneath the picture—is often affected and rendered unsound.

Lighting in Relationship to Internal Decoration.

The nature of the illuminant, apart from the chemical by-products of air in a room, affects the painter in two distinct ways.

(1) The direct photo-chemical action of the light on the paint or varnish. This may have a destructive effect.

(2) Our appreciation of the colours, or colour scheme, in a room is changed by the nature of the light.

It must be realised that only a very small amount of the energy supplied to the artificial illuminant is emitted as light. The following table given by Dr. Drysdale shows how inefficient the usual sources of artificial light really are:—

Energy Expended in Per Cent. of Light (Visible).

Candle	0.1
Oil	0.2
Gas	0.2
Incandescent gas	1.0
Carbon glow	2.0
Metallic filament	10.0
Nernst	5.0
Arc	20.0
Vacuum tube	40.0
Firefly	99.9

Nearly all the remaining energy is emitted as ultra-violet light, very active photo-chemically, and as infra-red or heat rays.

Photo-chemical activity is practically proportional to the intensity of the violet and ultra-violet rays, as is borne out by the experiments of Russell and Abney, Hartley and Toch. The former investigators say (1888): "Our experiments show that the rays which produce by far the greatest changes in a pigment are the blue and violet components, and that these for equal illumination predominate in light from the sky; whilst they are less in sunlight and in diffused cloud light, and are present in comparatively small proportion in artificial lights usually employed in lighting a room. The experiments have also shown that about a century of exposure would have to be given to water-colour drawings in galleries lighted as were those at South Kensington (1888) before any marked deterioration would be visible in them, if painted in any but the most fugitive colours, and that where the illumination is of the same quality as that of the gas light and of the same intensity as that employed in our galleries, an exposure to be reckoned by thousands of years would have to be given to produce the same results. We have not taken into account the action which might arise from the products of combustion where gas light is the illuminant and which our experiments so far have shown to have but a trifling effect." The same investigators noticed that crimson lake was slightly bleached, madder lake became a little redder, and Antwerp blue and Prussian blue a shade greener after three weeks' continuous exposure to a gas flame in a small cupboard.

Toch, who in America specially investigated sunlight for its photo-chemical effects, found that paints made up with asphaltums and bitumens under the influence of sunlight more or less rapidly deteriorate and become discoloured; in this way so-called waterproof paints become porous, and coloured pigments lose their original tints and become discoloured.

Lithopone (barytes and zinc sulphide) is rapidly acted on by sunlight, but the colour is restored in the dark. Real vermilion is photo-chemically transformed into the allotropic form of mercuric sulphide, which is black, especially when impurities such as mercuric oxide are present; red ferric oxide is frequently reduced by the organic pigmentary vehicle in the sun to the brown ferrous condition.

Linseed oil itself is bleached by sunlight. In the case of paints made up with linseed oil, we find white pigments tend to become discoloured in the dark, being transformed to a yellowish brown. They can be restored to whiteness by isolation.

According to Toch, the copals exhibit similar effects, while varnishes made up with an alcohol base are more or less photo-chemically inactive. Alterations in brilliancy between paintwork exposed to the sunlight and paint not so exposed are of very frequent occurrence. Photo-chemical activity in paints is frequently augmented by the presence of small quantities of impurities.

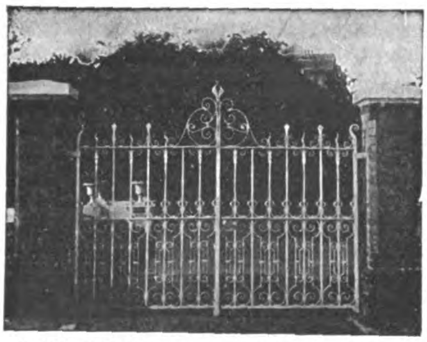
It may be generally stated that artificial illuminants with the exception of arcs are for all practical purposes photo-chemically inactive, and, consequently, provided the illumination in the room is uniform, no protection need be given. In rooms exposed to direct sunlight, or lit by arc lamps or mercury vapour lamps, photo-chemically inactive paints should be used, and paintwork in general should be covered with varnish; uniformity of illumination where possible should always be adopted.

We now come to a much more variable and complex factor, which is the physiological effect of the illuminant itself: that is to the three factors, glare, dazzle, and eye-fatigue. From this point of view we are practically only concerned with the matching of colours and the magnitude and nature of the light reflected from decorative work.

This is obvious to anyone who studies the illumination of shops at night. The butcher prefers the batswing flame of gas, while the draper uses the white light of an incandescent mantle or white electric arc lamp for showing up his goods to the best advantage.

The colour of a paint or pigment is caused by penetration and internal reflection of the light in the pigmentary particles. If the light that is capable of being transmitted in this way is not present itself in the light falling on the paint work that paint appears uncoloured. Of course, in all cases reflection and scattering at the surfaces of the particles takes place, and the finer the grinding, the greater this scattering and the less the penetration. Fine grinding, therefore, causes paints to appear lighter in tint than the same pigment ground somewhat more coarsely.

Most of our colour schemes in internal and external decorative work are done in daylight, and consequently the sun-spectrum or natural daylight is our normal standard of illumination. When we illuminate our rooms artificially, unless the spectrum of that source of light is the



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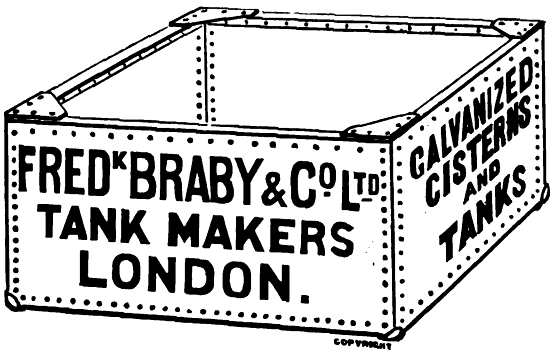

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same as that of the sun, the faults in the spectra of artificial illuminants may become evident by the apparent changes in colours caused by deficiency in, or absence of, light of particular wave lengths.

Mr. T. Baker has come across cases where great difficulty has arisen in choosing colours for preparing inks in three-colour printing, on account of the inaccurate judgment due to the artificial light.

COMPOSITION OF LIGHTS.

Light Source	Violet Blue	Green	Red
Oil or carbon filament	1	20	100
Acetylene or metallic filament . . .	5	35	100
Incandescent gas	5	36	100
Yellow flame arc	5	50	100
Open arc	50	75	100
Daylight	100	100	100

Mr. Ritchie, who has investigated this point very closely, has come to the conclusion that the Moore (CO_2 vacuum tube) light and indirect arc-lighting provide an illumination approaching nearest to sunlight.

(*a*) Under "batswing" gas or carbon filament illuminations the following changes are evident:—

Reds appear lighter and altered in tone.
Yellows are brightened and changed in tone.
Greens are degraded and rendered yellower.
Blues are darkened.

(*b*) Under incandescent gas and metallic filament illuminations:—

Browns are slightly lightened and reddened.
Reds are often lightened.
Emerald greens are darkened and made yellower.
Blues are darkened and rendered slightly purple.
Orange is brightened many shades.

Ageing of the electric lamp or of the incandescent mantle, of course, alters the spectrum sometimes quite appreciably.

It will be noted that low-pressure gas is about as satisfactory or unsatisfactory as metallic filament electric; experiments have not yet been conducted with high-pressure gas and nitrogen-filled electric lamps. The former, however, in which a greater amount of light is obtained per unit of gas, means less loss of energy in the form of invisible heat and a more continuous or available spectra.

Quite recently, Mr. J. Bond, the gas engineer for Stockport, has stated that the spectrum of high-pressure gas is quite similar to that of daylight, except that one does not get the Fraunhofer lines. This makes high-pressure gas an ideal illuminant.

These alterations in the so-called natural colours must, of course, be corrected to preserve the harmony of a colour scheme. On the one hand, the lighting authorities have been, and still are trying to bring up their light to the daylight standard by "screens," impregnated mantles, cored carbons, vacuum tubes with various gases in them, mercury amalgams, and different arc devices to produce a comparable spectrum; but, on the other hand, it is evident that those interested in internal decoration must take the light as it is, and not as it may be in the future, and correct their mistakes by using paints suitable for the illuminant intended.

In the modern systems of indirect lighting, where the room or hall is illuminated by reflection off the ceiling, the opportunity of modifying the light spectrum clearly presents itself to the decorator. The ceiling, instead of being merely whitewashed with a basic wash, which is advocated for fixing the sulphur, must be painted or distempered with the requisite colour to function as an absorption filter.

Another point of great importance is the quantity of light reflected from walls and ceilings. The reflection coefficient of any surface under illumination depends on the nature of the surface, and on the form of illuminant. According to Winslow, gas has a higher reflection coefficient than electric light, and from this point of view is preferable to that illuminant. All dark colours have low coefficients, and where used sufficient light must be given in order not to make the room look depressing.

The reflection from ceilings and walls of interiors may be from 0.0001 to 0.01 candle-power per square inch. Silvanus Thompson states that a whitewashed wall absorbs 30 to 40 per cent. of the light, and ordinary yellow or buff wall paper usually wastes 50 to 60 per cent., deep scarlet and crimson wall papers 70 to 75 per cent., brown paper 85 to 88 per cent., and therefore recommends pale tints. Unhappily this endeavour is checked by this smoke nuisance, and gives us another cogent reason for its removal.

In conclusion, the most important points wherein internal decorative work is affected by town air may thus be summarised:—

(1) Some part of every room should be painted with basic distemper or whitewashed. The basic material must not be varnished over; this is in order that the sulphur acids may be readily fixed.

(2) The main walls, if painted, should not be varnished, as this retards and hinders efficient ventilation.

(3) Delicate dyes should be protected by varnishes.

(4) Uniform illumination is to be desired and colours conformable to the spectrum of the illumination.

(5) The worst enemy to be fought is smoke and dirt.

BUILDING PROGRESS IN THE PROVINCES AND SUBURBS.

A LIST OF WORKS PROJECTED OR COMMENCED.

(N.B.—Local Authorities, architects, and others are invited to submit full particulars for insertion in this weekly list. Where districts are not entered against names of architects and builders the address is as a rule local.)

ENGLAND.

BUCKINGHAMSHIRE.

Amersham.—House, Station Road. Mr. A. H. Heron, A.R.I.B.A., architect, 16 Great Marlborough Street, London, W.

Chalfont St. Peter.—House, Gold Hill, for Mr. F. Groen.

Little Missenden.—Houses, Kingshill Road, for Messrs. H. & A. Wright.

Penn.—House, Knotty Green, for Mr. F. J. Lovell.

CUMBERLAND.

Carlisle.—Fawcett schools: reconstruction for 550 places (£2,000).

Scotby.—House. Mr. H. H. Hodgkinson, architect, 64 Lowther Street, Carlisle.

DERBYSHIRE.

Chesterfield.—Tuberculosis dispensary, Brimington Road. Mr. G. F. Kirk, contractor, Spring Bank Road.

DEVON.

Barnstaple.—Grammar School: dining hall (£500). Mr. P. Morris, A.R.I.B.A., County education architect, 1 Richmond Road, Exeter.

Okehampton.—Cinema Theatre and Club Premises, Lodge Road. Mr. F. J. Worden, architect, Town Hall.

Plymouth.—King Edward VII. Memorial Dispensary: alterations to Beaumont House; also pavilions, &c., for thirty patients, Mount Gold, for the Corporation.

Thorverton.—Drill Hall and Headquarters for "A" Squadron, Royal 1st Devon Yeomanry. Messrs. Ellis, Son & Bowden, architects, Bedford Chambers, Exeter.

DURHAM.

Chester-le-Street.—Congregational Church.

Gateshead.—"Shipcote" Hotel, Sunderland Road: alterations for Messrs. Newton.

Catholic School, Hawkes Road, for 600 places.

ESSEX.

Brightlingsea.—House, Ladysmith Avenue, for Mrs. E. Lake.

House, Church Road, for Mr. A. J. Aldous.

House, Church Road, for Mr. J. Ball.

Chadwell Heath.—Three houses, Saville Road, for Mr G. H. Wright.

Chelmsford.—Workmen's houses.

Dagenham.—Mortuary, Church Lane, for the Parish Council.

Grays.—Sixteen houses, Kent Road, for Mr. H. H. Brown.

Five shops, Orsett Road, for Mr. Connor.

Romford.—Ten houses, Elkington Avenue, for Essex Real Estates Co.; also

Four houses, Cromer Road.

House, Balgores Lane, for Messrs. Winstone & Co.

House, Marlborough Road, for Mr. F. Wells.

Southend-on-Sea.—Baths, &c.: extension (£2,000).

Upminster.—Two houses, Howard Road, for Messrs. W. P. Griggs & Co., Ltd.

GLOUCESTERSHIRE.

Bristol.—Municipal Lodging-house for Men, Wade Street: extension for additional fifty beds (£3,500).

Municipal Lodging-house for Women, King Square: alterations (£2,000).

Y.M.C.A. Central Buildings (£40,000).

Prudential Assurance Company, Ltd.

Chief Office: HOLBORN BARS, LONDON.

Summary of the Report presented at the Sixty-fifth Annual Meeting, held on 5th March, 1914.

ORDINARY BRANCH.—The number of policies issued during the year was 71,359, assuring the sum of £6,849,224, and producing a new annual premium income of £425,717. The premiums received during the year were £4,920,518, being an increase of £93,525 over the year 1912. In addition, £11,116 was received in premiums under the Sickness Insurance Tables. The claims of the year amounted to £3,766,625. The number of deaths was 8,699. The number of endowment assurances matured was 23,497, the premium income of which was £131,017.

The number of policies in force at the end of the year was 917,091.

INDUSTRIAL BRANCH.—The premiums received during the year were £7,874,456, being an increase of £81,894. The increase shown would have been much greater but for the fact that, owing to our system of accounts, fifty-three weekly collections were credited in the report for the year 1912. The claims of the year amounted to £3,139,193, including £359,572 bonus additions. The number of claims and surrenders, including 5,942 endowment assurances matured, was 366,104. The number of free policies granted during the year to those policyholders of five years' standing and upwards, who desired to discontinue their payments, was 126,768, the number in force being 1,890,406. The number of free policies which became claims during the year was 45,546.

The total number of policies in force in this Branch at the end of the year was 19,778,135; their average duration exceeds twelve and three-quarter years.

The assets of the Company, in both branches, as shown in the balance sheet, after deducting £1,750,000 written off securities, are £86,993,003, being an increase of £2,421,071 over those of 1912.

The six Prudential Approved Societies formed under the National Insurance Act 1911 have done important work during the year and the membership continues to increase. Payment of sickness and maternity benefits commenced on the 13th January, 1913, and during the year a sum of £1,401,360 was distributed to members by the Company's Agents. It may be noted that in a Government Inter-Departmental Report recently presented to Parliament particular attention is drawn to the advantage of payment in cash by a representative of the Society. The Report continues:—"The fact that a personal visit accompanies the payment imposes some restraint on any temptation to claim benefit improperly. The risk of the benefit falling into wrong hands is reduced to a minimum . . ."

In the Ordinary Branch a reversionary bonus at the rate of £1 16s. per cent. on the original sums assured has again been added to all classes of participating policies issued since the year 1876.

In the Industrial Branch a bonus addition will be made to the sums assured on all policies of over five years' duration which become claims either by death or maturity of endowment from the 6th of March, 1914, to the 4th of March, 1915, both dates inclusive, as follows:—

PREMIUMS PAID FOR	BONUS ADDITION TO SUMS ASSURED.
5 years and less than 10 years ...	£5 per cent.
10 ,, ,, ,, ,, 15 ,, ...	£10 ,,
15 ,, ,, ,, ,, 20 ,, ...	£15 ,,
20 ,, ,, ,, ,, 25 ,, ...	£20 ,,
25 ,, ,, ,, ,, 30 ,, ...	£25 ,,
30 ,, ,, ,, ,, 35 ,, ...	£30 ,,
35 ,, ,, ,, ,, 40 ,, ...	£35 ,,
40 ,, ,, ,, ,, 45 ,, ...	£40 ,,
45 ,, ,, ,, ,, 50 ,, ...	£45 ,,
50 ,, ,, ,, ,, 55 ,, ...	£50 ,,
55 ,, ,, ,, ,, 60 ,, ...	£55 ,,
60 ,, and upwards	£60 ,,

The rate of bonus declared for last year has thus been maintained, and an increased bonus of £5 per cent. will be distributed in the case of policies on which premiums have been paid for 35 and less than 40 years, 45 and less than 50 years, and 55 and less than 60 years.

Balance Sheet of the Prudential Assurance Company, Limited, being the Summary of both Branches, on the 31st December, 1913.

LIABILITIES.				£	s.	d.
Shareholders' capital				1,000,000	0	0
Life assurance fund— Ordinary Branch	£45,693,479	19	5			
Sickness insurance fund ...	10,119	12	3			
Life assurance fund— Industrial Branch	38,901,678	14	2			
				84,605,278	5	10
Investments reserve funds				1,000,000	0	0
Claims under life policies intimated and in course of payment				158,273	15	6
Annuities due and unpaid				2,508	6	8
Balance of bonus under life policies reserved for distribution				226,942	8	6
				£86,993,002	16	6

ASSETS.	£	s.	d.
Mortgages on property within the United Kingdom ...	8,553,062	18	7
Mortgages on property out of the United Kingdom ...	*Nil*		
Loans on parochial and other public rates	13,980,705	11	9
Loans on Life interests	1,117,287	0	11
Loans on Reversions	95,278	4	6
Loans on Stocks and shares	79,385	2	0
Loans on Company's policies within their surrender values	3,282,841	14	8
Loans on Personal security	*Nil*		
Loans to Educational institutions secured on income, etc....	45,882	9	2
Investments:—			
Deposit with the High Court (£24,400 2½ % Consolidated stock)	17,568	0	0
Carried forward ...	£27,172,011	1	7

ASSETS—*continued.*	£	s.	d.
Brought forward ...	27,172,011	1	7
Investments (*continued*):—			
British Government securities	1,745,934	14	3
Bank of England stock	143,117	2	10
Municipal and county securities, United Kingdom	1,674,443	6	3
Indian and Colonial Government securities ...	4,709,807	17	7
Colonial provincial securities	1,236,745	15	11
Indian and Colonial municipal securities ...	3,415,166	0	4
Foreign Government securities	4,323,467	16	0
Foreign provincial securities	691,843	12	4
Foreign municipal securities	3,507,309	3	6
Railway and other debentures and debenture stocks, and gold and sterling bonds—Home and Foreign	19,748,404	11	0
Railway and other preference and guaranteed stocks and shares	3,198,909	13	1
Railway and other ordinary stocks and shares ...	2,801,315	16	0
Rent charges	455,793	18	5
Freehold ground rents and Scotch feu duties ...	4,777,685	1	9
Leasehold ground rents	8,696	19	1
House property	4,034,994	18	11
Life interests	34,626	14	6
Reversions	1,611,216	19	8
Agents' balances	6,040	7	7
Outstanding premiums	597,179	2	4
Outstanding interest and rents...	80,682	2	8
Interest, dividends and rents accrued but not payable	528,165	6	7
Bills receivable	*Nil*		
Cash—On deposit	20,000	0	0
In hand and on current accounts	469,444	14	4
	£86,993,002	16	6

The values of the Stock Exchange securities are determined, under the regulations of the Company, by the Directors. These values have been compared with the middle market prices on 31st December, 1913, due allowance being made for accrued interest, and the difference is more than provided for by the investments reserve funds.

We certify that in our belief the Assets set forth in the Balance Sheet are in the aggregate fully of the value stated therein less the investments reserve funds taken into account. No part of any fund has been applied directly or indirectly for any purpose other than the class of business to which it is applicable.

A. C. THOMPSON, *General Manager.*
J. BURN, *Actuary.*

D. W. STABLE,
J. SMART, } *Joint Secretaries.*

THOS. C. DEWEY, *Chairman.*
W. J. LANCASTER,
J. IRVINE BOSWELL, } *Directors.*

We report that, with the assistance of the Chartered Accountants as stated below, we have examined the foregoing accounts and have obtained all the information and explanations that we have required, and in our opinion such accounts are correct and the foregoing Balance Sheet is properly drawn up so as to exhibit a true and correct view of the state of the Company's affairs according to the best of our information and the explanations given to us and as shown by the books of the Company. No part of any fund has been applied directly or indirectly for any purpose other than the class of business to which it is applicable.

PHILIP SECRETAN,
W. H. NICHOLLS, } *Auditors.*

We have examined the Cash transactions (receipts and payments) affecting the accounts of the Assets and Investments for the year ended December 31st, 1913, and we find the same in good order and properly vouched. We have also examined the Deeds and Securities, Certificates, &c., representing the Assets and Investments set out in the above account, and we certify that they were in possession and safe custody as on December 31st, 1913.

17th February, 1914.

DELOITTE, PLENDER, GRIFFITHS & CO., *Chartered Accountants.*

England—*continued.*

Hampshire.

Winchester.—Royal Hants County Hospital: nurses' block addition (£1,500).

Herefordshire.

Hereford.—Fifty-eight Council houses (£11,750).

Kent.

Maidstone.—Depôt stables, &c., Mackay's Wharf, St. Peter Street, for the Anglo-American Oil Co.
Generating house, St. Peter Street, for the Gas Co.
House, Buckland Hill, for Messrs. Clarke & Epps.
House, Old Tovil Road, for Miss Hills.

Lancashire.

Chorley.—Eight houses, Yarrow Road, for J. Martindale.
Three houses, Trafalgar Street, for Mr. J. Sharples.
Porkery and dairy, Steeley Lane, for the Chorley Co-operative Society.

Darwen.—Warehouse, shop, &c., Bolton Road and Foundry Street, for Mr. J. Knowles.

Droylsden.—Church. Mr. P. Walker, architect, Ashton Old Road, Higher Openshaw, Manchester.

Liverpool.—Wesleyan Church, Warbreck Moor, Aintree (£5,500).

Oldham.—Council School, Eustace Street, Chedderton: extensions (£3,000).

Rochdale.—Council School, Lower Place. Mr. Hathaway, architect.

Walkden.—Liberal Clubhouse: extension. Mr. J. T. Proffitt, architect, 4 Memorial Road.

Leicestershire.

Broughton Astley.—Village Hall.

Desford.—Twenty working-class houses.

Shepshed.—Fire Station, &c. Mr. W. N. Hampton, Council surveyor.

Lincolnshire.

Brumby, Old.—Wesleyan Methodist Church.

Middlesex.

Finchley.—Proposed workmen's dwellings.

Monmouthshire.

Cross Keys.—Eighty-two houses, Pontywain, for the Ebbw Vale Co.

Northamptonshire.

Irchester.—Stores and two cottages, for the Co-operative Society.

Northumberland.

Haltwhistle.—Two houses, Flowers Close Field, for Mr. R. W. Banks.
Six houses, Flowers Close Field, for Mr. J. M. Forster.
Eight houses, Flowers Close Field, for Mr. W. Johnson.

Hexham (near).—Sanatorium for 200 persons.

Newcastle-on-Tyne.—Proposed St. Mary's parish hall (£2,000).

Nottinghamshire.

Nottingham.—Mental Hospital: partial reconstruction, &c. (£14,000).

Worksop.—Hotel, Gateford Road, for Messrs. Hooson Brothers.

Oxfordshire.

South Hinksey.—Baptist Church.

Shropshire.

Bishop's Castle.—Secondary Council School.

Newport.—Cottage Hospital (£5,000).

Somerset.

Clutton.—Workhouse: additions and alterations. Mr. W. F. Bird, architect, The Island, Midsomer Norton.

Staffordshire.

Burslem.—The Old Town Hall: alterations, &c. (£3,000). Council surveyor.

Cannock.—Council School, Belt Road, Hightown.

Croxall.—C.E. School for seventy-two places.

Hanley.—Proposed Variety Theatre, Stafford Street. (Seating for 3,000 persons.) £40,000. Architects: Messrs. Wylson & Long (London) and Mr. C. G. Cowlishaw, 20 Stafford Street.

Newcastle-under-Lyme.—Proposed Council School.
Twelve workmen's dwellings, Lower Green. Borough surveyor.

Shelton.—Church Hall and Institute (£1,500).

Stoke-on-Trent.—Stanfield Hospital: additions and alterations (£1,800).

Surrey.

Croydon.—Public Baths, Thornton Heath: extension.

Kingston-on-Thames.—R.C. Church and schools, corner of Coburg and Wellington Roads.

Sutton.—St. Nicholas Parish Hall (£1,450).

Sussex.

Eastbourne.—Princess Alice Hospital: nurses' hostel. (£1,200).

Warwickshire.

Nuneaton.—Drill Hall: additions for the County T.F.A.
House, Norman Avenue, for Mr. G. Cooper.
Two houses, Earls Road, for Messrs. G. E. & W. Wincott.
Four houses, Marlborough Road, for Mr. W. A. Taberer.
House, Oaston Road, for Mr. A. White.
Six houses, Bracebridge Street, for Mr. T. Cooke.
Six houses, Bracebridge Street, for Mr. Woodhead.
House, stables, &c., Frank Street, for Mr. T. A. Ellis.
Four houses, Eadie Street, for Messrs. Wincott.
Workhouse: Children's Home additions (£1,600).

Wiltshire.

Melksham.—Four villas, Lower Forest Road. Messrs. Bigwood & Co., builders.

Worcestershire.

Upton-on-Severn.—Motor works, Guarlford, for Messrs. Morgan (Malvern).

Worcester.—Premises for Messrs. E. Webb & Sons, Ltd.

Yorkshire.

Bentley.—Congregational Church.

Bradford.—Cottage baths (£6,700).
Public baths, Drummond Road: alterations and extensions (£800).

Doncaster.—U.M. Church and schools, Morley Road.

Elland.—U.M. Church, Southgate.

Normanton.—Two houses, Station Road, Altofts, for Mrs. C. Robinson.

Ripon.—Cottage Hospital: enlargement.

Selby.—Thirty-nine workmen's houses, Fairfax Avenue.

York.—Weights and Measures Office, Lower Friargate, (£2,500).

WALES.

Llansamlet.—Premises, Bethel Road. additions and alterations for Mr. R. G. Davies.

Pontardulais.—Two houses and a shop, Swansea Road, for Mr. W. Davies.

Pwll.—Council School for 500 places.

SCOTLAND.

Cabrach.—Parish Manse: additions and alterations. Mr. A. H. L. Mackinnon, A.R.I.B.A., architect, 245 Union Street, Aberdeen.

Clydebank.—Church, Dalmuir, to accommodate 600 to 700, for West U.F. Church (£4,000). Messrs. Stewart & Paterson, architects, 14 Blythswood Square, Glasgow.

Glasgow.—Business premises, corner of Thistle and Cleland Streets, for Messrs. Massey & Sons, Ltd.
Business premises, corner of Bell Street and Candleriggs, for Messrs. Rattray & Co., Ltd.
Double villa, St. Bride's Road. Mr. J. Barr, builder, Deenshee, Cambuslang.

Hawick.—Dairy (£3,000), for the Co-operative Society, Ltd.

Motherwell.—High School (£27,000). Mr. S. B. Russell, F.R.I.B.A., architect, 11 Gray's Inn Square, London.
Infectious diseases hospital: administrative block extension.

Shotts.—Sanatorium: administrative block additions (£1,600).

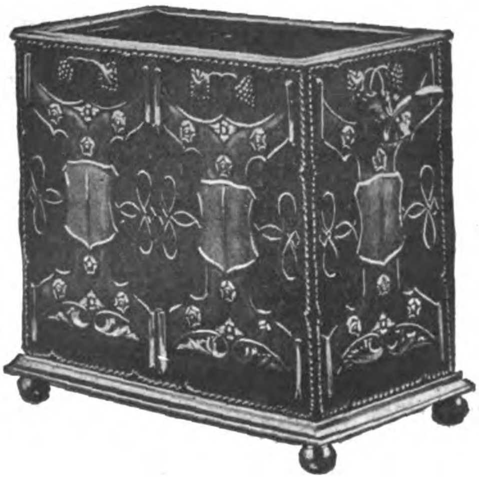
IRELAND.

Cashel.—Forty working-class houses (£5,700).

The War Office are about to commence preparations for new Royal Field Artillery barracks at Moore Park, Kilworth, in Munster. Accommodation will be made for a Brigade of Artillery, with stabling, a chapel, school, and all other necessary buildings, the cost of which will run into from £95,000 to £100,000.

Messrs. Richardson & Gill have prepared plans for the erection of a commodious theatre in Torquay. An island site has been purchased in Torwood Street, and the complete scheme includes the provision of nine shops and a large café on the first floor frontage.

Mr. H. Avray Tipping, architect, Mountain, near Chepstow, has undertaken, it is said, to construct a garden village near Chepstow. It is understood that the scheme, which will include the erection of eighty cottages, will cost something like £20,000.



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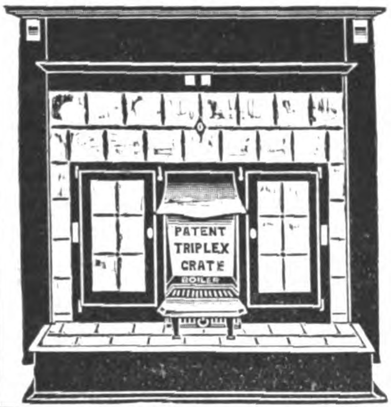
Antique Brass,
Antique Copper,
&c.
Beautiful Designs,
Excellent Workmanship.

Bell Range & Foundry Co., 16 Berners St., W. and Northampton.

THE "TRIPLEX" PATENT
Combination SITTING ROOM GRATE



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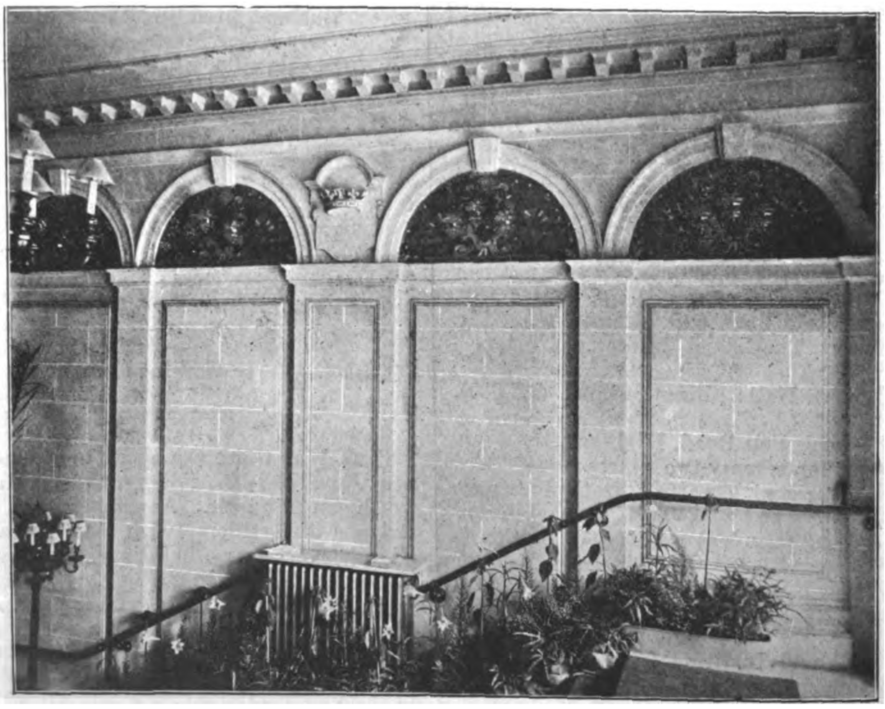

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THE ARCHITECT

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FORTHCOMING EVENTS.

Monday, March 23.

Royal Institute of British Architects: Paper, entitled "On Borrowing in Architecture," by Mr. L. March Phillipps, at 8 P.M.

Liverpool Architectural Society: Paper, entitled "Concrete and Reinforced Concrete 'Dont's' for Architects," by Mr. J. A. Davenport, A.M.I.C.E., M.C.I., at 6 P.M

Wednesday, March 25.

Manchester Society of Architects: Paper by Mr. J. Harvard Thomas (sculptor), at 6.30 P.M.

Royal Society of Arts: Paper, entitled "Fashion in Art," by Sir Charles Waldstein, Litt.D., Ph.D., at 4.30 P.M.

Thursday, March 26.

Concrete Institute: An adjourned discussion on Mr. Cyril Cocking's paper entitled "Calculations and Details for Steel-Frame Buildings from the Draughtsman's Standpoint," at 7.30 P.M.

Friday, March 27.

Leicester and Leicestershire Society of Architects: Students' evening. Papers, entitled "Domes," by Mr. A. J. Wood, and "A Sketching Tour in Normandy," by Mr. C. J. M. Cowdell, A.R.I.B.A., at 3 P.M.

THE ECCLESIASTICAL REMAINS AT GLENDALOUGH.

AMONGST the national ancient monuments which have been vested in the Commissioners of Public Works in Ireland and have by them been repaired and some necessary works of protection carried out during the year ending March 31, 1912, there are few more interesting than the ecclesiastical buildings at Glendalough, one of the most important groups of Early Christian remains to be found in Ireland. The patron saint and founder is St. Kevin, who was buried here in or about 617 A.D. It is recorded that the saint lived there in the "Valley of the Two Lakes" as a hermit until a cell and oratory were built for him on the southern shore of the upper lake, on the site of which the remains of a later date may still be seen. This settlement was the beginning of a religious centre, where other ecclesiastical institutions were gradually established until it became a diocesan see and a cathedral city. The monastery was founded here of which St. Laurence O'Toole, successor of St. Kevin, was abbot in 1162 when he was appointed archbishop of Dublin.

The earliest site mentioned in the life of St. Kevin is that of Teampul-na-Skellig, which is situated on the southern shore of the upper lake, where a cell had been formed for the hermit with an oratory adjoining. The church is 25 feet long by 14 feet wide and the walls about 2 feet 6 inches thick, except on the northern side, which is 3 feet. There is evidence that still earlier buildings of combustible materials which had been burned had existed near by. The east window of the church has been recovered from débris which had fallen upon the site from a mountain side, and the west doorway of the church remains formed of large granite blocks without ornament and having inclined jambs.

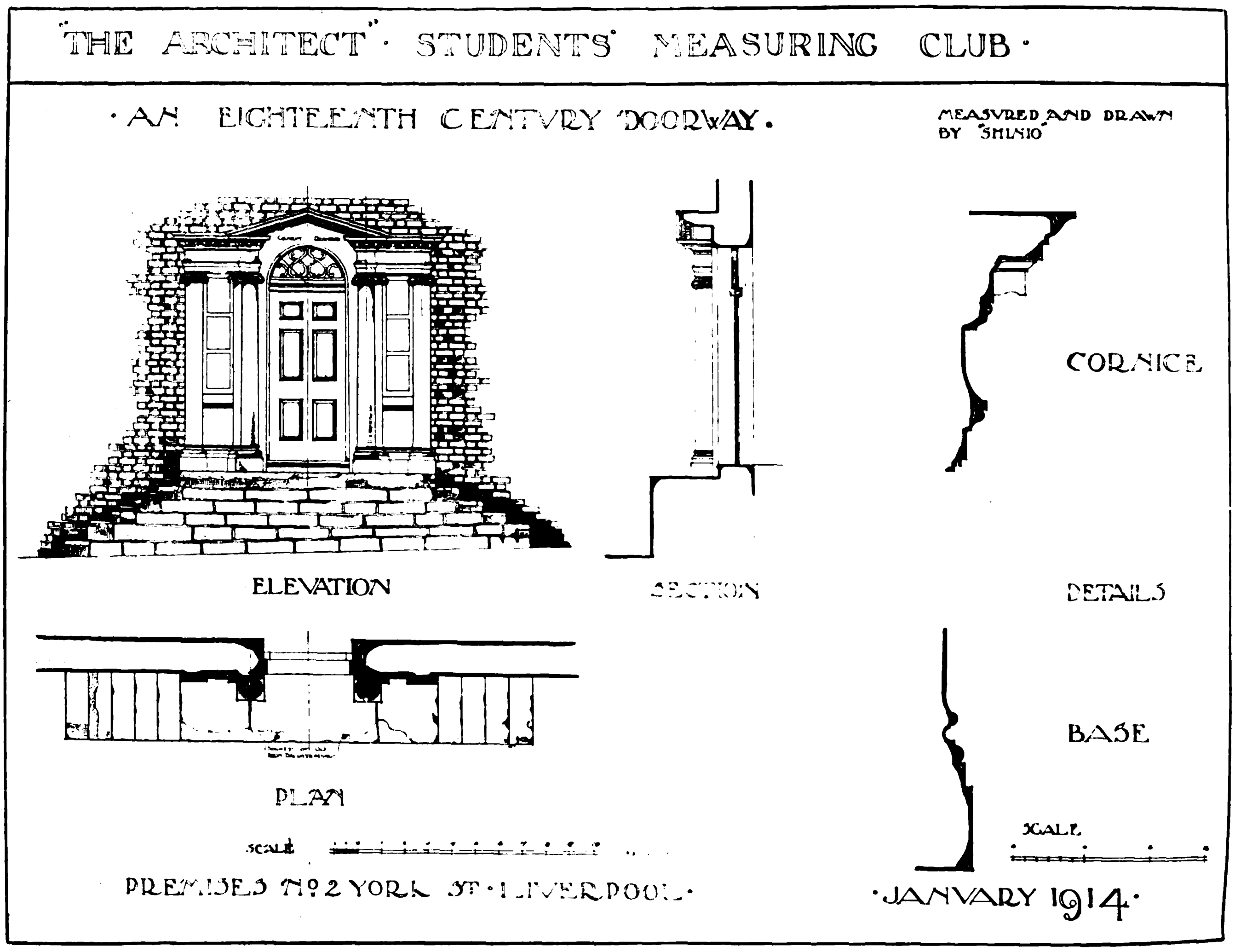
At the south-east corner of the lake is situated Reefert church, which has always been regarded as the burial-place of the chieftains of the district. The structure has been described as "Disert Caemhghin" (Dysert Kevin), the church erected for the saint by his followers at the time when he had again retired to his cell and oratory after founding the monastery further down the valley. It is probably the "beautiful church" built to draw him from his hermitage on the cliff over the lake. It was the burial-place of the O'Tooles, chieftains of the district, and of the more ancient clans who inhabited it before the O'Tooles obtained possession of it; and the St. Laurence O'Toole whom we have already mentioned as abbot and archbishop of Dublin was one of the clan.

The church, like all these early Irish churches, was small and rectangular in plan, consisting of nave and chancel, the former measuring 29 feet 1 inch in length and 17 feet 3 inches in width, and the latter 13 feet on the north wall and 12 feet 10 inches on the south. The arch between the nave and chancel is 7 feet 11 inches wide, which is the full width of the chancel. In this respect the plan differs from the examples that we know in England as the Celtic type, in which the extremely narrow chancel arch is an essential feature. Another point of variation between these Irish churches and the British plan is the position of the entrance, which is usually in the west gable.

Reefert Church has many points of resemblance both in size and treatment with Trinity Church, which has sometimes been held to be earlier than Reefert. In Trinity Church the jambs are dressed and the arch stones are properly radiated, but there is no attempt at ornament such as is to be seen on the jambs of the doorway at Reefert. It must not be inferred, however, from the absence of ornament at Trinity that it is earlier than Reefert, or, as is too frequently taken for granted, because a certain thing is not done at a stated time and place that the builders did not know how to do it. Trinity Church is interesting as having had a round tower erected over a small vaulted chamber, built as an addition against the western end of the original church. It is worthy of note that the erection of this round tower rendered useless the original western door of the church, and a doorway on the south side was cut to form a new entrance to the church. It is an interesting speculation, although far from being a scientific fact, that we here have an explanation of the preferential use of a southern entrance in churches of the British Celtic type of plan.

A short distance to the west of Reefert Church are the remains of a roughly circular stone hut known as St. Kevin's cell. The diameter inside is 11 feet 3 inches from east to west and 10 feet 6 inches from north to south. The walls of the hut batter on the outside and slightly overhang on the inside. There is no other indication of how it was roofed. It is probable that the roof was of stone built on the beehive plan.

Another of these small churches of Glendalough is that of St. Mary, which, in the opinion of Dr. Petrie, was the earliest church erected in the lower part of the valley, but it is probable that it is not quite as early as Trinity Church. This building consists of a nave and chancel, the latter being an addition. The nave measures 32 feet in length and is reduced in breadth from 19 feet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11 inches at the west gable to 19 feet 5 inches at the chancel end of the nave. The chancel, which, as we have said, is an addition, is not bonded into the nave. Its dimensions are 24 feet 4 inches in length, with a uniform width of 17 feet 7 inches.

One of the most remarkable buildings at Glendalough is the famous round tower. Its external diameter is 16 feet above the first offset above ground level, tapering to about 13¾ feet below the base of the conical roof. Its total height is 103 feet above the foundations. The roof had fallen in, but has been rebuilt with the original stones which were found in the débris below. We forbear to enter into any discussion on the many varied theories which have been advanced as to the origin and meaning of these round towers of early Irish ecclesiastical architecture.

The little building known as the "Priest's House," which was really a mortuary chapel in the ancient cemetery, is of particular interest from the detail of an arched splayed and moulded recess 7 feet 1 inch wide in the outer face of the east wall. This is now closed with masonry and contains a small window opening. The recess has moulded pilasters with carved bases and capitals which, with the fragments of the ornamented arched head, have been put together as shown in Petrie's drawings. The arched ring is decorated with chevrons in leaf pattern and has a solid moulding bearing small chevrons fitted closely into each other. We are here evidently in the presence of work of a very much later date than that of the older buildings at Glendalough.

One of the most remarkable of the interesting groups of ruins now remaining in the Glendalough valley is St. Kevin's Church, commonly called "St. Kevin's Kitchen." Both Petrie and Brash assign its erection to the period of the saint whose name it bears. The most interesting feature about this building is the construction of the roof, which is formed with overlapping stones laid corbelling, which though laid in horizontal courses assume internally the form of the intrados of an arch not perfectly semi-circular, but rather that of a semi-ellipse with the long axis vertical, or perhaps intended for a true catenarian arch. Obviously with the intention of meeting a presumed thrust of this arch the walls of the building themselves incline inwards, the width at floor level being 14 feet 7 inches and at the spring of the arch 14 feet 4 inches. The walls also are battered externally. Of later date than the original structure there has been added a small circular tower standing upon the west gable wall and the roof. The construction of this building may very well be compared with that of the roofs of Cormack's Chapel, Cashel, and St. Columba's House, Kells.

The cathedral is the largest and most imposing of the buildings at Glendalough, and with the round tower occupies the most central and commanding site in the valley. It was dedicated to St. Peter and St. Paul, but ceased to be used as a cathedral in 1214, when the diocese of Glendalough was united to that of Dublin. The building consists of nave and chancel, the latter with a small sacristy on the south side. The nave is 48 feet long on the south side and 48 feet 4½ inches on the north by 29 feet 5 inches on the west side and 29 feet 10½ inches in width on the east, internal measurements. The chancel measures 37 feet 7 inches in length by 21 feet 9 inches in width. Both nave and chancel are plain rectangular buildings. The original entrance to the nave was on the west, but a later opening was formed on the north. The masonry indicates several rebuildings or periods of construction, and the remains of the north doorway and the portions of the chancel arch now existing are amongst the works of later date, and with the chancel windows are moulded and carved in a different stone from the remainder of the buildings, and in a style which shows some possible indications of the transition from Romanesque to Early English.

The latest of the ecclesiastical buildings in the valley is the monastery or priory of St. Saviour, which presents features in its details similar to the Romanesque style of the twelfth century. It is said to have been founded and presided over by St. Laurence O'Toole, who was afterwards Archbishop of Dublin.

A full description of the ecclesiastical buildings of Glendalough, by Mr. Robert Cochrane, LL.D., I.S.O., F.S.A., F.R.I.B.A., accompanied by numerous drawings, is given in an appendix to the eightieth report of the Commissioners of Public Works in Ireland, from which we have obtained our facts.

DOORWAY AT NO. 2 YORK STREET, LIVERPOOL.

The building, of which this doorway is the main entrance, was built in the later portion of the eighteenth century, and was originally a private house belonging to some business magnate of the city. The neighbourhood around Duke Street, this building being situated at the corner of Duke Street and York Street, was at that time the aristocratic district of Liverpool, and many extremely fine examples of Georgian houses are to be seen. The district has, however, declined into one of workshops and warehouses, while this house is now a basket store, and although very much dilapidated internally, traces of very fine panelling, balustrading, and plaster work are to be seen.

The doorway is in a very good state of preservation, although to improve it in appearance to the layman's eye, the owners have had it painted, the lower portion a dull green and the top portion a creamy yellow.

The arch and space under pediment has been cemented over. The balustrading, knocker and letter-box have been removed, but their original positions are to be seen.

It is not known whether the door and side windows are the original ones, but the ironwork in the fanlight is undoubtedly the old fixture.

NOTES AND COMMENTS.

The recrudescence of Suffragist activity in its latest development of damage to the artistic treasures of the nation enforces the view we have already expressed, that more effective precautions must be taken by the custodians of pictures, museums, and national monuments, even at the cost of inconvenience to the public. We do not want to see next week the London Museum in its new home, Stafford House, share the fate of the Rokeby "Venus" and Birmingham Cathedral. Neither art nor religion is respected by these fanatical furies and the opening of the new museum would present a tempting opportunity.

The answer given in the House of Lords by the First Commissioner of Wales (Earl Beauchamp) to an inquiry by Lord Southwark as to the condition of the roof of Westminster Hall is of serious import. Earl Beauchamp said that the existing roof was not part of the original structure erected by William Rufus, but it was constructed by Richard II. at the end of the fourteenth century. When the building was transferred to the Ancient Monuments branch of the Office of Works in March 1912, it was decided, in view of the lack of information as to the real condition of the stability of the roof, to undertake a thorough examination. He regretted to say a very serious state of decay was shown to exist throughout the whole portion of the roof examined. This decay was found to be due almost entirely to the ravages of larvæ of the anobium beetle. The effect of dry rot was also recorded, but this did not amount to serious dimensions. In almost every instance the beam was attacked at the main structural point. In numerous cases junction beams had been hollowed out to a mere shell, and large cavities existed, in which even the disintegrated dust had disappeared. The condition of the roof was such that had its construction on principles of design not been scientifically sound, many of the trusses would undoubtedly have fallen. It was necessary, in order to ensure the stability of the present roof, to take such steps as would prevent the further depredations of the larvæ of this beetle, and the most obvious way would be to replace through the roof the decayed beams of the structure. But the attack had progressed so far, and was of such serious dimensions, that if this method were adopted it would be necessary practically to reconstruct the whole roof. Apart from the very great cost involved, it was highly questionable whether such a structure would be of real historical interest. It had been determined to adopt a scheme of strengthening which would preserve every vestige of sound timber now existing in the roof, and only to cut and piece beams so far as cavities and perished wood existed. In order to adopt this method, it would be necessary to carry out a scheme of steel reinforcement. By this means the great stress would be transferred to the steel reinforcement, which, in turn, would transmit the stress to the walls. The steel structure would be made practically invisible from below. It would not only carry the stress of the roof, but it would secure over a great number of years the sound timber in the present structure. The work would be of considerable difficulty of execution, and it would be costly. Until one bay had been successfully treated, it was impossible to frame an estimate for the whole of the works. A sum of 10,000*l.* was being taken in the Estimates of the Office of Works for the coming year. As to the preservation of the beams from further attack by the larvæ of the beetle, a small committee of experts were considering the matter, and it was expected that the results of their deliberations would give them a method of dealing with the problem of this insect. It was impossible to say when the work would be done, but they would do their best to remove the scaffolding which disfigured Westminster Hall as soon as possible. Much as one may regret on sentimental grounds the use of steel for reinforcing the ancient timber and relieving it of its constructive function, we agree that this is preferable under the circumstances to reconstructing the roof with new timber. We shall be interested to learn the conclusions of the committee of experts as to the best antidote to the ravages of larvæ of the anobium beetle. Amongst specifics which we have known prescribed are paraffin, oil of creosote, and a solution of corrosive sublimate in alcohol. The last-named is undoubtedly effective when it touches the larvæ, but the difficulty with all liquid remedies is that of penetration.

The want of care in the transit of goods by railway companies formed a subject of complaint at the annual meeting of the John Wright & Eagle Range Company. The Chairman referred more particularly to the question of owner's risk rates. Of course any manufacturer who took advantage of the owner's risk rates knew that with the cheaper rate he took the risk of breakage, but at the same time the natural obligation on the railway company to handle and carry those goods with reasonable care remained. Unfortunately they knew to their cost that that reasonable care was too generally not taken. The damage done in a number of cases gave clear evidence of nothing less than culpable negligence. As a recent instance—only one out of many hundreds—a certain customer ordered twenty-four stoves. These were despatched in the usual way, and they all arrived broken. They replaced them, and a number were broken again. These they also replaced, and this went on for a number of times. In all they had to send sixty stoves to get twenty-four good ones delivered to their customer. The alternative offered, of course, was: "Pack your goods and send at company's risk." But in practice this alternative was not really open to them. A large section of their goods were so cut in price that the cost of the packing demanded by the railway company and the extra rate would involve a loss. Indeed, when they had made trials by packing and consigning at company's risk, they had found that the very fact of the nature of the goods being concealed by the packing from the railway men, coupled with the weight of the cases, had led to their being smashed worse than ever. They had even gone the length of sending consignments, part of which had been packed in boxes and consigned at company's risk, and part sent in the usual way at owner's risk, and the breakage had been less with the unpacked than with the packed goods.

An interesting discussion on the proposal to establish a Ministry of Fine Arts took place at the annual meeting of the Imperial Arts League. The subject of the proposed Ministry arose on the motion for the adoption of the report of the Council. The report said: "Your chairman, vice-chairman, and other members have taken a prominent part in connection with a comprehensive committee which has been formed for the development and realisation of the idea. As the result of a number of meetings a definite scheme has been formulated and we hope may find acceptance at the hands of the Government. . . . The League may justly claim that its influence has been considerable. . . . They feel assured that in view of the immense importance of the project their efforts to bring it to fruition will have the cordial support of the League."

There appeared to be some disinclination on the part of the general membership to accept the report.

Mr. C. F. A. Voysey said he had reason to believe there were a good number of members of the League who did not think that a Ministry of Fine Arts was desirable. "Many of us," he continued, "think that artists will never agree as to what they want, and that if there is a Ministry it will never be brought about by artists. By adopting this report as it stands, you are committing yourselves, and preventing any free discussion of the scheme."

Other members wished to discuss the scheme before the support of the League was accorded, but Professor Colton stated that there were difficulties in the way of discussion. The scheme which had been drawn up by the special executive committee was confidential. Some five members of a total of seven were members of the Imperial Arts League, and in the light of this discussion they were in a cleft stick, for, if the amendment was carried, it seemed they would have to withdraw as the League's representatives. They must ask for a mandate from the members of the League.

Mr. Guy Dawber, speaking as one of the members of the composite executive committee responsible for the scheme, said that if the amendment were carried they would not be able to serve. Seeing that the League had at present four or five members on a very small executive committee, he thought it would be disastrous to the scheme which had been drawn up. It would mean the nullification of months of effort.

The effect of these arguments resulted in the adoption of the report as it stood by a large majority.

The cost in human life and suffering at which slates are maintained in their supremacy as a cheap and, at the same time, efficient roof covering, was disclosed in the House of Commons by Mr. Ellis Davies, in moving the first reading of a Bill to provide for the establishing of boards for fixing a minimum wage for workers in slate quarries and slate mines. By this Bill he proposed that the board should consist of three representatives of the workmen and three representatives of the employers, with an independent chairman appointed by the Board of Trade. Under the Bill the board would have power to appoint a minimum wage for workers employed in open slate quarries and the slate mines which came within the scope of the Metallurgical Mines Act. Further provisions gave them power to make special rules with regard to those workmen who, through age, ill-health, or infirmity, were not quite capable of performing the ordinary work of a quarryman, and in fixing a minimum wage the board must have regard to the fact that the minimum so provided should be such as to enable the workman to maintain in physical efficiency himself and the members of his family. The number of workmen affected by the Bill was not large. The industry itself was limited to the greater part of two counties, and it was exceedingly skilled work, and exceedingly hazardous. The open quarries were situated on the hillside, and men were compelled to work very often at an altitude of 800 feet above the sea. In addition to the exposure, the occupation was so hazardous that the number of accidents to the quarrymen was higher even than that in coal-mines. In two successive cases 33 per cent. of the workmen were injured in one quarry, and in another 35 per cent. There was no doubt that a good many of these accidents were due to the fact that the workmen, in their anxiety to obtain a living wage, undertook risks which they would not have taken under ordinary circumstances.

The ancient gates of our English towns are now so sadly diminished in number that every lover of our national history must view with dismay the resolution of the Watch Committee of the Southampton Council that it is desirable to pull down or remove the splendid old Bargate, which dates from the fourteenth century. Doubtless it is an obstruction to traffic and was in its inception intended to be so, but although our modern ideas, and in this particular instance, the development of the tramway, render the intentions of the original builders obsolete, it is worth while, from the point of view of history, to preserve the ancient record and to provide for our modern ideas and requirements by constructive rather than destructive process. As a matter of wise policy, it would be better as an adequate provision for Southampton's present and future traffic requirements to retain the Bargate and construct roads on both sides of it and the proposal to remove it is but the counsel of unwise parsimony. There is, however, little doubt that the application of the provisions of the Ancient Monuments Protection Act will rescue Southampton's Bargate from destruction.

COMPETITION NEWS.

Durham.—The Board of Guardians have decided that not more than six architects be invited to submit plans for the erection of a new hospital for eighty beds of not more than two storeys high, to be extended if necessary, and that an assessor be appointed by the Royal Institute of British Architects. Provision will be made for an administrative block, containing dispensary, nurses' dining rooms, bedrooms, sitting rooms, kitchens, &c., together with offices, male and female wards with offices, duty rooms, &c., children's ward, isolation ward, and laundry.

Rotherham.—It has been decided to erect new Y.M.C.A. premises on a site in Howard Street at an estimated cost of £10,000. The designs, which have been prepared by Major J. E. Knight, were selected in competition among local architects.

Southport.—The Town Council at their last meeting adopted the following minute of the Education Committee: "That competitive designs be obtained for the erection of a technical school on the site of the present Skating Rink, together with the necessary alterations to the front portion of the building for administrative and medical purposes, at a cost not exceeding £16,000; and alternative designs showing an entirely new building on the site, together with estimate of the cost."

ILLUSTRATIONS.

PULPIT IN RAVELLO CATHEDRAL.—BISHOP'S THRONE IN S. LORENZO EXTRA MUROS, ROME.—S. PAOLO EXTRA MUROS, CANDELABRUM IN MARBLE.—MONREALE CATHEDRAL, SICILY, DETAIL OF CLOISTER.

These views of "Cosmatesco" art are in accompaniment of Signor Melani's article. Further illustrations will be included in our next week's issue.

THE LANTERN, ELY.

The central tower of Ely Cathedral fell in 1322. The octagon was begun the same year, and completed in 1328 by Alan of Walsingham. In 1328 the lantern was started, and finished fourteen years later.

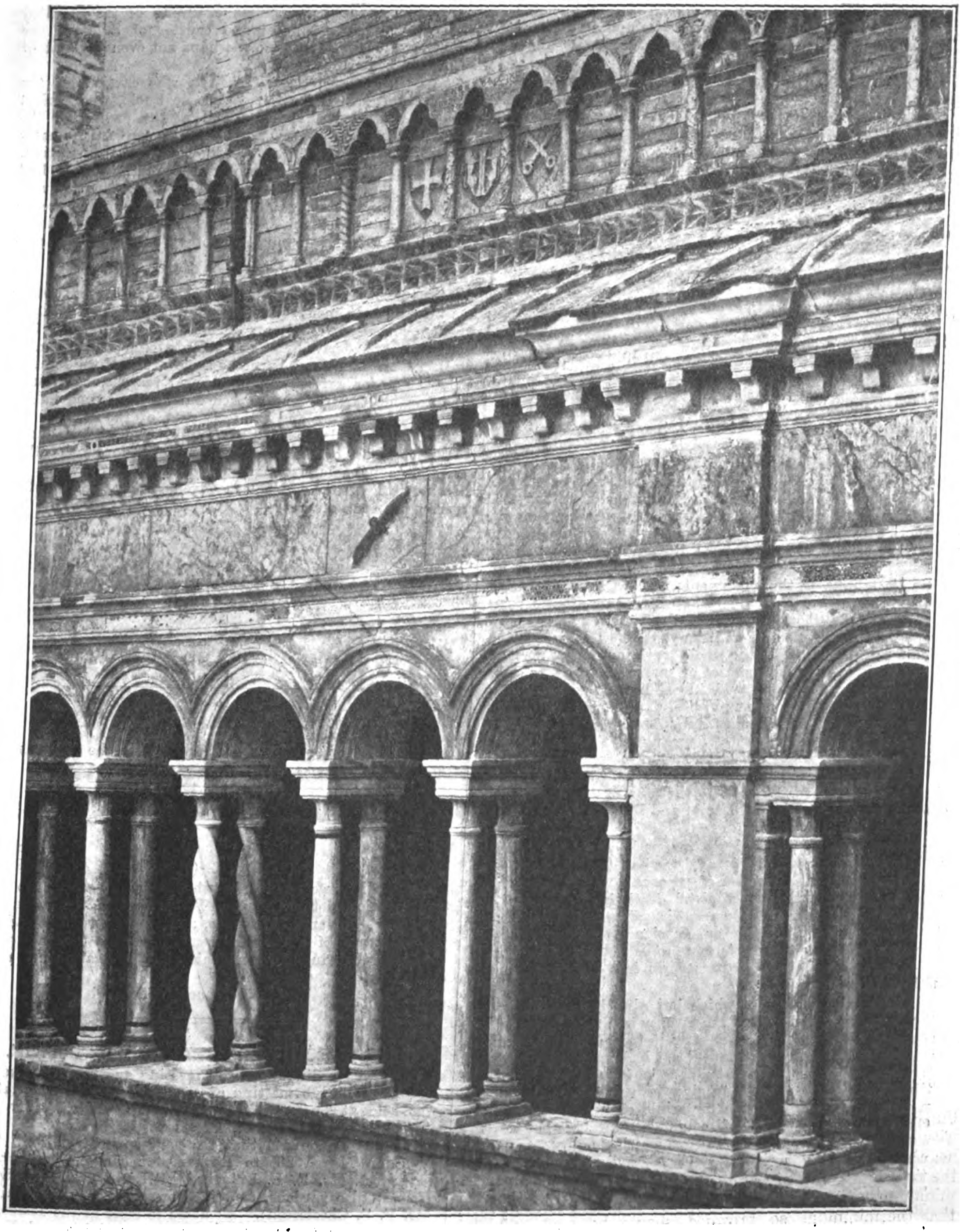
OXFORD COLLEGE SERIES. No. 183.—JESUS.

Our plate in the Oxford College Series this week shows the interior of the common-room of Jesus College.

SO-CALLED "COSMATESCO" ART AT ROME, LONDON AND ELSEWHERE.

By ALFREDO MELANI.

MOSAIC was not only used for the decoration of apses and cupolas; it embraced another branch, mosaic or marquetry in marble, the *opus tesselatum* which ornamented the pulpits, seats, ciboria, altars, cloisters, and paving of many basilicas at Rome, and has left us some remarkable specimens in Sicily, as well as in continental countries and the southern towns of Salerno, Capua, Ravello, Alba-Fucense, besides making a timid appearance in Tuscany. This mosaic is composed of geometrical figures, circles, stars, rectangles with centralised designs grouped around circular flagstones, called in the Middle Ages *rotae*, of porphyry, serpentine, verde antique or gold enamels; *auro vitris et marmore diverso*, as may be read on the Corneto ciborium (near Rome) of 1209. And whether in the decoration of subjects enclosed within architectural lines, or in the pavings, the type does not change; moreover, certain inscriptions inform us that several pavings have the same authors, designers of many inlaid monuments, pulpits, seats, ciboria, altars, cloisters, to which I have already alluded, not to mention the candelabra, tombs, doors, porticoes, and parapets of choirs.



Photograph by Alinari, Florence.]

DETAIL OF CLOISTER FROM ABBEY OF SASSO VIVO, NEAR FOLIGNO — The work of PIETRO DE' MARIA.

Architectural lineal motif has often a secondary importance in this art, which thus fascinates more by reason of its mosaics or marquetry than by its architecture. Indeed, several of the most important monuments with which we are concerned—the seat and pulpit in S. Lorenzo at Rome, the pulpit at Alba-Fucense, the parapet of the pulpit to the right of the church at Salerno—play a very modest part architecturally in comparison with that of their mosaic.

Thus, no one would think of praising the artists of our mosaics to the skies, for they are geometricians rather than artists, patient men who repeat themselves, motionless in the rhythm of an art in which the striking efforts of personality are unknown. The marquetry in marble of Byzantine art at Constantinople, Ravenna, Parenzo, Milan, are much better, possessing more variety and sparkle than those of which we are speaking. In addition, these mosaics closely resemble the Arabian style of *motif*, so that the artistic spirit of Sicily must have been fascinated by them, since we know the Arabs at one time ruled over this Italian island. Indeed, the cathedral of Monreale and the Palatine Chapel at Palermo were splendidly decorated, especially after the first half of the twelfth century, and here we shall find designs more Arabic than at Rome, which was far removed from all Mussulman influence.

And as soon as the city of the S.P.Q.R. and of the Papacy regained its wealth in the twelfth century it was able to encourage the new art, making people forget the monuments built outside Rome and its neighbourhood, and leading them to believe in a monopoly which did not exist, the monopoly of one family, the "Cosmati." It goes without saying that this was the consequence of imperfect research as to the so-called "Cosmatesco" art; but in reality the truth of the matter is what I am going to expound to you. Thus, the art with which we are concerned ought really to be called "Siculo-romana," for, if it flourished more at Rome than in Sicily, yet this island helped to form the so-called "Cosmatesco" style. No one will wish to maintain the contrary in favour of Rome and its neighbourhood from remembrance of an artist who in 1229, in the cloister of Sassovivo, engraved his name and the declaration to seek inspiration from the Roman style—*romano opere et mastria*. Pietro de Maria, the artist of Sassovivo, merely wished to state by his words that a Roman style existed in his time, and that he wished to follow it. This is incontestable, as is the fact that the Roman "marmorai" led to a considerable development of the mosaic of the so-called "Cosmatesco" monuments in various architectural styles, from Roman to Gothic; from the portico of San Lorenzo at Rome or the cathedral of Civita Castellana to the monuments which Cosma di Pietro Mellini constructed in the Eternal City in æsthetic communion with the ciboria of Arnolfo, the Tuscan master architect and sculptor. Be this as it may, the new denomination which I propose expresses the whole truth, not only a part.

And this is how the mosaics or marble marquetry came to flourish in the Abruzzi, and Alba-Fucense and Ravello to possess never-to-be-forgotten pulpits, expressive examples of a "marmoraia" art, honoured by Mediæval masters, an art which had the support of Tuscany in the twelfth and thirteenth century, even of Giotto, who introduced architectural marquetry into his frescoes. You have already seen that this marquetry covers the surfaces of the thirteenth-century façades at Pistoja, Lucca, and Pisa, of which I have spoken in *The Architect.*

Thus at Rome the "Siculo-romana" art of the twelfth and thirteenth centuries decorated the basilicas and convents, and attracted a large number of exponents; and these artists used to sign themselves *magistri doctissimi* (cathedral of Civita Castellana), or *in marmoris arte periti* (cloister of S. Scolastica at Subiaco), or occasionally modestly styled themselves *lapidum dogmate non merus* (façade of S. Maria at Castello), ambitious to pass down into history with the title of *Civis Romanus.*

The wealth of Rome, which has already been noticed—that is to say, the power of the Papacy in the centuries of the so-called "Cosmatesco" art—facilitated all artistic expansion, and the "Siculo-romana" art had its centre at Rome, thanks to the abundant material to be found there. Indeed, the Roman "marmorai," to give them their official denomination, often adopted the materials of pagan and palæo-Christian art: pieces of columns, suitably hewn, lent themselves to the circular surfaces which they used to excess, whilst the slabs in the cemeteries, being very fine, adapted themselves to the small pieces of the rectangular panels. Thus they were sacrificed. This confirms the fact that the Roman cemeteries (catacombs) also numbered amongst their enemies the "marmorai," no less unworthy than other enemies, since as soon as they began to work extensively for Rome and accepted work outside Rome, as at Corneto and Orvieto, they always went to the cemeteries for material.

Our "marmorai" have been greatly studied, but the general opinion in Italy and abroad still considers that the art of these artists begins and ends with the "Cosmati," who were, to speak correctly, workers in mosaic-marquetry, or in other words painters, sculptors, and architects in mosaic. We must correct this, however, by stating that the art which we are studying has many followers, and two families, as we shall see, share the gift of this art, which was entirely assigned to the "Cosmati."

First of all we must mention that these "Cosmati" (a name derived from the Italian Christian name Cosma, a contraction of Cosimo) were neither the first artists nor those who produced the finest examples of the so-called "Cosmatesco" art. Neither the cloister of S. Paul nor that of S. Giovanni Laterano, perhaps not even the seat of S. Lorenzo, belongs to them.

One of the first, if not the first, who carried out the marble marquetry in the Lazio was one Paolo, who worked at the cathedral of Ferentino and at the paving of the casino of Pius IV. at the Vatican. He lived in the early years of the twelfth century, enjoying a great reputation, as is proved by an inscription of Ferentino, and he had four sons "marmorai"—Giovanni, Pietro, Angelo, and Sassone—who in 1148 executed the ciborium of S. Lorenzo at Rome, and who were contemporaries of the brothers Pietro and Niccola Ranucio, another family which preceded the "Cosmati." The head of the Ranucio is not unknown, and this family leads us to the middle of the twelfth century, to Sta. Maria in Castello at Corneto, which has already been mentioned. As for the "Cosmati" (from whence comes the arbitrary denomination of the "Cosmatesco" art, derived, as has already been said, from an Italian Christian name borne by some artist of the family), they must, for artistic and historical reasons, be divided. The Tebaldo family, who worked during the second half of the twelfth century and the first part of the next, is one branch of it, and the Mellini family, who worked during the second half of the thirteenth century, forms the other. It is thus possible, from recent research, to draw up two genealogical trees, which are given below, and which correct previous studies:—

Lorenzo di Tebaldo.
(1162)
|
Jacopo I.
(1205-1207-1210)
|
Cosma
(1210-1231)
|
Luca (1231-1254-1255) | Jacopo (1231)

The dates are given in accordance with the documents.

Cosma di Pietro Mellini.
(1264-1265-1279)
|
„ (1293) | Giovanni (1299) | Adeodato (about 1300) | Pietro (1292-1297)

In reality, we cannot be absolutely certain as to the identification of this Cosma di Pietro Mellini with the father of Jacopo, Giovanni, Adeodato, and Pietro; we might admit the existence of a second Cosma, but this does not alter the general deduction, and this must be maintained most absolutely.

(*To be concluded.*)

THE ARCHITECTURAL ASSOCIATION.

A COMBINED ordinary general meeting and Camera, Sketch, and Debate Club meeting of the Architectural Association was held at Tufton Street, S.W., on March 16, Mr. W. Curtis Green, F.R.I.B.A., President, in the chair.

It was announced that the next spring visit will take place on March 28, to Roehampton House, Roehampton (architect, Mr. E. L. Lutyens, F.R.I.B.A.), and St. Serf's House; also gardens, &c., at Downshire House (architect, Mr. F. S. Chesterton). Members to meet at the Lodge, St. Serf's House (near Roehampton Gate, Richmond Park), Priory Lane, at 3 P.M.

A vote of thanks was passed to Professor Adshead and Mr. Ramsey for granting permission for a party of members to visit the improvements to the Duchy of Cornwall Estate, Kennington, on Saturday, March 14.

Mr. Joseph Pennell then read a paper entitled

The Wonder of Work.

Work to-day is the greatest thing in the world, and the artist who best records it will, said Mr. Pennell, be best remembered. Work has always been an inspiration to artists.

Under the Church, work—the building of the Tower of Babel and the Temple—was the subject of endless imaginings by painters, sculptors, and gravers who never assisted at the functions they illustrated. This—this sort of creation or invention—art students in America called "genius work," because it was "done out of one's head." In Europe it is called "scholarly," and is concocted from a classical dictionary; a trip for a few weeks to Greece or Italy is useful but not necessary, and adds to the expense. Illustrated postcards may be used instead.

Now, as to these popular forms of art—the backbone of academies, the source of shillings—there is nothing to say. The results, in a few instances, have been works of art because of excellence of technique. But the man with the greatest imagination is the man with the greatest imagination about his own surroundings, which he uses so skilfully that we call the result imagination, and this is the way the greatest art of the world has been created.

After referring to the early Italian painters, Mr. Pennell said the first artist he knew of to see the pictorial possibility of work, the Wonder of Work, was Rembrandt.

Rembrandt saw that his father's mill was beautiful, and by his renderings of the windmills and the dykes of Holland proved them the great works of his little country, and showed they were pictorial. And he drew, etched, and painted them because he loved their big powerful forms, their splendid sails, the way they lorded the land and kept out the sea. They were for him the Wonder of Work, the wondrous works of his time, the works that were all about him.

Rembrandt has made a perfect artistic composition as well as a true mechanical rendering of these mills and dykes.

Then came Claude and found the Wonder of Work in commercial harbours, dominated by necessary lighthouses, and in the hustling cities of Civita Vecchia and Genoa—for it is amid the work, the life of one's own time, that the Wonder of Work is to be found.

Canaletto followed, and saw in the building of Venice the same inspiration that Tintoret found in her history, Titian in her great men. And Piranesi discovered the prisons, the Carceri, to be as enthralling as the ruins of Rome.

Turner imitated Claude. Claude saw his subjects about him; Turner used Claude's motives, and tried to rival his predecessor. Claude painted what he saw in his own time; Turner tried to reconstruct his unconscious rival's facts out of his head, and failed even in his rendering of work about him, signally in "Steam, Rain, Speed," where an impossible engine conducts itself in an incredible fashion in a magnificent landscape. Turner was not here trying to carry on tradition—the only thing worth doing in art—but to *embêter les bourgeois*. Turner's Carthage would not stand up if built—Claude's palaces do.

Whistler showed for the first time how, in London, "the poor buildings lose themselves in the dim sky, and the tall chimneys become campanili, and the warehouses are palaces in the night, and the whole city hangs in the heavens and Fairyland is before us." That is the Gospel of the Wonder of Work.

Though I have never studied under Whistler, said Mr. Pennell—never was his pupil—he is and always will be my master—the master of the modern world, the master who will endure. Because he glorified the things about him, the things he knew, by "The Science of the Beautiful." What are the Thames etchings—"Wapping," "The Last of Old Westminster," "The Nocturnes"—but records of work? A fact most critics have never realised. But Whistler was a many-sided—a so many-sided—genius that his many essays in many fields are only just becoming known, and this study of work—the most difficult study in the world, under the most trying conditions—was never abandoned by him till he said what he wanted, in the ways he wanted, not till he had made a series of masterpieces which live and will live for ever.

But there was a man—all the great have gone from us in the last few years, which accounts for the momentary popularity of the little—there was a man who gave his later life to the Wonder of Work—Constantin Meunier.

This was his life-work, and the life of his world, the world, as with Whistler, around him, for that is best which nearest lieth. Courbet, in work, had influenced Legros and Brett and Millet and Segantini, and Ford Madox Brown, the man too big to be a pre-Raphaelite, whose biggest picture is work—"Work in London"—the man who will one day make Manchester a place of pilgrimage because of his pictures of work and of war.

In France, Germany, and Italy the Wonder of Work around us has been made the subject of endless commissions from the State to artists mostly realistic. But records of facts, facts of one's own time, here and in America, are scarcely ever recorded. Go to the Royal Exchange, and you will find Wat Tyler, Phœnicians, Britons painted blue, and everything in the history of London that can be made into a painting of the past, and not a single record of the present. Where is the building of the Tower Bridge, the electric light works, the docks, the Blackwall Tunnel, the trams, the Tube, or any of the other works by which this age, this workaday age, has distinguished itself, all of which are worth painting? In America we have imaginings of Holy Grails, Pied Pipers, Religious Liberties, when one fact in decoration about steelworks, skyscrapers, or the Brooklyn Bridge would be worth the lot in the future, when these tactless fancies are whitewashed out, or made a good ground to paint on. In France Puvis de Chavannes magnificently showed the way to combine the old decoration with the new realism. His life-work at Amiens is pure convention, so are his designs in the Boston Public Library, and in the Sorbonne; but they are the most perfect examples of decorative, imaginative, conventional work in the modern world.

John Lavery has made, in Glasgow, a decoration out of shipbuilding which is worth the whole wall coverings of the Royal Exchange and the Houses of Parliament put together. There are the Graves brothers' work at Streatham—only no Streatham is in them; and some others have done things in South London, which are scarcely of South London—Anning Bell and Walter Crane—but some are amusing. But decoration is a difficult matter, and Lavery has done much for Glasgow. Professor Moira has shown his power in various places.

From the time he built cities of blocks and sailed models of ships to them across the floor in his father's office, said Mr. Pennell, till he went to the Panama Canal, he had cared for the Wonder of Work. There are others who care—Brangwyn has cared, and so have Sauter, Muirhead Bone, Strang, and Short.

But it is to America we must turn. He tried to do what he could in New York, Chicago, San Francisco, the coal mines, Niagara—and here, on the Continent, and at Panama.

He went to Panama because he believed that in the making of the greatest work of modern time he should find his greatest inspiration. This is the day and the time of the Wonder of Work. Within a few years, with the coming of electricity, the mystery of work, the smoke revealing, concealing mystery, will have rolled away for ever. And to-day the greatest works that man has ever undertaken are in progress in Europe and America. So he started on a trip of 15,000 miles in search of the most wonderful Wonder of Work in the world. The day he landed in Colon he found it.

Had he not had previous experience in trying to draw work, he could not have done even what he did; but the study of great architecture is a great aid, for the locks are architecture. The workmen he hardly touched—they are the details in the Wonder of Work they have created. Where the work is fiercest, there the fewest workers are to be seen. It is only when they knock off you see that thousands are at it.

We have recently been told that art will disappear in fifty years (by a person who says he will call his last book—with possible appropriateness—"Vale"). But, though he will disappear, and Post-Impressionism will be swallowed up in shopkeeping, and though the mustard pot has gone with the soulful doggie, and the tearful baby rival of the Dresden Madonna, the artist who has something to say in his own way about his own time, and can say it, will live, and his work will live, with Rembrandt, Velasquez, Franz Hals, Meunier, and Whistler—artists who painted and drew the work and life about them, carrying on tradition, and never regretted the past. And art which shows life and work will never die, for such art is everlasting, undying—"The Science of the Beautiful."

Discussion.

Mr. Frank L. Emmanuel, in proposing a vote of thanks, said he thought that if one were asked to produce a symbolical figure of the Wonder of Work one could not do better than paint a faithful portrait of Mr. Joseph Pennell. His tireless energy in producing a truly stupendous output of consistently beautiful works of art in itself constituted him an unnatural phenomenon. When he (the speaker) was a schoolboy, shirking work with all his heart, he used to get the keenest delight in seeing the contributions by Mr. Pennell to *Scribner's Magazine*. Though young and inexperienced, he became convinced that the illustrations were far and away ahead of anything being done here. Among those which still remained in his mind's eye was an earlier depiction of Work representing a Tuscan stone-mason's yard. This series was followed by many another fine representation of Work, notably by illustrations of Leeds or Sheffield. Mr. Pennell's successes were an extra spur to effort on the speaker's own part when making drawings in the manufacturing towns of the North for the *Manchester Guardian*. In the course of the most enjoyable lecture, Mr. Pennell said that Turner imitated Claude; but that was a single item in a very crowded and independent career. Turner certainly at one period set out to try and beat Claude on his own lines. But, had those experiments never been made, there was enough left of entirely original effort to constitute Turner a giant—and an inventive one at that. That Turner could draw Work was evident in his marvellous studies and paintings of shipping. Mr. Pennell cast a stone at Turner's drawing of architecture; but his architectural work was built on splendid foundations, and it would take an avalanche of stones to overthrow it. No one would dispute the lecturer's dictum that Whistler would endure; but time will prove that while Whistler's masterpieces—his Mother, his Carlyle, his Thames etchings, and other marvellous things—would endure, much else that was now over-rated will find its true level, high as that may be. Mr. Pennell had asserted that it was far easier to paint a heavenly host or a dream city in one's studio than to make a decoration out of a group of miners or to draw a rolling-mill in full blast. It might be easier, but there were few who could do it satisfactorily. Ruskin had been kind enough to take an interest in his (the speaker's) youthful efforts. On being shown a water colour of Conway Castle enveloped in a purple shadow, with a straw-coloured saw-mill as a foil in the foreground, Ruskin said: "Young man, never depict any building that is less than two hundred years old." That axiom was hard to agree with. There was endless matter for the artist in up-to-date subjects, in modern machinery, in the work around one. And in such subjects lay the scope for originality; not, as the "ists" would have believe, in depicting unrecognisable objects in ways each more absurd and hideous than the other.

Mr. P. H. Adams remarked that what had struck him about the lecture and its illustrations was the love of humanity depicted in the pictures. He remembered being given a book of Mr. Pennell's some few years ago; it was a delightful series called "From Ludgate Circus to Charing Cross," and showed the people of twenty years ago in a wonderfully sympathetic way. Most people depicted things that were past; in their lecturer's work they came to the teeming present, and it showed that, after all, life was one grand opportunity.

Mr. H. M. Fletcher thought they had had a real paper, for it left one feeling battered about the head. Mr. Pennell had battered them about pretty freely, but not in an unfair way. The audience would agree in the admiration expressed for the work of engineers, so long as the latter did not attempt to be architectural, but treated big things simply and in the direct way suggested by the proposition before them. He would have liked Mr. Pennell to have visited what was, in his opinion, one of the greatest works in England—namely, the Birmingham water-works in Radnorshire, for it would have been a subject after his own heart. The composition of lines and masses there was one of the simplest and most effective things he had ever seen in his life. The masonry dams are completed in a plain engineering way, and are 600 feet across and from 90 to 100 feet high. The top of one is curved in order to resist the thrust, and a carriage road is carried above on arches, through which the water flows. Speaking to one of the engineers, he said he supposed it was as great as the Assuan Dam; the engineer replied that they would think very poorly of themselves if they could not do better masonry than at Assuan.

Mr. V. H. Flower said that although it was fully twenty years ago since he had heard Mr. Pennell at the Royal Institute of British Architects, the lecturer seemed to be younger than ever. In his paper he had given architects credit for scaffolding; in reality that work was left largely to the contractors. In his slides showing the portrayal of work there had been a jump from an Assyrian bas-relief to Rembrandt. But such books as the Nuremberg Chronicle recorded the building operations of mediæval times. A good many of the Illuminated Missals illustrated various ecclesiastical edifices.

Mr. W. Curtis Green thought that perhaps the most interesting part of the whole paper was that dealing with the lecturer's own drawings. He could have wished th Architectural Association School had been there to hear and see. The very subject should be a sort of inspiration. It taught them that scholarship or craftsmanship were not sufficient to produce live art. When he (the speaker) started to draw in pen and ink a magnificent volume by Mr. Pennell was presented to him on pen drawing; that work was a mine of information. In it the author declared that no one in England could draw architecture at all. Mr. Pennell always loved the romantic side of his subject. Some years ago he (the speaker) was led to some remote hamlet in Normandy by seeing the illustrations of it by Mr. Pennell in a guide-book. Well, he had got over the disappointment now. All students of draughtsmanship and architecture were indebted to Mr. Pennell.

The vote of thanks was then passed with acclamation.

Mr. Pennell confessed that it would not be correct at the present day to say no one could draw architecture. Turner could not do so, and his influence for many years prevented other people doing it properly. Turner never studied it, and made more mistakes in his architecture to the square inch than anybody. Claude's architecture, on the other hand, was right. What rendered the Panama Canal so wonderful was the terrific long lines of concrete, the great walls without any breaks; the sheer lines and the great buttresses were incredibly fine. In the United States there were some wonderful effects in concrete. The simplicity of this material was so wonderful. Colour effects he had seen with it were finer than anything possible with stone work. In the forthcoming exhibition at San Francisco the Arts building was to be carried out in reinforced concrete, as also will a lot of other buildings more or less permanent. The trouble about consulting the illuminated missals was that they were done by monks who had not seen what they tried to illustrate. Everything he had given on the screen was contemporary with the work of the time. He would be pleased to know of other records like the Nuremberg Chronicle. In conclusion, he would ask them, if they could, to use concrete more than in the past. It was a great material.

A combined members' evening and ordinary general meeting will be held on March 30 at 8 p.m. at 18 Tufton Street. Two short papers will be read on the work of the late Messrs. Bodley and Garner and the late Mr. J. F. Bentley. Exhibition of work by these architects. Smoking and refreshments. Result of election of officers and Council for session 1914-15 will be announced.

BIRMINGHAM ARCHITECTURAL ASSOCIATION.

The Excursion to Caen.

The President (Mr. G. Salway Nicol) was in the chair at a meeting of the Birmingham Architectural Association on Friday evening, when Mr. Arthur Harrison, B.A., gave an entertaining address on the Association's excursion to Caen. There was an exceptionally large attendance, and much interest was manifested.

Mr. Harrison remarked that English travellers instinctively went to Caen, remembering how once it was ruled by the same king that ruled in London. It was true that all the rest of Normandy was also part of the English realm, but the monuments of that unimaginable fact did not come home to one so strongly elsewhere. For Caen was especially the town of William the Conqueror, his favourite dwelling-place, the centre of the new kingdom which he created, and his last home; and it was Caen that was chosen for those two characteristic monuments of William's might, commenced in the very year of the Conquest, the Abbaye aux Hommes and the Abbaye aux Dames. The Conqueror built no less than twenty-three convents, but these two were wrung from him by the force of circumstances. The church of St. Etienne, where the Conqueror was buried, must impress all by its stern and solemn grandeur, especially if first seen when the setting sun lit up the west front, so great in its utter simplicity. At such a time it was all vastness and stillness within, and in the darkness one was able to feel the character of a place that relied upon mass, not upon detail. But it was a mistake to think that what was seen was the Conqueror's work, appropriate though it might seem to him. Very little of the original wide-jointed masonry could be seen. The present west front was built up against the original one in 1090, when the lower part of the towers was made, and the aisles vaulted. In 1160 the nave was vaulted, the walls refaced, and the enormous triforium added. The choir was built about 1210, and the spires belonged to the same period. There was once a central spire also, but it succumbed in the sixteenth century. The Church of the Trinity, Queen Matilda's foundation, in which her remains were laid to rest, had suffered from a restoration but was otherwise intact. Like its companion, St. Etienne, the church belonged to the second and third periods of Norman architecture, but the builders seemed to have determined to make the two as unlike as possible. Trinity Church was smaller, lighter, more feminine than St. Etienne. Instead of simple capitals it had elaborate ones, instead of a massive deep triforium it had only a slight arcade, and the remaining features had a similar distinction. St. Pierre was the principal church of Caen. Its sides were a little marred by the loss of some tracery, but it had two features which alone would place it in the front rank—its spire and chevet. The tower and spire, all the more imposing because detached from the church, were built in 1308, but were quite in the style of the thirteenth century. The spire especially was a triumph of architectural skill. It was absolutely devoid of any supports within, and consisted of eight triangular stone sides which were only sixteen centimetres thick. They shot up till they met together at a height of 246 feet above the ground. Yet, light and lovely as was this audacious pyramid of thin masonry, it was so tough and well poised that the wind and wear of seven centuries had never shaken it. It even underwent bombardment. In 1563, that memorable year for the Caennais, Admiral Coligny placed some men on the tower to fire at the castle. The castle naturally responded with its cannon, and made several large holes, which were actually left unmended for more than a hundred years. Hector Sohier, a native of Caen, built the chevet in 1521, and it was a gorgeous example of the eccentric luxuriance which was the mark of Francois Premier architecture. He (Mr. Harrison) must confess that most of what Sohier set up was at the present moment in a shed near the church, because the State had presented the church with a copy of it instead. The chapels had angular sides, and the upper story of the Lady chapel formed, like that at Wells, a complete octagon separate from the choir. This part was pierced with round windows, which contained four circles by way of tracery, but the other windows were marked by an absence of tracery which was characteristic of Sohier. The parapets were the most striking feature, with their elaborate arabesque ornament and their pinnacles of the candelabrum type. The candelabra, standing thus above the chapel roof, have perhaps a symbolical purpose; certainly the whole effect is one of extreme delicacy and refinement. As for the interior of St. Pierre, it had been accused of looking more like an alhambra than a church, and of containing things more curious than devotional. This was perhaps true of the eastern chapels, where many heathen gods could be found. There was, indeed, fantasy enough here, and in the strip of stone lace-work that adorned the apse. The vaulting was extraordinary, most of all in the chapels, where the curved ribs carried a flat ceiling and were weighted with preposterous pendants. These pendants, fulfilling no structural purpose, were a source of danger to those who passed underneath. They had, indeed, often fallen, and, soon after their erection, one killed an unfortunate man in its descent. He thought that an artist set down in Caen to draw pictures of entire churches would choose those which were desecrated. It was a melancholy fact, but these were the buildings which had retained most of their original beauty, and which possessed, in addition to that freedom and absence of self-consciousness which was the true artist's mark upon them, the added charm which time alone could give. St. Etienne-le-Vieux, St. Gilles, the Halle au Ble, and St. Nicholas had indeed suffered from neglect and base uses; but, in all their degradation, they had been spared the last and worst. In the church of St. Gilles in 1864 the choir, with its fine chevet, was pulled down in order to improve the view. At first sight the church looked entirely Flamboyant, but the saw-edged cornice betrayed the twelfth century. The south doorway, which was added in the sixteenth century, just at the last flicker of Gothic art, was extremely original. A low arch was set between two buttresses, and the stonework above was adorned with exceedingly beautiful carving and a finial with a pedestal. St. Nicholas Church was built by the monks of St. Etienne for the population that grew up rapidly round the abbey. It was one of the most curious specimens of Norman architecture, and the more interesting because it had undergone few modifications, and the precise date of its completion (1093) was known. The nave and transepts had the same plain round windows and flat buttresses as St. Etienne, but, unlike the mother church, it retained its three round Norman apses. These were curious and beautiful, the small apses were plain, the central one was decorated with three arcades. No doubt the high conical roofs were a somewhat later addition. The west front had an exceedingly uncommon porch which was more like an aisle let into it than anything else. By way of contrast a Flamboyant tower disported itself at the south-west corner of the church. The church of St. Jean rejoiced in two remarkable towers. The central one had a top storey which, to judge by its pinnacles, was to have been a triumph of the Francois I. style, but it stopped as suddenly as the Tower of Babel, and its unfinished windows stick up like exaggerated battlements. The western one was a real leaning tower, its inclination was not quite 8 feet, rather less than half that of Pisa; but this peculiarity must not make them overlook its other qualities. Indeed, the whole church was picturesque, and there was a noticeable corner at the back entrance behind the choir. After dealing with the quaint beauties of the church of St. Sauveur, Mr. Harrison remarked that if one was asked what was the special architectural distinction of Caen, he thought one would have to put aside all its fine churches and point to the Renaissance hotels. They were altogether *sui generis.* Like the kindred mansions of Fontaine-Henri and Lasson, which the party saw on the road, they were the work of those artists of the Francois Premier period who determined to produce houses of an entirely new character. These palaces were built by the merchant princes who flourished so magnificently in the France of the Renaissance. Those great tradesmen were bourgeois only in the sense that they lived in cities, while the noblesse lived in the country. He wondered at what age the word bourgeois came to connote vulgarity? In the sixteenth century it spoke rather of refinement and a magnificent devotion to the arts. Caen abounded also in less important houses and in courtyards, which they would miss if they hesitated to explore the tunnels that could be seen everywhere among the houses. In concluding his address, which was profusely illustrated, Mr. Harrison dealt with the architectural charms of Lisieux, which possesses many fine examples of old houses of the fourteenth-sixteenth centuries; and of Bayeux, a quiet old cathedral city, which impressed the party by the pleasant run of its streets, their pretty corners, and their old-world recesses and courtyards. He also had many interesting things to tell of the famous *Tapisserie de la Reine Mathilde,* and of Norrey Church, which the President visited on the occasion of his first sketching tour some fifteen or sixteen years ago.

The President proposed a vote of thanks to Mr. Harrison, and remarked that the church at Norrey attracted him because it was a specimen of the cathedral idea on a large scale, and afforded facilities for measurement which larger buildings did not do. With a 12-foot rule one could measure the whole thing from top to bottom.

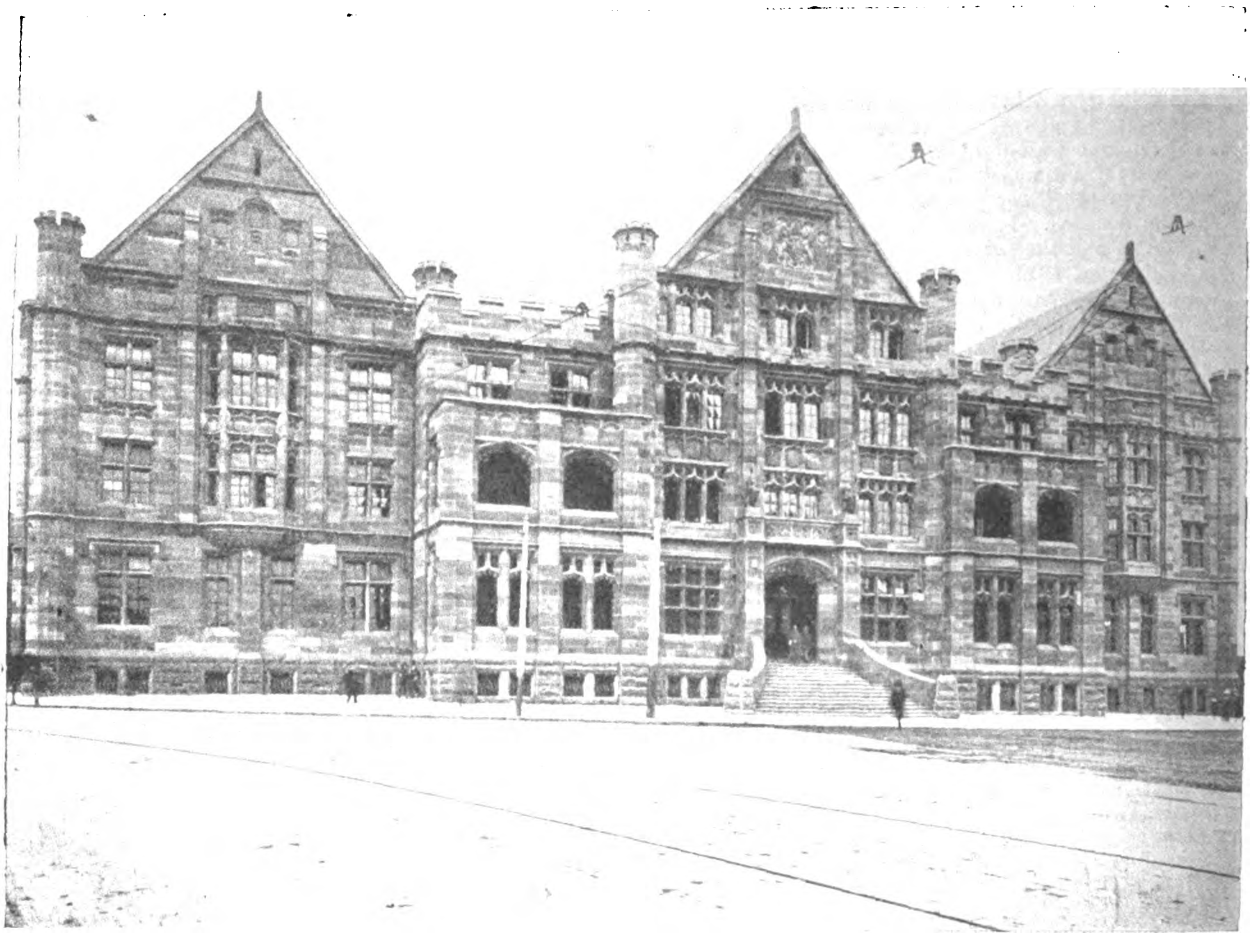
Mr. Chas. E. Bateman seconded the vote of thanks, which was supported by Mr. MacMichael, Mr. Nicol, senior, Mr. Ridley, and Mr. Walker, and adopted with great cordiality.

Mr. Harrison's acknowledgment brought the speech-making to a close.

The company were greatly interested in some choice water-colour drawings of beauty spots in the Caen district, done by Mr. Harrison, and some clever pencil drawings by the President and Mr. Holland W. Hobbiss.

At the conclusion the members dined together at the Exchange Restaurant.

THE British Archæological Association have abandoned their intention of holding their annual congress at Shrewsbury. It is now proposed to hold the congress in July at Canterbury, where the Association had its original meeting seventy years ago.



LAND TITLES OFFICE, SYDNEY, N.S.W.

PUBLIC BUILDINGS IN NEW SOUTH WALES.

ACCORDING to the report of the Department of Public Works of New South Wales for the year ended June 30, 1913, the year's expenditure on public buildings amounted to £751,953 15*s.* 7*d.*, including £82,519 15*s.* 3*d.* for the Commonwealth Government, and £308,240 5*s.* 4*d.* for other State Departments, the bulk of the latter amount being on behalf of the Department of Public Instruction.

Perhaps the most urgently needed of the works completed was that comprising the new Land Titles offices at the eastern end of King Street and facing Hyde Park, of which we give an illustration. A contract for completion of these offices was let in December 1909 for £83,977. Expenditure to date has been £91,088. The building is of Perpendicular Gothic design, carried out in Pyrmont sandstone with trachyte base. Provision is made for extension by the addition of another wing on the northern side, should further space be required. A special system for heating and ventilation has been adopted, and, so far as is practicable, the building has been made proof against fire. Although the accommodation provided is sufficient for immediate necessities, indications are not wanting that the extension contemplated in the design will be required at no distant date.

The contract for £158,765, let in April 1910, in connection with the new abattoirs at Homebush was completed during the year, and other necessary works, yards, sheds, pens, &c., have been proceeding by day labour and are well advanced. Provision is made for the killing of 504 cattle, 11,270 sheep, 480 calves, and 1,250 pigs daily. The buildings, &c., have been designed so that extensions may be made without inconvenience. A branch railway connecting with the main system has already been provided, together with roads, platform walls, &c., and the construction of isolated houses for the slaughtering of diseased animals and the treatment of offal and by-products is in progress. The total expenditure, including payments on the contract above referred to, amounts to £393,252.

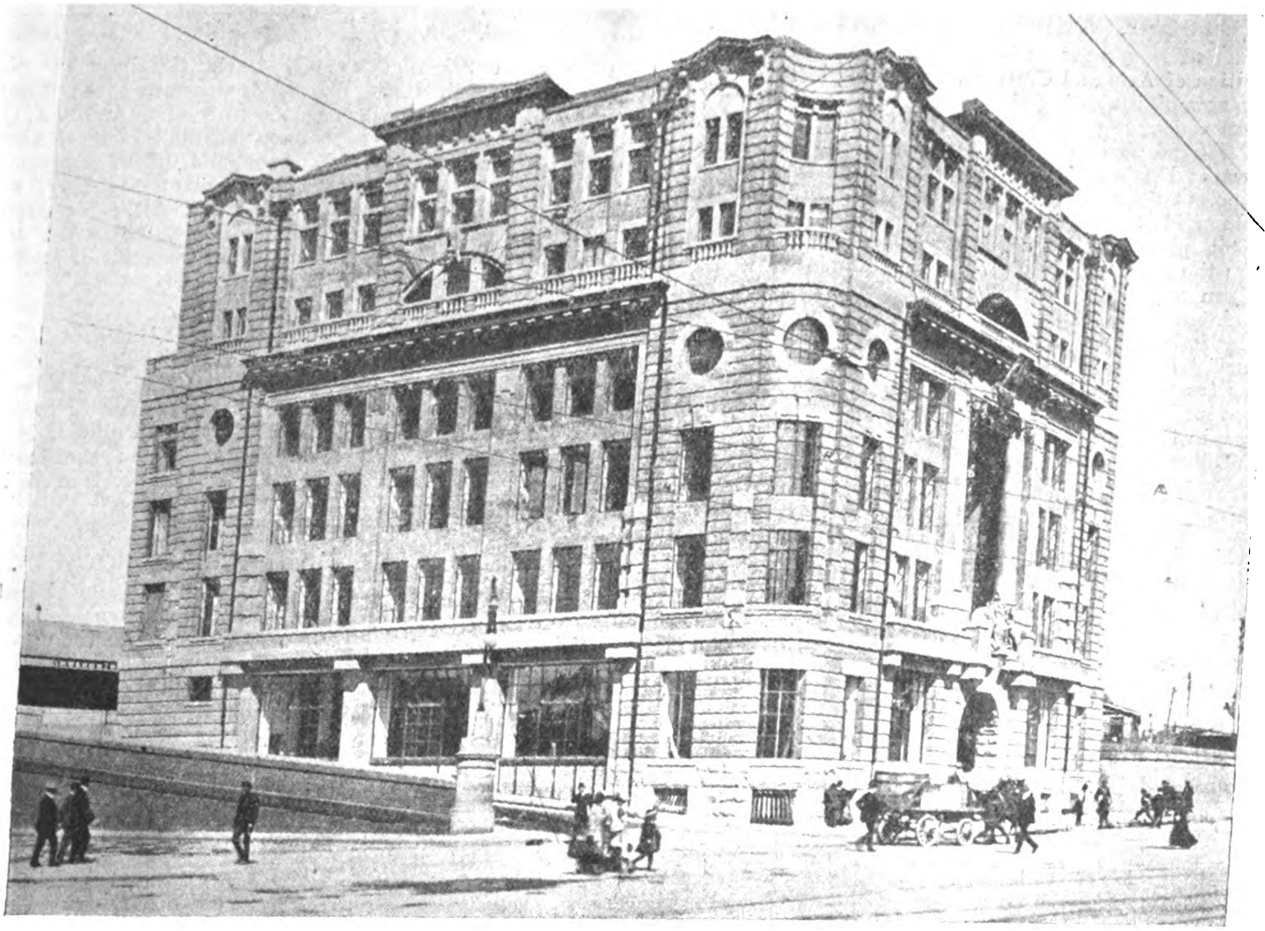
The additions and extensions to the Medical School, Sydney University, an additional ward pavilion at the North Sydney Hospital, and the building for the additional accommodation of the nursing staff at the Royal Prince Alfred Hospital were completed during the year, expenditures being £47,015, £6,071, and £11,631 respectively.

The Parcels Post Office (see illustration) which is being erected for the Commonwealth Government at the Central Railway Station, and for which a contract was let in May 1911, is approaching completion. The outer walls of the building are of brick, relieved by sandstone dressings, with base of trachyte; the floors are of reinforced concrete overlaid with timber. A modern electrically-driven equipment for dealing with the rapid handling of parcels will be installed.

Comprehensive plans and estimates were prepared for additions to the Sydney Hospital, new offices for the Department of Agriculture, which at present is accommodated at the Department of Lands, and for new premises for the Government printer. The estimates ranged from £84,000 to £237,900, and were submitted for the information of the Parliamentary Standing Committee on Public Works, without whose report and the authority of Parliament no work costing more than £20,000 may be undertaken.

The value of the work carried out by day labour, including work at Daceyville, was £503,107, of which £231,051 was paid in wages, the balance being expended in the purchase of material.

The large number of new buildings being erected in the Metropolitan area, and the numerous additions or alterations to existing structures, with their contingent complicated systems of staging, scaffolding, hoists, &c., kept the inspectors employed in connection with the provisions of the Scaffolding and Lifts Act busily engaged. An unusual feature of the year's work has been the number of two or more storey additions to existing premises, the same being in occupation. This work has been carried out in every case without injury to the public, occupiers, or workmen, notwithstanding the fact that awkward and dangerous "underpinning" was necessary, and that heavy and cumbersome girders had to be negotiated into position in limited space.



PARCELS POST OFFICE, CENTRAL RAILWAY STATION, SYDNEY N.S.W.

SHEFFIELD SOCIETY OF ARCHITECTS AND SURVEYORS.

"AN Architectural Tour in Central France and Burgundy" was the title of an instructive lecture given by Mr. W. S. Purchon before members of the Sheffield Society of Architects and Surveyors at the University on the 12th inst.

The lecturer described a tour arranged last year as a summer vacation course associated with the Department of Architecture at the University. The places visited were Troyes, Sens, Villeneuve-sur-Yonne, Auxerre, Vézelay, Avallon, Semur, Dijon, Beaune, Tournus, Paray, Autun, Nevers, Bourges, Blois, and Chartres.

Mr. Purchon dealt with a number of important buildings which were studied in the various centres visited. Good examples of Roman work, he said, were seen on the tour, showing how Mediæval detail was gradually evolved from it. They saw something of that great struggle with structural difficulties which led to the glories of the thirteenth century, and learned that the Mediæval builder was not a mere copyist of earlier work, but endeavoured to solve the special problems put before him.

They were charmed with the playful fancies of the time when the architects turned again for inspiration to Classic examples, and were impressed with the beautiful proportion and quiet dignity of some of the work of the later Renaissance, and from baroque and rococo examples they were able to appreciate the value of restraint.

The lecturer drew attention to the western wing of the château at Blois (1635-40), which he instanced as a triumph of the Italian forces, not quite complete, perhaps, for the steep roof was still retained, but the exact symmetry of the design and the "correct" use of the orders show that Mediæval ideas had given way before the onslaught of the rules and regulations of the later Renaissance. He referred to this as "part of a great movement, for people were getting more formal in their conversation. At the present time an attempt is being made to run a formal movement in architecture against the current, for in all branches of art and in life itself we are getting less and less formal."

Of the modern work some called for admiration, while other specimens drew attention to the necessity for hesitation before English architects plunged recklessly into the copying of French methods. In some of the small towns visited the students were particularly struck by the retention of the Mediæval spirit, and in others by the town planning schemes.

The President, Mr. A. F. Watson, was in the chair. A vote of thanks was accorded on the proposition of Mr. Horace Wilson, seconded by Mr. C. F. Innocent, and supported by Dr. Scurfield and Messrs. W. J. Hale and J. R. Wigfull, the latter of whom referred to a tendency at the present time to belaud the doubtful beauties of stucco, and the tame and commonplace work executed by the architects of the early part of the last century.

BRITISH SCHOOL AT ROME.

AT a meeting on Monday last at St. James's Palace of the Council of the British School at Rome, the following appointments to the Executive Committee and the Faculties of the school for the ensuing year were made:—

EXECUTIVE COMMITTEE.—Lord Esher (Chairman), Lord Plymouth, Lord Redesdale, Right Hon. Lewis Harcourt, Sir Charles Holroyd, Sir Frederic Kenyon, Sir Edward Poynter, Mr. J. S. Sargent, Sir George Frampton, Sir Thomas Brock, Sir Aston Webb, Mr. Reginald Blomfield, Professor J. S. Reid, Mr. Arthur Smith, and Mr. John Penoyre.

FACULTY OF ARCHÆOLOGY.—Mr. O. M. Dalton, Mr. A. M. Daniel, Sir Arthur Evans, Mr. G. H. Hallam, Professor F. J. Haverfield, Mr. H. S. Jones, Mr. G. A. MacMillan, Mr. John Penoyre, Dr. R. Lane Poole, Professor J. S. Reid, Mr. Arthur Smith, and Sir Charles Waldstein.

FACULTY OF PAINTING.—Mr. George Clausen, Mr. A. S. Cope, Mr. Dermod O'Brien, Sir Edward Poynter, Sir William Richmond, Mr. Charles Ricketts, Mr. J. S. Sargent, Mr. Charles Sims, Mr. Wilson Steer, and Mr. Henry Tonks.

FACULTY OF ARCHITECTURE.—Mr. Reginald Blomfield, Mr. W. Curtis Green, Mr. W. R. Lethaby, Mr. E. L. Lutyens, Sir Robert Lorimer, Mr. Ernest Newton, Professor C. H. Reilly, Mr. J. W. Simpson, Mr. Leonard Stokes, and Sir Aston Webb.

FACULTY OF SCULPTURE.—Sir Thomas Brock, Sir George Frampton, Sir W. Goscombe John, Professor Edward Lanteri, Mr. T. Stirling Lee, Mr. Bertram MacKennal, Mr. F. W. Pomeroy, Mr. J. Havard Thomas, and Mr. F. Derwent Wood.

DRAWINGS OF THE EXHIBITION BUILDINGS DEUTSCHE WERKBUND-AUSSTELLUNG.

We referred in a previous issue to the forthcoming Cologne Exhibition of Arts and Crafts; and, having had the opportunity now of inspecting the drawings, we can offer a few remarks concerning them. In a slight pamphlet issued by the Werkbund abundant reference is made to art and beauty and taste; but we must assume that Continental ideas on these points differ somewhat from British ideals. We should be prepared to say that exhibition buildings are on a different plane of design from permanent work (offering this in the direction of an excuse, be it understood), had we not been repeatedly assured that the Werkbund erections were intended to express the latest word in architectural and artistic qualities. The plans of the various pavilions are sufficiently good in most cases, though the hospital wards suffer (as we think) from deficiency of light and also lack cross-ventilation. The tea-house is planned, as regards shape, in the manner of the King Edward VII. Sanatorium at Midhurst, and shows a pleasing perspective, viewed from the front. But for the most part the elevational designs show an utter disregard for style and architectural conception. We can cordially approve the plans of a modern dwelling-house and the views of the Essen and Bremen-Oldenburg houses, whilst the interior of the main hall is decidedly architectural; but this is a small proportion of all there is to be seen at 16a John Street, Adelphi.

LONDON COUNTY COUNCIL.

Thames Embankment Improvement Scheme.

The London County Council this week sanctioned the expenditure of £41,200 in respect of a proposed widening of the Albert Embankment. Negotiations have been proceeding for some time past with Messrs. Doulton & Co. with regard to the opportunity which has occurred, owing to the proposed purchase by Doultons of the premises of Messrs. Stiff, of carrying out an improvement at this part of the Embankment. The scheme provides for a widening of a length of 1,230 feet of the Embankment from its present width of 60 feet to 80 feet, and will render possible, in the event of Lambeth Bridge being rebuilt, the diversion and improvement of Lambeth Road and the alteration of the line of the bridge so as to permit of the improvement of the gradients on the Lambeth side. Under the proposed arrangements the improvement of gradients could be effected without interfering with Lambeth Palace.

Of the sum which it is estimated will be spent, £10,000 in respect of property would, in the event of the reconstruction of Lambeth Bridge, be chargeable to the cost of rebuilding the bridge.

The proposed terms of settlement with Messrs. Doulton & Co. provide for the payment of £27,550, to include all purchase money, costs, and compensation. It will not be possible to effect the widening immediately, but the latest date for the surrender of any portion of the land to the Council has been fixed for December 25, 1920. In the interim Messrs. Doulton will pay a gradually decreasing rent to the Council for occupation of the land until the whole site has been handed over to London.

ANCIENT MONUMENTS ACT ADVISORY BOARDS.

In pursuance of Section 15 (1) of the Ancient Monuments Consolidation and Amendment Act, 1913, the Commissioners of Works have constituted Advisory Boards for England, Scotland, and Wales as follows:—

The English Board.

Mr. Lionel Earle, C.B., C.M.G. (Chairman).

Lord Burghclere (representing the Royal Commission on Historic Monuments in England).

Lord Crawford (representing the Society of Antiquaries of London).

Sir Aston Webb, K.C.V.O., R.A. (representing the Royal Academy of Arts).

Mr. R. Blomfield, R.A. (representing the Royal Institute of British Architects).

Sir C. Hercules Read, P.S.A. (representing the Trustees of the British Museum).

Mr. C. P. Trevelyan, M.P. (representing the Board of Education).

Professor F. J. Haverfield, V.P.S.A.

Professor W. R. Lethaby, F.S.A.

Mr. Reginald A. Smith, F.S.A.

Mr. C. R. Peers, F.S.A., Chief Inspector of Ancient Monuments.

The Scottish Board.

Sir John Stirling-Maxwell, Bart. (Chairman); Sir Herbert Maxwell, Bart, F.R.S. (representing the Royal Commission on Historic Monuments in Scotland); Mr. A. O. Curle, F.S.A. (Scotland) (representing the Society of Antiquaries of Scotland); Mr. G. Macdonald, LL.D. (representing the Scotch Education Department); the Hon. Sir Schomberg K. McDonnell, G.C.V.O., K.C.B.; Sir James Guthrie, P.R.S.A.; Sir Robert Lorimer, A.R.S.A.; Mr. J. R. Findlay; Mr. C. R. Peers, Chief Inspector of Ancient Monuments.

The Welsh Board.

Sir E. Vincent-Evans (Chairman); Lieutenant-Colonel W. E. Ll. Morgan, R.E. (representing the Royal Commission on Historic Monuments in Wales); Mr. W. Edwards (representing the Board of Education); Sir E. Stafford Howard, K.C.B.; Mr. E. Neil Baynes; Professor R. C. Bosanquet, F.S.A.; Mr. W. Evans Hoyle; Professor J. Edward Lloyd; Mr. C. R. Peers, Chief Inspector of Ancient Monuments.

A NEW COLONIAL ALLIED SOCIETY.

At the general meeting of the Royal Institute of British Architects on March 9 the chairman announced that the Council, acting under By-law 78, had admitted the Queensland Institute of Architects to alliance with the Royal Institute.

The affiliation of the Queensland Institute completes the alliance with the parent body of the architectural societies of all the Continental States of the Australian Commonwealth, and, with the Royal Canadian Institute, the New Zealand Institute, and the three South African Institutes, the Royal Institute of British Architects now possesses an organisation which may be said to embrace practically the whole of the self-governing dominions of the Empire.

THE NATIONAL GALLERY.

According to the report for 1913 of the Director of the National Gallery (Sir Charles Holroyd), only two works, apart from those acquired from funds under the Chantrey Bequest, were purchased during the year—viz., "The Procession to Calvary" (£4,000), by Raphael; and "Christ Bearing His Cross" (£1,000), by Francesco de Ribalta. The Raphael was originally the centre part of the predella of an altarpiece which was painted for the nuns of St. Antonio, Perugia (1505), and now in the Pierpont Morgan collection. This wood panel is 9¼ inches high by 33½ inches wide. The Spanish example is 84 inches by 43½ inches; it was painted on canvas in 1612 for the Spanish convent of Sta. Catalina, Zaragoza, stolen from the convent by the French, and bought at Valencia in 1831 by Richard Ford. There is a replica at Magdalen College, Oxford.

The bequests were a portrait of Mrs. Robert Trotter, of Bush, painted by Romney, and eleven pictures from the collection of Sir Henry Layard, G.C.B.

Among the gifts are six drawings of the Wellington Monument by Mr. James M. Whitelaw, which were pursented through the Stevens Society by Mr. Whitelaw; they have been placed in the library of the gallery at Millbank. The Wellington Memorial Completion Committee have given the original plaster model by Alfred Stevens for the equestrian statue of Wellington; the head of Wellington and the horse are alone complete. A portrait of W. B. Spence (a fellow-student in Florence) and two bronze busts of a child are further additions at Millbank to the Stevens collection.

A well-known example—"The Mirror"—of William Orpen's art has been presented by Mrs. Coutts Michie through the National Art Collections Fund, in memory of the McCulloch collection. Mrs. G. F. Watts has given a picture by Alphonse Legros ("The Retreat from Moscow") and "The Renaissance of Venus," which was painted by Mr. Walter Crane in 1877. The largest donor was the Countess of Carlisle, who gave seven old masters.

A statuette in black wax by Lord Leighton has been presented by Mr. C. Fairfax Murray. It is called "Needless Alarms," and shows the nude figure of a girl standing by the edge of some water, alarmed by a toad. She is glancing down over her left shoulder, with her hands raised to her right breast. It was executed in 1886, about the same time as "The Sluggard." Sir J. E. Millais admired the original bronze so much that he wished to purchase it, but Lord Leighton insisted on presenting it to Millais, who in return gave Millais his picture "Shelling Peas."

The Chantrey Bequest purchases were five, and represent an outlay of £1,319. The most important is "The Wood beyond the World" (£800), by Mr. Charles Sims, A.R.A., which made a stir at last year's Academy. The next most costly purchase was a water-colour by Mr. Ernest E. Briggs, called "A Flood on the Ken at Earlstoun Linn" (£200). The other painters selected by the President and Council of the Royal Academy were J. Walter West, W. Hatherell, Harry Watson, and the late Mr. Arthur Lemon.

The precise number of works added to the different schools in the two galleries during the year was as follows: Umbrian School, 1; Modena School, 1; School of Saxony, 1; Bolognese School, 1; Dutch and Flemish Schools, 5; Spanish School, 2; French School, 1; English School, 34.

A loan exhibition of eighty-nine works by pre-Raphaelite painters from public and private collections in Lancashire was open at Millbank from July 17 to September 28. The collection was hung in Gallery V. and on the end walls of Gallery XV. It was visited by large numbers, and represented the work of Madox Brown and the early work of Millais exceptionally fully, as well as the work of less-known painters, such as Simeon Solomon, J. D. Watson Windus, and Williamson.

Amongst the pictures lent were: "The Hireling Shepherd," by Holman Hunt; "Autumn Leaves," by Sir J. E. Millais; "Stages of Cruelty," by Madox Brown, from the Manchester Art Gallery; "Lorenzo and Isabella," by Sir J. E. Millais, from the Walker Art Gallery, Liverpool; "Sir Isumbras at the Ford," by Sir J. E. Millais, from Sir William Lever, Bart.

A loan exhibition of 113 works by William Blake and thirty-one works by his contemporaries and pupils—Fuseli, Flaxman, Romney, Stothard, George Richmond, J. Linnell, Samuel Palmer, and Edward Calvert—was opened at Millbank from October 15 until December 31. The pictures were hung in Gallery V. and on the end walls of Galleries IV. and XV. and on screens. The collection was the most complete ever held of Blake's works of all periods. A few prints and illustrated books were included. The exhibition aroused unusual interest.

On January 23, 1913, the following four pictures were wilfully damaged by a visitor, who was immediately arrested and charged at Vine Street Police Station. It was found that he was insane: "The Gleaners," by John Constable, R.A.; "Mrs. Constable," by John Constable, R.A.; "Hadrian's Villa," by Richard Wilson, R.A.; "Castle by a Lake," by Richard Wilson, R.A. The pictures have since been repaired and replaced on exhibition in Trafalgar Square.

The Committee of the National Gallery Board, appointed in 1911 to consider practical suggestions for retaining important pictures in this country, has nearly finished its labours, and a report will shortly be presented to the Board.

The removal of the old staircases leading east and west from the outer vestibule of the entrance hall at Trafalgar Square has provided increased space for umbrella stalls, &c., as well as two exhibition rooms on the gallery floor, both of which will very shortly be utilised.

The gallery in Trafalgar Square was visited by 493,968 persons on the free days during the year, showing a daily average attendance on such days (208 in number) of 2,375.

In addition to the above number, 68,472 persons visited the gallery on Sunday afternoons throughout the whole year, showing a daily average of 1,317.

On students' days (Thursdays and Fridays) 55,452 persons were admitted between January 1 and December 31, 1913; the admission fees (at 6*d.* each) amounting to £1,386 6*s.*, as compared with £1,367 2*s.* 6*d.* received in 1912.

The National Gallery, British Art, Millbank, has been visited by 242,195 persons on the free days during the year, showing a daily average on such days (206 in number) of 1,175.

In addition to the above number, 62,046 persons visited the gallery on Sunday afternoons throughout the whole year, showing a daily average attendance of 1,193.

On students' days (Tuesdays and Wednesdays) 37,711 persons were admitted between January 1 and December 31, 1913; the admission fees (at 6*d.* each) amounting to £942 15*s.* 6*d.*, as compared with £976 11*s.* received in 1912.

The amount annually realised by admission fees at both establishments is devoted as an "appropriation in aid" of the Parliamentary vote to the National Gallery.

LIGHTNING CONDUCTORS AND THEIR TESTS.*

By Mr. Frederic H. Taylor, Assoc.M.Inst.E.E., Assoc.M.Inst.M.E.

The subject of lightning conductors is one which is, or certainly should be, of great interest to everyone, and particularly, I think, to engineers and architects. The latter are justly expected to provide means of protection to the buildings they erect, and the former to see that these are properly erected and duly tested, &c. The engineer also requires to provide protection to sundry structures which are more peculiarly within his own province, such as power stations, waterworks, oil tanks, overhead wires, &c.

Historical.—The invention of the lightning conductor is commonly attributed to Benjamin Franklin, who is said to have erected one upon his own house in Philadelphia in 1752. The late Mr. Richard Anderson describes this energetic printer Franklin as being also an author, an editor of newspapers, a compiler of almanacs, a publisher, a bookseller, a bookbinder, and a stationer. He made lampblack and ink; he dealt in rags; he sold soap and geese feathers, and he also invented the art of advertising. His enterprise must, therefore, have been even more wonderful than that of the average American. He is credited with having conducted the experiment of flying a kite during a thunderstorm, and thus seeking to convey the lightning discharge to earth. The twine was connected by means of a large key to a Leyden jar, which became charged, and discharged several times in succession. He naturally felt he had drawn the lightning from the cloud. What probably happened was that the storm cloud had inductively set up a charge on the earth's surface, and that what he witnessed was the ready escape to earth of this charge, *via* his wet string, &c.

We are not told whether he had a policy of insurance against personal accidents or not, but most of us in these days would hardly care to repeat his experiment.

The labours of Franklin were received by the people of his time with very mixed approval. He was ridiculed by some and condemned by others. In one reported instance in France, when one of Franklin's conductors was erected in a town, a public disturbance arose in consequence, and the iron rod was torn down by the people. The Municipality at once forbade any more lightning conductors to be erected, saying that they were "against law and religion." In Italy they were described by the priests as "heretical rods." A Boston clergyman is said to have preached against them as being "impious contrivances to prevent the execution of the wrath of Heaven."

Ultimately, however, and as with other great inventions, superstition and prejudice became "lived down," and the lightning conductor came to be regarded as a necessity if life and property were to be protected so far as lay within the power of man.

The Need of Adequate Protection from Lightning and Present-day Neglect.—It is frequently supposed by several classes of people who might well be expected to take a more *considered* view that protection from lightning is of but little consequence in this country. They tell you that we have very few thunderstorms, and then they are only mild ones. Such statements are utterly fallacious, and consequently misleading.

I agree that this country is let off very kindly in the matter if you are going to compare it, say, with South Africa; but nevertheless the damage done and the risk incurred through want of adequate protection is considerable, and very largely, if not quite, preventable. In his book upon "Lightning and the Churches," Mr. Alfred Hands mentions some 244 British cathedrals, churches, and chapels damaged by lightning during the ten years ending 1908—an average of twenty-four per annum, and this applies only to buildings devoted to religious purposes.

The Lightning Research Committee during the three years 1901-1904 were advised of over 500 cases of buildings in Great Britain damaged by lightning, or an average of 166 per annum. If you omit the first two and the last two months of the year as being those in which storms are least likely to occur, this leaves your average of 166 spread over eight months; that is, approximately twenty cases of damage per month. I hardly feel such figures are not worthy of our serious consideration.

It is sometimes urged that buildings provided with lightning-conductor systems are occasionally struck. This may be so; but what was the condition of the lightning-conductor system at the time? And, even if in order so far as it went, was it adequate? The answer which appears to be justified by modern knowledge is that either the system was in bad condition or inadequate.

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* A Paper read before the Junior Institute of Engineers on March 13.

In a report to the Metropolitan Asylums Board in 1912 Mr. W. T. Hatch, the engineer-in-chief, mentions 400 buildings as being damaged by lightning each year in England. Of these only 2 per cent. have been fitted with conductors, the remaining 98 per cent. not having been so provided. Where damage has occurred to what were facetiously called protected buildings, "it has generally been found to be due to an insufficient number of conductors, or to their having been applied incorrectly; or, after being fixed, no subsequent attention had been given to see that their earth connections remained in order."

Some persons are inclined to suppose that if a lightning conductor is struck and partly fused or destroyed that it proves uselessness. It proves the very opposite.

Falacies Regarding Lightning Conductors.—I would like to mention two which one often hears. One is that the conductors attract the lightning. This is nice of the conductors, and probably, therefore, the gutters attract the rain.

My opinion was once sought regarding the desirability of protecting a house in Southern Africa, which had been built on the side of a hill, and at a considerable altitude. I recommended that a lightning-conductor system be installed. The opinion of the professional gentleman responsible for the building was that as the soil there contained so much iron the fixing up of conductors would be a source of danger. Possibly he overlooked the fact that the house was above ground and not under ground, and therefore came in between any possible lightning discharge and his much-loved irony soil. I hope to refer to this instance in another part of my paper.

The other fallacy I would mention is that of supposing that only very tall buildings need protection. Other circumstances than height above ground must be considered if reasonable protection is to be obtained. A building may have two chimney stacks—a tall one and a shorter one. Where the former has been fitted with a conductor, the latter has been known to be struck, and the reason has been definitely ascertained.

It might be urged that it is cheaper to repair buildings damaged by lightning, or even in some cases to rebuild them, than to provide complete systems of conductors and to have them tested by an expert periodically. This may be so, particularly as fire insurance policies commonly cover damage due to lightning. But there still remains the risk of human life—in these days the dearest risk of all.

Lightning Discharges.—I do not propose to deal except very scantily indeed with the purely scientific aspect of a lightning discharge. The engineer's lot is more often that of dealing with facts than of finding scientific theories for their occurrence. The generally accepted opinion, however, is that lightning discharges are of two distinct kinds, named by Sir Oliver Lodge the "A" flash and the "B" flash respectively. The "A" flash is simple in character, and consists of a discharge between an electrically charged cloud which is approaching the surface of the earth without any intermediate cloud intervening. The path of the "A" flash is more or less prepared by the electrostatic conditions of the case, and it is said to strike pointed conductors in preference to others.

The "B" flash is a disruptive discharge of great suddenness, and arises where another cloud intervenes between the cloud carrying the primary charge and earth, the two clouds acting like a condenser. The Lightning Research Committee of 1905 reported that "when a discharge from the upper cloud takes place into the lower cloud the free charge on the earth side of the lower cloud is suddenly relieved, and that the disruptive discharge from this to the earth takes such an erratic course that no series of lightning conductors of the then hitherto recognised type suffice to protect the building."

It should be noticed that flashes of the simple "A" type are subject to what I would call "splashes," or, as some authorities call them, "lateral discharges." In the case I know of in South Africa the verandah (or, as it is there called, the "stoep") has several electric-light cord pendants. These are continually failing. This failure is not due to attack by rain or moisture, but my own feeling is that miniature lightning discharges are responsible.

Silent Discharges.—Lightning discharges are sometimes quite silent, and, being so, may pass unobserved. I well remember some overhead electric-lighting conductors erected under my supervision in the grounds of a building placed on very high ground on the outskirts of one of our home counties. I had lightning arresters attached to these where they entered the premises. Curiously enough, during the first summer, although several severe storms occurred, nothing observable happened. During the second summer, however, when everyone agreed that no storms had been noticed, one after another of my lightning arresters gave evidence of having received discharges—apparently silent ones.

Lightning is stated by many authorities to act like weak human nature and to therefore select the path of least resistance. But what forms the path of least resistance the lightning *alone* decides.

If there is *any metal* about, it is always supposed by superstitious people to be necessarily part of that path. Hence it is that people of this nature carefully remove the fire-irons and cover up the cutlery and the mirror with the nearest available tablecloth. I have often suggested to such people that they should simultaneously divest themselves of hairpins and spectacles, corsets and trouser buttons, and hand over to me their jewellery and money. Here, however, their courage at once returns.

The Protection of Buildings from Lightning.—Protection against the "A" type of flash is fairly easy, and it is considered that the ordinary system of conductors when properly constructed and maintained is reasonably safe. Discharges of the "B" type involve more complex treatment, and, in the words of the Lightning Research Committee, 1901-1905, "absolute protection can only be assured by a complete wirework enclosure—in fact, of the nature of a bird-cage." In any case the extent to which a building shall be protected and the cost of such protection usually has to bear a certain relation to the importance and the first cost of the building itself. Unfortunately the lightning-conductor work of most buildings is treated with an indifference as dangerous as it is unjustifiable. The specification for a building costing, perhaps, £10,000 to £12,000 will sometimes dismiss the whole matter by merely stating, "Allow £10 P.C. value for lightning-conductor." With such a delightful amount of detailed description it is not surprising that any sort of job forms the so-called lightning-conductor system—often put up by people quite ignorant of the work and utterly oblivious to the possible consequences of their ignorance. It is indeed regrettable that insurance companies have not so far by united action found it possible to insist upon both adequate protection and maintenance. A public building which cost £125,000 to erect came under my care. On examining and testing the lightning-conductors I found each one absolutely useless as well as being a definite source of danger.

Parts and Design of Lightning-conductor Systems.—Briefly put, any lightning-conductor system comprises (1) the air terminal, consisting of what is called the "elevation rod," the top of which is provided with one, three, four, or even five points; (2) the conductor from the elevation rod to the ground, with branch conductors from other parts of the building or from the metalwork of the structure, such as gutters, stack pipes, metal roofing, &c.; and (3) the earth connection.

Metal Used.—The metal most commonly, in fact, almost universally, used is copper in the form of copper tape from, say, 1½ in. by ⅛ in. down to ½ in. by ⅛ in. Iron is electrically efficient, but is more subject to corrosion and not so easily fitted into position. As to the design of the conductor system, this can only be settled when the design of the building, including its chimneys, turrets, gables, ridges, &c., roofing material, &c., are known, and some consideration must also be had for its general situation. For rough guidance, however, a few general first principles may here be given.

1. Conductors should run in as direct a line to earth as possible. Some persons prefer to keep them a certain distance from the wall. This has the advantages of avoiding an accumulation of dirt and also avoiding sharp bends when crossing over cornices, &c.
2. Vertical rods should preferably be connected by horizontal conductors fixed to ridges or other suitable parts.
3. Roof metalwork, &c., should be connected to the system.
4. Chimneys should be protected as being specially liable to be struck, due, of course, to the column of hot gases, which are good conductors, the carbon lining to the chimney in the form of soot, and the mass of metalwork at the base in the form of a stove.
5. Any joints in conductors should be both soldered and screwed together.
6. Conductors should be kept as much away from interior gas-pipes or electric pipes, &c., as possible.

7. Similar metals should be used throughout—*i.e.*, the holdfasts should be of gunmetal and screws or rivets, &c., of copper.

8. Long runs along ridges, &c., should preferably have more than one elevation rod—say, at least one at each end, several short points along a ridge being better than a few tall ones.

Earth Connections.—The earth connection of any lightning-conductor system, however simple that system may be, is of the very utmost importance. It is *the* connection to earth, and if this be inefficient the whole system may be regarded more as a danger than as a protection. The matter of obtaining a good earth connection is mainly a question of surface contact between the conductor and moist earth. A moderate amount of resistance (ohmic resistance) is not harmful—in fact, may be otherwise. The mere fact of taking the conductor into moist earth or even into water does not necessarily form a good earth unless there is a considerable area of contact. The usual method of forming an earth connection is by means of a copper plate. The thickness is not important, provided it is sufficient to withstand oxidisation. A plate measuring 30 in. by 30 in. by $\frac{1}{16}$ in. would be more efficacious than one 12 in. by 12 in. by $\frac{1}{2}$ in., although the latter gives 72 cubic in. of copper as against 56 cubic in. of the former. The copper-tape conductor should be well connected to the plate, preferably riveted as well as soldered, and the soldered joint painted over to retard electrolytic action. Many people bury the plate horizontally; personally I always make the interment vertically. The earth connection should always be kept well away from the building, and also well away from gas mains.

It is absolutely necessary that the earth connection should be kept fairly moist, so as to allow the resistance to remain moderate in value.

It is usual to bury a quantity of broken coke or cinders with the plate, with a view to retaining the moisture. If either material be used, it must be thoroughly washed, so as to get rid of any sulphur present, which would destroy the copper. There are, of course, cases which sometimes arise where to bury a copper plate in the ground is to invite certain failure. In the neighbourhood of certain factories the soil is found saturated with ammonia (tar or creosoting works, &c.), which is destructive to copper.

To facilitate discharge into the general mass of earth saw-tooth points to the plate are sometimes used. A special type of earthing plate adopted by the L.C.C. is to the following specification:—"To be of copper $\frac{1}{16}$ S.W.G. tape, rivetted and soldered the full length of the plate; joints washed of acid and protected by thick coat of tar; each plate to have four rows of triangular tongues formed out of the plate itself—two rows of six and two inner rows of five each, so that tips of tongues in adjacent rows point in opposite direction, each tongue being 3 in. long and tapering from 2 in. to a point; tongues to be bent at right angles and to point upwards when the earth plates are laid in position." The loose earth or wood charcoal to be filled in and well rammed on top of the plate. This plate possesses the characteristics of the one proposed by Sir Oliver Lodge in connection with Elan Valley Waterworks.

The difficulty of keeping the earth connection moist is in most cases a very real one—of course, if a pond, lake, or river can be utilised it is excellent, provided the plate is kept free from mechanical injury, and that you don't one day find yourself with only the end of the tape left. In order to facilitate the provision of a proper earth terminal the patent tubular earth had been designed by Mr. Killingworth Hedges, M.I.C.E., M.I.E.E. This mainly consists of three parts—the upper for connecting to the copper tape or cable, and also to a rain-water pipe; the lower end, which forms the actual earth, and which is fitted with a steel spike for driving into the soil, and a removable cap for marking the position of the earth in the ground. I have here a specimen of this patent earth, which has been kindly lent to me by the General Electric Co., Ltd., who are the manufacturers.

Water-pipe Earths.—It not infrequently happens that the earth plate originally installed on a job has failed, and that for various reasons one cannot sink another. In this case a live water main makes an excellent and a lasting earth contact, care being taken, of course, that the connection between the tape and the pipe is properly made. Such connection will, of course, be external to the building.

Tests.—The inspection and testing of a lightning-conductor after it has once been installed is mostly conspicuous by its absence, and this is undoubtedly the cause why accidents from lightning are often reported to have occurred to buildings that have been believed to be protected by conductors. It is not simply a case of "out of sight, out of mind." It is open neglect. The reasons which call for regular inspection and test are obvious. The air terminals are the most exposed part of the structure and acted on by wind and weather, and additionally in towns by uncertain and corrosive impurities in the air; the air terminals cannot be made unduly large without being unsightly; very acute bends in the tape are often most wrongly insisted upon, purely for the sake of appearance, which seems to count for more than safety; decay of the earth plate may arise when least suspected, and particularly disconnection just about the ground line.

The tests which should be made should show the conductor to be continuous from air to earth, and to possess a sufficient lowness of resistance to earth, so that it may be considered reasonably safe for conducting away a discharge into the earth.

Methods of testing I will divide under two heads: (*a*) the bell test, which merely shows continuity or otherwise, and (*b*) measurement-of-resistance test. The first method is of little or no service whatever, though it is useful as a preliminary. The measurement of resistance is mostly made by some form of Wheatstone bridge, the most usual, perhaps, being an ordinary P.O. bridge worked with a few dry cells. People who only test jobs situated right out in the open country swear by this method. If they had to test in a very congested town district, as, for instance, in some parts of London, they would then swear at it. The prevalence of "earth currents" due to countless telephone and similar circuits has within my experience made this type of apparatus very troublesome, and in some cases impossible to work with.

A modification of this apparatus is the "magneto-inductor bridge," manufactured by Siemens Bros. & Co., Ltd. The hand generator provides us with an alternating current, which overcomes the difficulty experienced with the ordinary arrangement of P.O. bridge and battery.

A method I have used with great success in congested districts infested with earth currents is to pass a good current (measured) through the conductor and earth, and observing the drop in volts, calculate the resistance from the known quantities. For this purpose I have used a 4-volt accumulator, good enough for any discharge up to, say, 60 or 70 amperes. In this way you can readily obliterate other people's earth currents and thus get on with the job.

NOTES ON BOOKS.

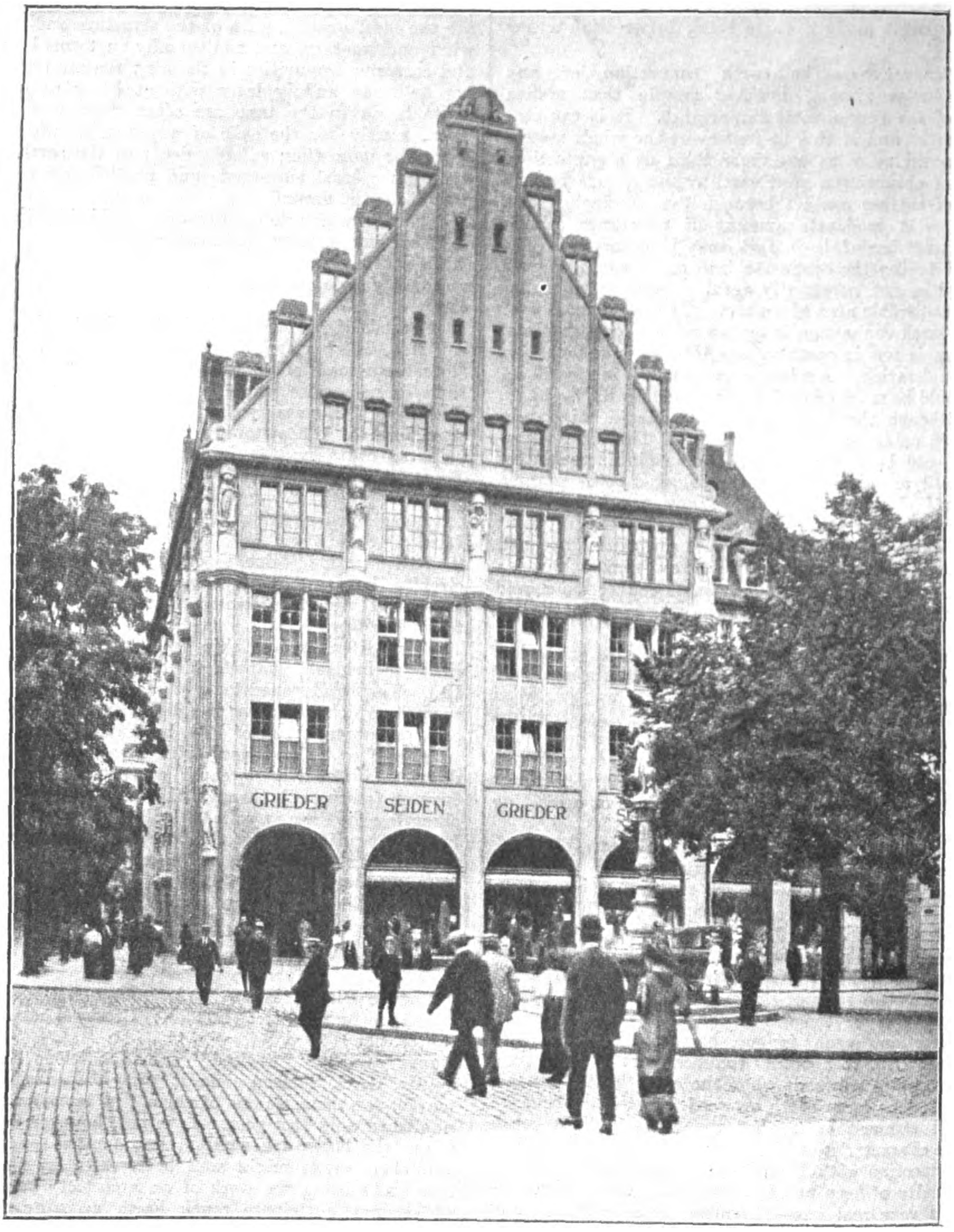
"How to Plan a House" (2*s.* net) and "Every Man his Own Builder." (London: Crosby Lockwood & Son. 5*s.* net.)

These so-called "revised" second editions of two works by Mr. G. G. Samson make it fairly evident that there is a market for them, as one of them (the latter) was originally published only last year. It is not, however, architects for whom the books are written, but amateurs and dilettanti, and their views might well be resented by the profession (the books being the work of an architect) were it not that we do not anticipate much harm accruing finally from them.

Indeed, "How to Build a House" we regard as a very indifferent production with a grotesquely absurd introductory chapter, and with poor illustrations to an unilluminated text. Here and there we pick out something good, such as the recommendation not to place the door of a room close up into the corner, the plea for increased coal cellarage, and the sensible grouping of rooms in various of the plans. After mentioning these points there is but little left, as we think, worthy of mention in the book, though of course many of the pages are quite unobjectionable. *En passant*, is "a bookcase of ordinary size found in almost all drawing-rooms"? It is news to us. In contrast to the sensible grouping of rooms above referred to is the poor planning in other places, such as in fig. 13 (where the perambulation from kitchen to dining-room is a wretched service), fig. 16 with its unnecessarily dark passage, fig. 19 and fig. 25, wherein a poor first floor might with re-arrangement have been rendered tolerable.

We must pass on to consideration of the other book, omitting in both instances notes of typal and other errors which, in "revised" editions, should surely be eliminated. In "Every Man his own Builder" the only revisions we observe are the correction of one typal error and the addition

MODERN EUROPEAN ARCHITECTURE.
SWITZERLAND.



[From *Moderne Bauformen.*

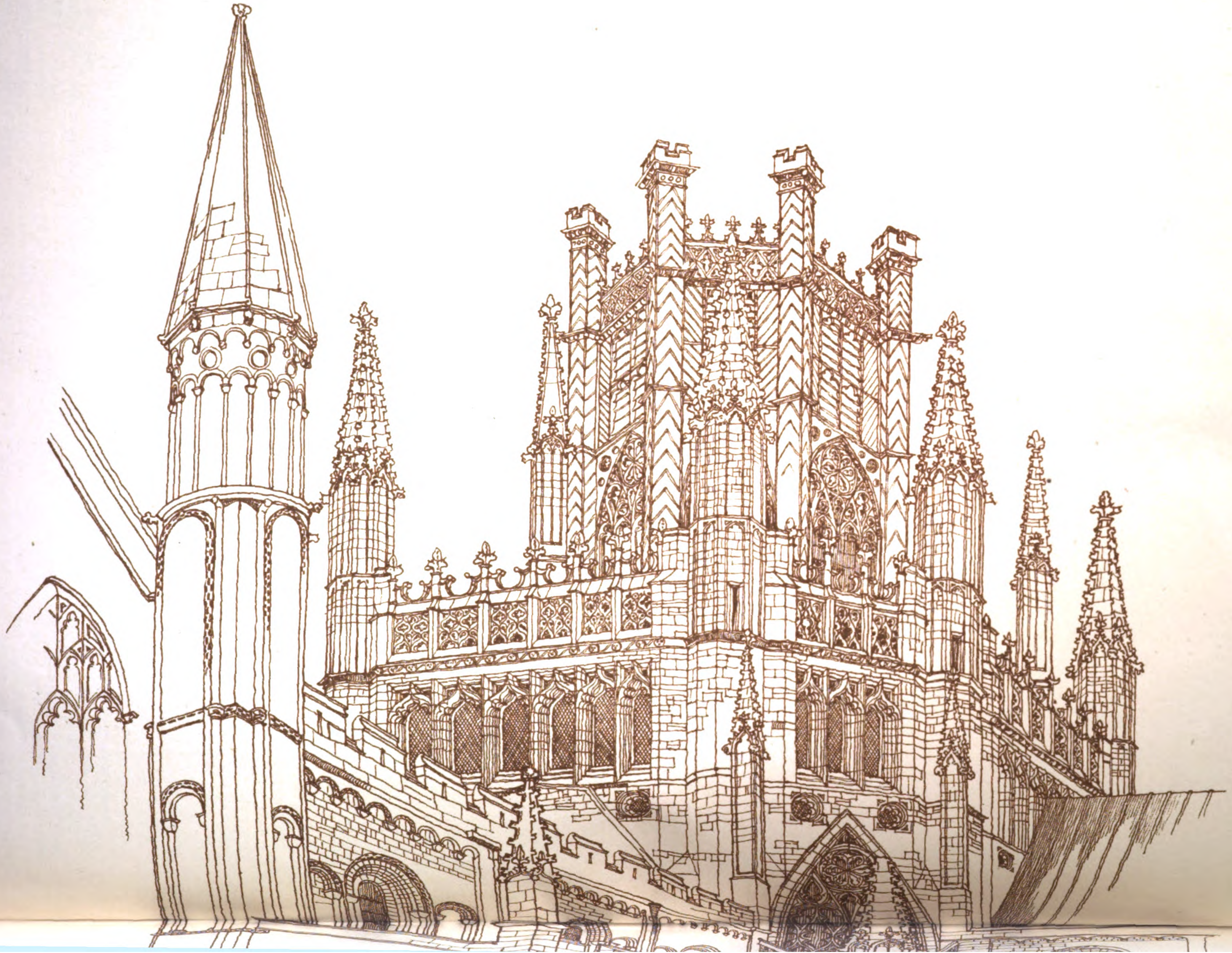
BUSINESS PREMISES, "PETERHOF," ZURICH.—PFISTER BROTHERS, Architects.

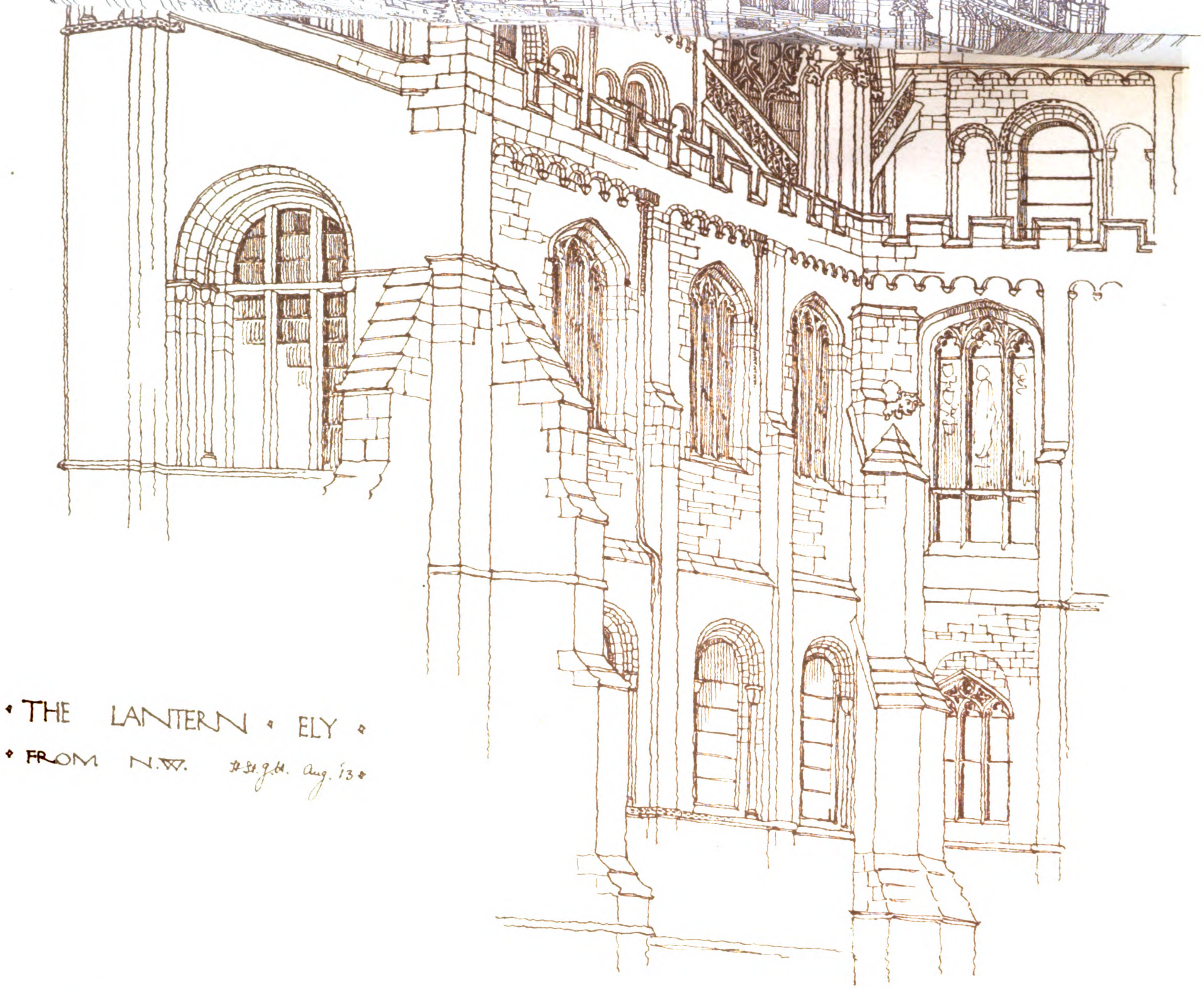
of two footnotes. But still this book does not call for such sweeping animadversion as the first one reviewed. There is indeed much that bears perusal here, even amidst much that is indifferent, nay poor. The production makes a better appearance than in the case of the other book, but the illustrations leave much to be desired; the "pictorial" display of fig. 17 is quite grotesque, and the little farmhouse in fig. 18 is a most unideal little farmhouse. We cannot agree as necessarily minimum dimensions for even the chief of two farm bedrooms (averaging a height of 9 ft.), 20 ft. by 12 ft. 6 in.

When the author tries to be funny in these books he fails lamentably, but at times he is unconsciously amusing, as, for example, when he writes that if a man builds his own house, and stone or brick-clay were already on the land, "all that he would have to buy would be the wood (including doors and windows), the nails and the small ironmongery (such as locks, hinges, &c.), the tiles or slates for the roof (if it were not thatched) the lime for the plaster, the paint, the window-glass, a few sundries, and some simple tools." That is all; almost as simple as the tools themselves. And once again, conceive anyone advocating the placing of a house in a disused chalk-pit! Sheltered, yes; but rather too much so.

Let us, however, give due prominence to this remark: "The true art of building, as far as both the poor man and the pioneer are concerned, lies not in insisting that this or that particular material is essential . . . but in learning to make use of those materials that lie ready to hand."

The author advocates some curiosities of ventilation, and in other respects, too, causes us to rub our eyes in wonder. But let us end with a most apt quotation from the book: "I advise the amateur to build one room with the aid of one book before he begins to read any other book. After he has built even this one room, he will be able to distinguish what happens to be of importance to him in what he reads from what is of no importance to him at all." Ah, yes! there is a good deal of sense in that remark.

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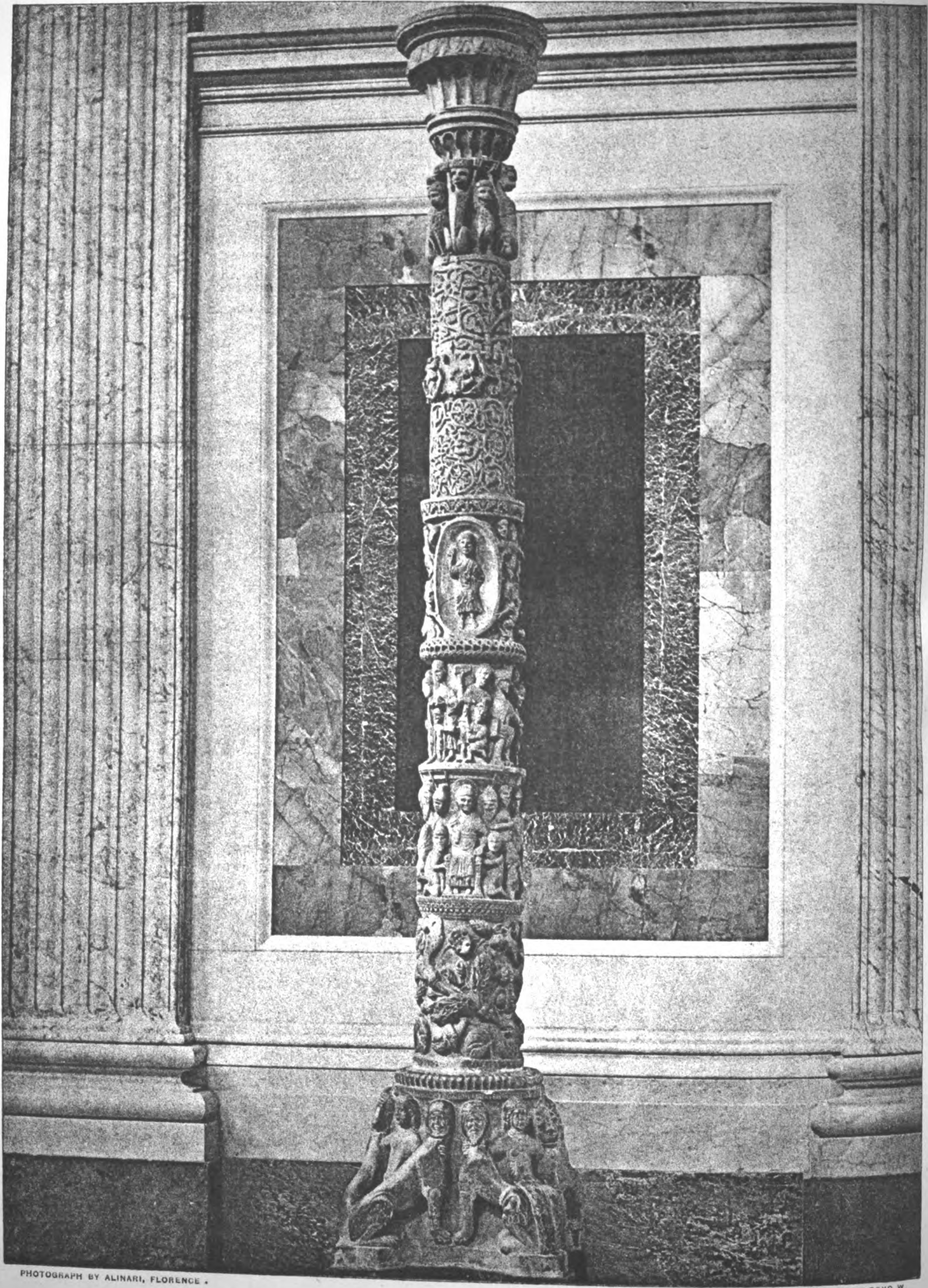
From a drawing by Mr. H. St. JOHN HARRISON.

The Architect, Mar: 20th 1914.



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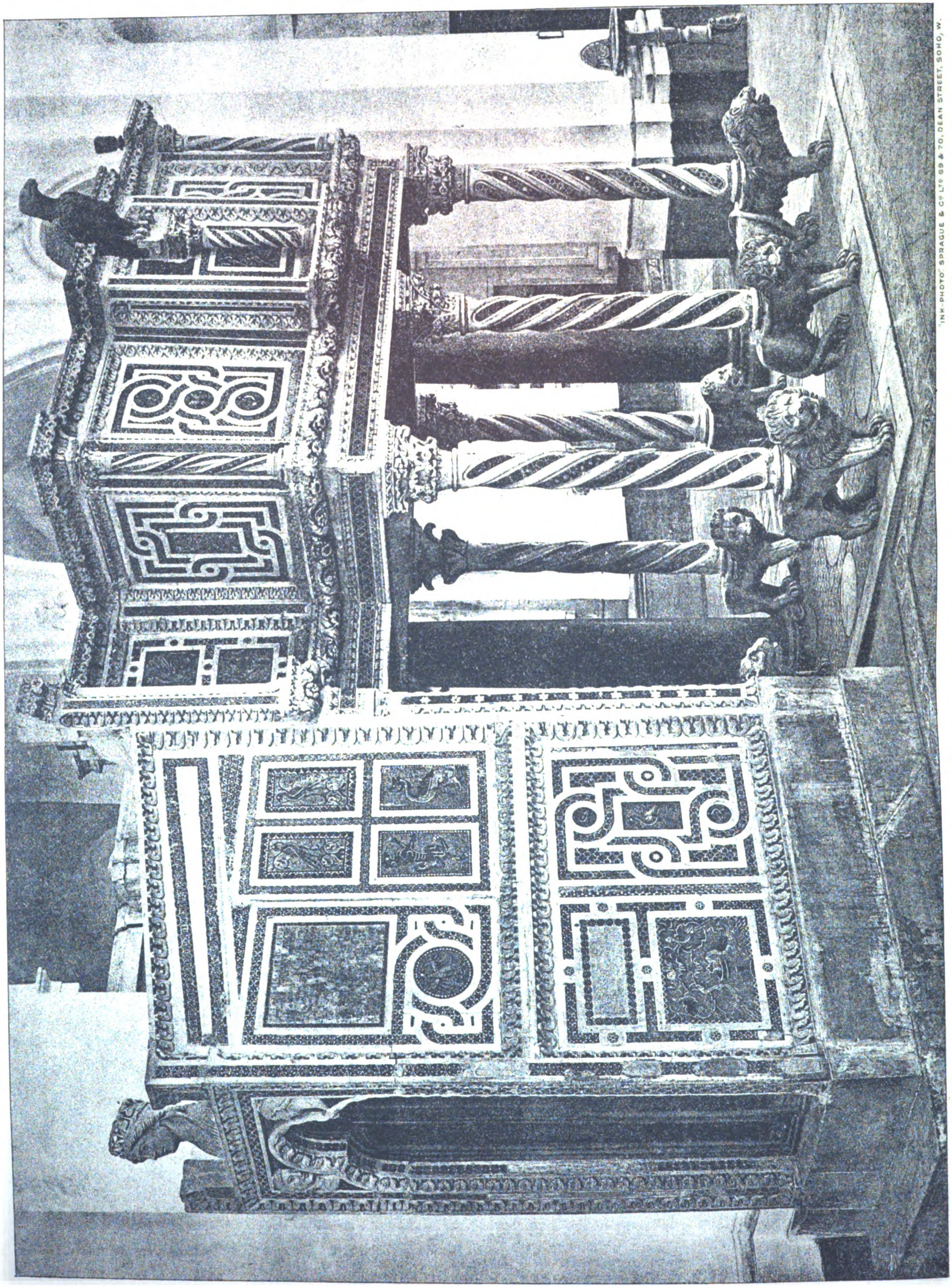

PULPIT IN RAVELLO CATHEDRAL.

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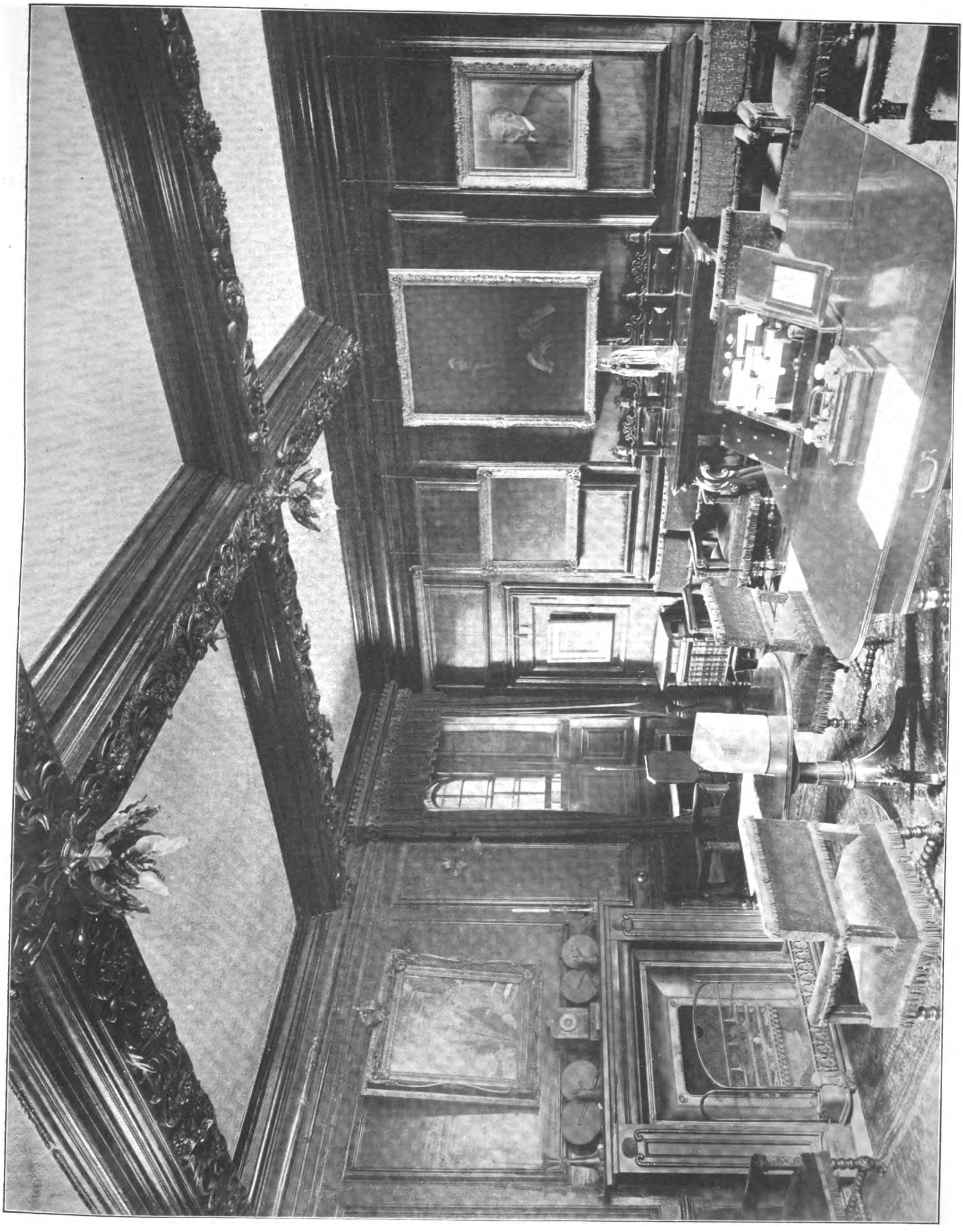

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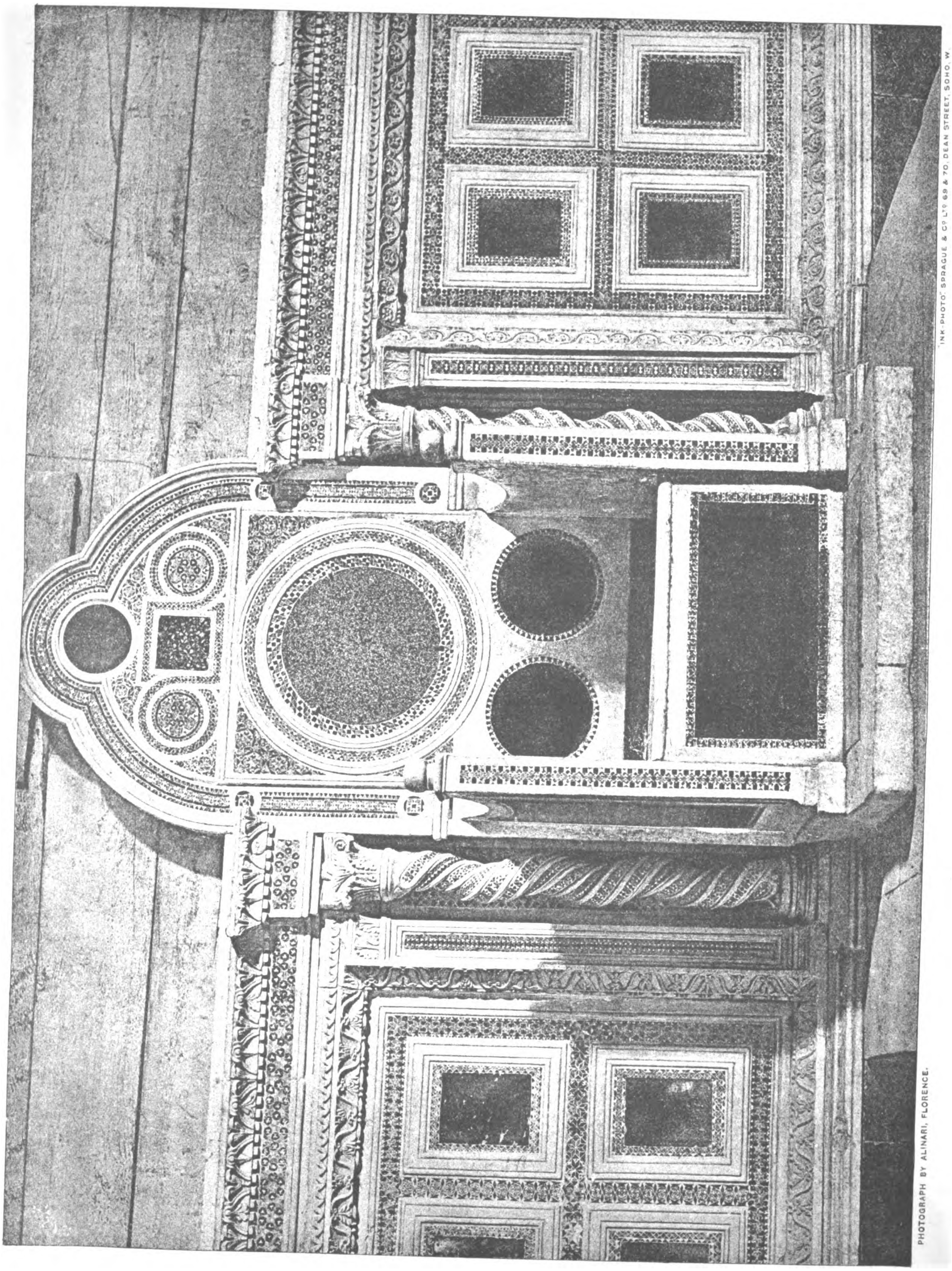

Bishop's Throne in S. Lorenzo extra Muros, Rome.

Photograph by Alinari, Florence.

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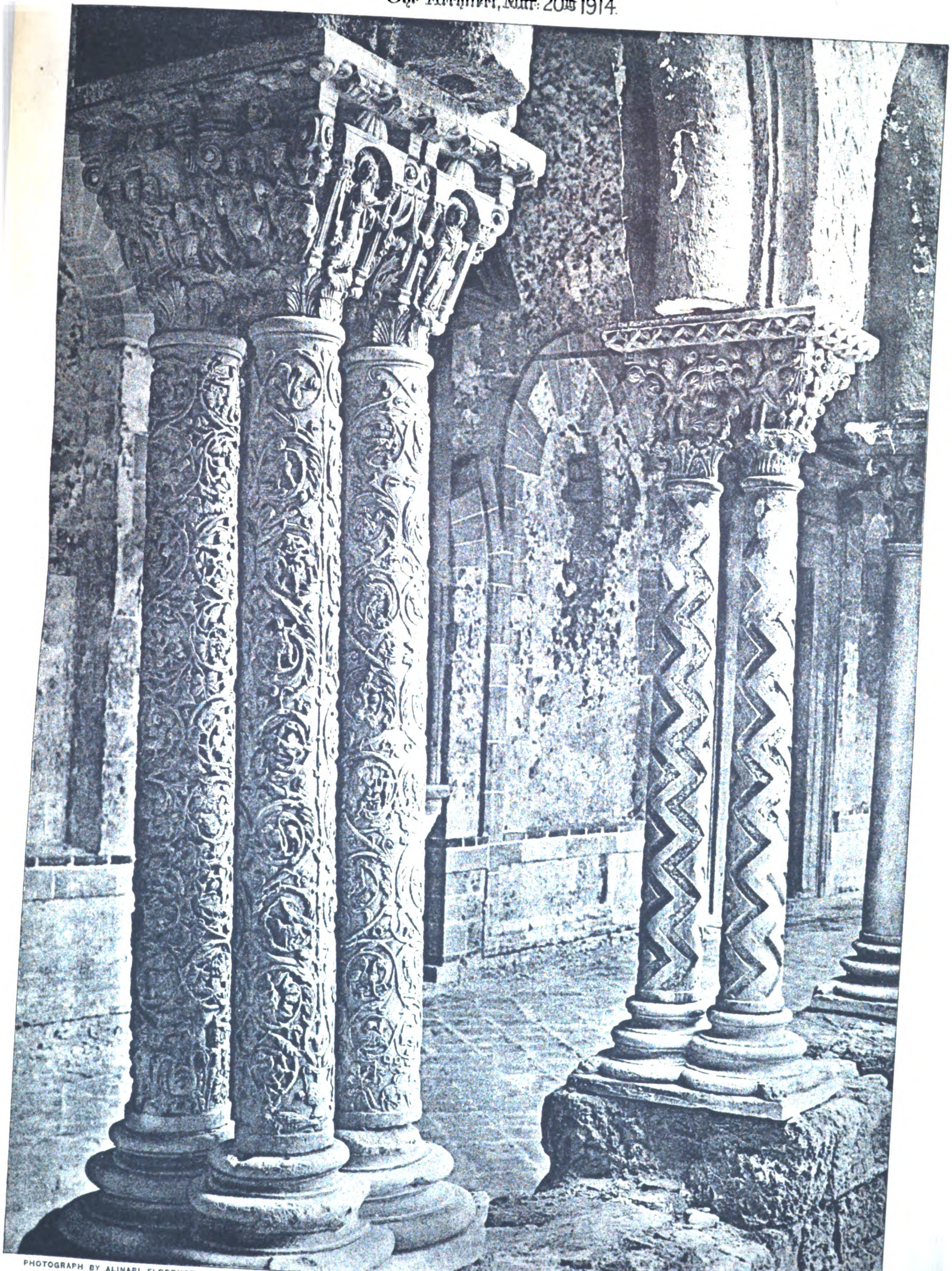

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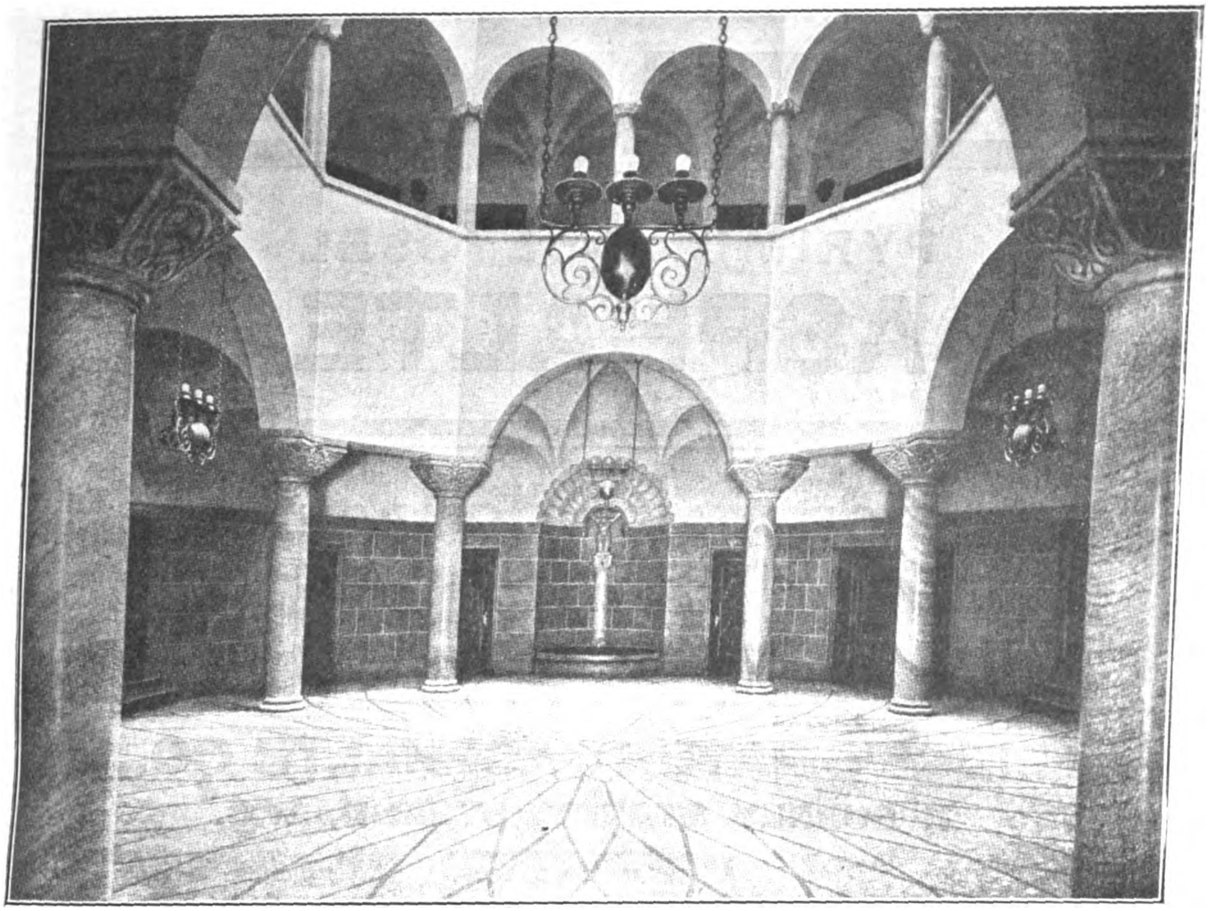
MONREALE CATHEDRAL, SICILY: DETAIL OF CLOISTER.

MODERN EUROPEAN ARCHITECTURE.

SWITZERLAND.



[From *Moderne Bauformen.*

BUSINESS PREMISES, "PETERHOF," ZURICH.—GROUND FLOOR ENTRANCE HALL.—PFISTER BROTHERS, Architects.

"Architecture." By Mrs. Arthur Bell. (London: T. C. & E. C. Jack. 6*d.* net.)

THE present volume is No. 104 of the publishers' library intituled "The People's Books," of which there are already over six score, and at the moderate price at which they are sold there should be no difficulty in readers securing a fund of general information, which ranges in the series from the foundation of science to a treatise on land, industry, and taxation. There are, however, some subjects which do not lend themselves readily to brief description, and of such a nature is architecture. Dr. Johnson, in "The Vanity of Human Wishes," commences: "Let observation with *extensive* view, survey mankind from China to Peru"; how, then, can architecture be adequately surveyed in a tiny volume of less than one hundred pages, whose text capacity is diminished by over one hundred illustrations? Mrs. Bell writes with evident personal knowledge (despite various inaccuracies of statement), but there is no such presentment of cause and effect, of continuity and correlation, as would be proper in dealing with the life-history of the mother of the Arts. Such as it is, the book will serve to act rather as a guide to certain buildings than to a study of architecture. Mrs. Bell, too, is afflicted at times by the tyranny of phrases, of which we will merely instance "the living rock" (whatever that may mean). She gets badly confused as between mouldings and ornaments, arching and cornice, roofs and vaults; nor does she seem to realise that bosses and keystones were constructive features in the first place and only decorative in final treatment. Her enthusiasm, too, picturesque as it may be, leads her too frequently into the realms of exaggeration. Why she should designate the first capital on p. 74 and the ornament on p. 75 as "Early English" is a mystery; so, too, with the capital on p. 73. We are not accustomed to regard Norman Shaw and Sir Charles Barry as Gothic exponents, despite the Houses of Parliament, whose structural plan is certainly non-Gothic and only its garb is mediæval art; in fact, the Parliament House may be regarded as being decked in fancy dress. Her descriptions at times are very good, as in the case of Salisbury Cathedral and the Alhambra. Much more might be written here, but we have no desire to give the impression that the book is not readable; only readers must peruse it with a grain of caution, and (if possible) discrimination—hence it is scarcely suitable for those for whom it is intended.

BUILDING PROGRESS IN THE PROVINCES AND SUBURBS.

A LIST OF WORKS PROJECTED OR COMMENCED.

(N.B.—Local Authorities, architects, and others are invited to submit full particulars for insertion in this weekly list. Where districts are not entered against names of architects and builders the address is as a rule local.)

ENGLAND.

BERKSHIRE.

Reading.—All Saints' Church: Institute. Mr. J. H. Goodman, architect, Blagrave Chambers.
Central Post Office, Friar Street.

BUCKINGHAMSHIRE.

Aylesbury.—Stables and pig-sties, Fleet Street, for Mr. W. Evett.

Calvert.—Seven cottages and a shop, for Exors. of late Mr. Itter.

CHESHIRE.

Neston.—Pair of houses, Bushell's Road, for Mr. J. Smith.

Parkgate.—House for Mr. A. G. Grenfell.

CUMBERLAND.

Aspatria.—Twenty workmen's dwellings. Mr. G. Armstrong, architect, 24 Bank Street, Carlisle.

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ENGLAND—*continued.*

DERBYSHIRE.

Chesterfield.—Fourteen cottages, off Boythorpe Road, for Mr. W. Spooner.

Four cottages, Redvers Buller Road, for Mr. J. Woodhouse.

Five cottages, Chapel Street, Hasland, for Miss S. E Randall.

Two villas, Hasland Road, for Mr. T. Morris.

Derby.—Victoria Electric Theatre: improvements. Messrs. E. Morley & Sons, contractors, Gerard Street.

DEVON.

Braunton.—Business premises. Mr. A. S. Schwabe, architect.

Exeter.—Manual School for sixty pupils, near the College (£2,000).

DURHAM.

Easington Colliery.—Branch premises, for the British Bazaar Co.

Greenside.—Thirty-two houses, for the Stella Coal Co.

Hartlepool, West.—Public Library: extension and re-arrangement (£2,200).

Ryton.—Twenty-five Council houses.

ESSEX.

Bocking.—Six working-class cottages (£1,000), for Braintree R.D.C.

Ilford.—Wesleyan Church, Cranbrook Park (£7,000).

White Notley.—Six working-class cottages.

GLOUCESTERSHIRE.

Bristol.—University: Edgecumbe and Thornton Houses, Richmond Hill, for conversion and extension as a hostel for women.

Yate.—Workhouse: additions and alterations, for the Chipping Sodbury Union.

HAMPSHIRE.

Bournemouth.—Y.M.C.A. buildings: proposed reconstruction.

Gosport.—Conservative and Unionist Club. Mr. E. J. Thomas, architect, 120 High Street.

KENT.

Beckenham.—Two houses, White Croft Way, for Messrs. J. Barnes & Sons.

Dartford.—House, Beaconsfield Road, for Mr. W. R. Smith.

Offices, Priory Lane and Trevithick Road, for Messrs. J. & E. Hall, Ltd.

Dover.—House and stable, Lower Road, River: additions and alterations. Messrs. Beeston & Dixon, architects, 10 Eastbrook Place.

"Railway" Inn, Hawkesbury Street: alteration. Messrs. Worsfold & Hayward, architects, Market Square.

LANCASHIRE.

Bolton.—Six houses, off Crompton Avenue, for Mr. T. Woods.

House, Markland Hill. Mr. R. H. Crook, architect, 17 Mawdsley Street.

Eighteen houses, off Swan Lane. Mr. T. Blakely, builder, 38 Swan Lane.

House, Back Ivy Road. Mr. S. Haslam, architect, 21 Mawdsley Street.

Two houses, Chorley Old Road, for Messrs. Leigh Bros.

Mission Hall, Winter Street, for Raglan Mission Trustees.

Parochial Hall, Newnham Street. Messrs. Robinson (A.R.I.B.A.), Son & Wheeler, architects, 24 Nelson Square.

Stores, Blackshaw Lane, for the Croal Spinning Co.

Works, Barry Street: additions for Mr. H. Guest.

Burnley.—Colliery Rescue Station, Accrington Road, for Lancashire and Cheshire Coalowners' Association.

Fleetwood.—Council School, Hatfield Avenue.

Preston.—Harris Orphanage: recreation and concert hall (£1,500). Mr. E. J. Andrew, architect, 30 Winckley Square. Separate trade contractors.

LINCOLNSHIRE.

Ashby.—Working-men's Club. Mr. H. S. Stalker, architect, 150 High Street, Scunthorpe.

Lincoln.—Business premises, 279 High Street: additions and alterations, for Messrs. F. Choice, Ltd.

Eighteen houses, Lark Lane, for Mr. C. Dowse.

Twelve houses, Kingsway, for Mr. C. Taylor.

Two houses, Queensway. Messrs. Wright & Son, Ltd., builders, Park Street.

Four houses, facing River Witham. Mr. F. W. Horton, builder, Shakespeare Street; also

Four houses, facing Weir Street.

Two houses, Cecil Street, for Lincoln Land and Building Society.

Three houses, Newland Street West, for Mr. R. L. Holland.

MONMOUTHSHIRE.

Tredegar.—Hotel, Oakdale Village, Sirhowy. Mr. A. F. Webb, architect, Tredegar Chambers, Blackwood.

NORTHAMPTONSHIRE.

Brackley.—Council School for about 190 places.

Creaton.—The "Bricklayers' Arms": rebuilding for Messrs. S. Phipps & Co. (Northampton).

Oundle.—Elementary Council School (£4,100).

NORTHUMBERLAND.

Haltwhistle.—Two cottage homes. Mr. F. M. Dryden, architect, 6 Market Street, Newcastle-on-Tyne.

Newcastle-on-Tyne.—Workmen's dwellings, City Road. Mr. Holford, City surveyor.

SHROPSHIRE.

Bridgnorth.—Twelve municipal dwellings, Cliff Road. Borough surveyor; also

Twelve municipal dwellings, Shifnal Road.

Gobowen.—Proposed church.

SOMERSET.

Burnham.—Council School. Messrs. Samson & Colthurst, R.I.B.A., architects, 51 High Street, Bridgwater.

Ilminster.—Proposed Congregational church.

Midsomer Norton.—"Bainsbury House," Stratton-on-the-Fosse: additions for the Downside Abbey authorities.

Wiveliscombe.—Fourteen cottages. Mr. F. W. Roberts, F.R.I.B.A., Council architect, 2 Hammet Street, Taunton.

STAFFORDSHIRE.

Burntwood.—Asylum: cottages (£2,700).

Endon.—Vicarage. Messrs. R. Scrivener & Sons, architects, Howard Place, Hanley.

SUFFOLK.

Bury St. Edmunds.—Drill Hall and headquarters for County T.F.A. Mr. A. A. Hunt, architect. Mr. H. J. Barbrooke, contractor, West Road.

SURREY.

Camberley.—Cinema, York Town. Mr. W. J. Hodgson, architect, "Vectis," The Avenue.

SUSSEX.

Cuckfield.—Council cottages.

Hayward's Heath.—Post Office (£6,000).

Hove.—Postmen's office (£2,000).

Lavington, East.—Eight cottages, Graffham and Petworth Road, for Mr. P. Ewens.

Midhurst.—Four cottages, Easebourne Lane, for Lord Cowdray.

Petworth.—Cottages, North End, for Lord Leconfield.

WARWICKSHIRE.

Atherstone.—Workhouse: alterations.

Birmingham.—Public Elementary school (for 1,200 places), Nansen and Naseby Roads, Saltley.

Foleshill.—"Park Gate" Hotel, Holbrooks: alterations for Messrs. Mitchells & Butlers, Ltd.

"Royal" Hotel, Little Heath: alterations for Messrs. Phillips & Marriott, Ltd.; also

The "Green Man," Hall Green: additions and alterations.

House, Bedlam Lane, for Mr. Claridge.

Two houses, Little Heath Road, for Mr. T. Hackett.

The "Old Crown" Inn, Windmill Lane: rebuilding for Messrs. Ind, Coope & Co.

WILTSHIRE.

Trowbridge.—Picture Palace (£2,500). Mr. P. B. Rigg, architect, 3 Cork Street, Frome.

Wootton Bassett.—Villa, Bath Road. Mr. H. A. Trow, architect.

YORKSHIRE.

Burley-in-Wharfedale.—Scalebor Park Asylum: dining-room block. Mr. P. O. Platts, architect, County Hall, Wakefield.

Dewsbury.—Fifteen houses, Savile Town. Mr. J. Crossley, builder, "Crackenedge."

Doncaster.—Masonic Hall, corner of Priory Place and Printing Office Street (£3,450).

Halifax.—Congregational Church, Highroad Well (£4,500). Messrs. Glendinning & Hanson, A.R.I.B.A., architects, 15 Commercial Street.

"Volunteer Arms" Inn, Copley Lane: rebuilding. Mr. C. E. Fox, architect.

Knaresborough.—Cottage Homes, Stockwell Lane, for the Board of Guardians. Mr. J. Houfe, architect, Albert Chambers, Harrogate.

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ENGLAND—*continued.*

YORKSHIRE—*continued.*

Luddenden Foot.—Mechanics' Institute (£1,000), The Holmes.

Maltby.—Proposed Hospital.

Middlesbrough.—Synagogue: hall and schools. Mr. J. Forbes, architect, 43 Albert Road.

WALES.

Aberdare.—"Abernant House": alterations, &c., for an isolation hospital (£17,500).

Bargoed.—"Royal" Hotel (£4,500), for Mr. James Ward (Aberbargoed).

Llandilo.—County School: rebuilding. Mr. W. V. Morgan, A.R.I.B.A., Education Committee architect, County Offices, Carmarthen.

Llanelly.—Workhouse: infirmary.

Swansea.—Morriston Cemetery: chapel, entrance lodge, &c. Mr. E. E. Morgan, A.R.I.B.A., borough architect, 3 Prospect Place.

Wrexham.—Smallpox hospital (£1,000).

SCOTLAND.

Aberdeen.—Royal Hospital for Sick Children: proposed new buildings, Ashley (£35,000).

Blackness.—Episcopal Church for 200 places (£700).

Cathcart.—Couper Institute: extensions (£17,500).

Clydebank.—Workmen's dwellings.

Dalbeattie.—Parish Church, Urr (£3,500).

Edinburgh.—Public Washhouses, Macleod Street, Gorgie. Workmen's houses, Braid Hills.

Glasgow.—Established Church, Newlands, for Merrilea Congregation (for 670 places), £7,000.

Irvine.—Working-class dwellings (£10,000).

Kilpatrick, Old.—Dalmuir School: infants' department.

Motherwell.—Working-class dwellings.

Whitekirk.—Parish Church: restoration (£6,000 to £10,000).

GLASGOW INSTITUTE OF ARCHITECTS.

AT a meeting of the newly-elected council of the Glasgow Institute of Architects, held in the Art Club, Bath Street, the following office-bearers were elected: President, Mr. John Watson; Vice-presidents, Mr. James Lochhead, A.R.I.B.A., Mr. James Lindsay, A.R.I.B.A., and Mr. John Fairweather, A.R.I.B.A.; Auditor of Professional Accounts, Mr. A. N. Paterson, M.A., A.R.S.A.; Secretary and Treasurer, Mr. C. J. MacLean, writer, 115 St. Vincent Street. The standing committees for the ensuing year were also appointed.

DEVON AND EXETER ARCHITECTURAL SOCIETY.

AT the annual meeting of the above Society, which was held at Exeter on the 15th inst., the following officers were elected for the ensuing year: Mr. J. Archibald Lucas, A.R.I.B.A. (Exeter), President; Mr. C. Cheverton (Devonport), Vice-President; Messrs. A. J. Cornelius (Truro), John M. Pinn (Exeter), T. A. Andrews (Exeter), Harold Watts (Plymouth), to fill vacancies on the council of those retiring, with those remaining in office—viz., L. T. Tonar (Exeter), A. S. Parker (Plymouth), and the two past Presidents, Messrs. J. Jerman, F.R.I.B.A. (Exeter) and E. Coath Adams, M.S.A. (Plymouth); Mr. S. Dobell, Hon. Treasurer; and Mr. Allan J. Pinn, A.R.I.B.A., Hon. Secretary (Exeter).

NORTHERN ARCHITECTURAL ASSOCIATION.

THE annual meeting of the members of the Northern Architectural Association took place last week at the rooms of the Association, 6 Higham Place, Newcastle. Mr. W. Milburn, F.R.I.B.A., president, occupied the chair.

Mr. H. L. Hicks, A.R.I.B.A., the Hon. Secretary, presented the annual report of the Council, which stated that there had been a slight decrease in the total number of members. The roll was now as follows: Members, 89; associates, 90; students, 33. There was again a decrease in the class for students, though it might be noted that four of these had been transferred to the associate class. They had to regret the death of Mr. Peter Rosby Donald, an associate member, and of Mr. Richard John Leeson, of the firm of Messrs. Oliver, Leeson & Wood, who joined the Association in 1896 and resigned in 1910. By the will of the late Mr. William Glover, the Association had received during the past session the sum of £1,000, which had been invested. The Council alluded to successes gained by students who were associates of the Association, and acknowledged several gifts. The report proceeded to say that an inquiry was being held by the Royal Institute into the question of public buildings erected by official architects, and at the Institute's request the Association was furnishing particulars of work undertaken by official architects in this neighbourhood. In order to discuss the report and recommendations of the Council of the Institute in regard to statutory registration of architects and the Institute's proposed new charter, the Council had unanimously passed a resolution expressing its opinion that a Registration Bill was necessary, but in view of the difficulties of obtaining the Bill the Council agreed that an application be made to the Privy Council for a new charter as a preliminary to the active promotion of a Registration Bill. This resolution had been carried unanimously by a meeting of members. Several excursions were held, and a number of interesting meetings had been arranged in connection with the Association.

Prizes in the students' competitions were awarded as follows:—

Measured drawings (age limit twenty-five years)—Mr. George H. Gray.

Measured drawings (twenty-one years)—Mr. William J. Reed.

Architectural sketches (age limit twenty-five years)—Mr. H. St. John Harrison. Age limit twenty-one years—Mr. W. J. Reed.

Glover Studentship (age limit twenty-five years)—Mr. Harrison.

The Treasurer (Mr. J. T. Cackett, F.R.I.B.A.) presented the financial statement, which showed a balance in hand of £49 3*s.*, as compared with £29 16*s.* 6*d.* at the end of the previous year. This report also was adopted.

The election of officers for the ensuing session was as follows: President, Mr. R. Burns Dick; Vice-President, Mr. C. S. Errington; Hon. Treasurer, Mr. J. T. Cackett; Hon. Librarian, Mr. J. Bruce; Hon. Secretary, Mr. H. L. Hicks; Hon. Assistant Secretary, Mr. C. I. Greenhow. The following gentlemen constitute the Council: Messrs. G. T. Brown, H. C. Charlewood, F. E. Dotchin, L. G. Ekins, W. Milburn, J. Oswald, A. B. Plummer, F. W. Rich, A. K. Tasker, J. W. Taylor, H. Wright, M. G. Martinson, W. Milburn, junior, and F. N. Weightman, with the following Local Secretaries: Messrs. J. Hall (Sunderland), W. T. Jones (Durham), J. H. Morton (South Shields), and W. J. Moscrop (Darlington).

PATENT SPECIFICATIONS PUBLISHED, MARCH 12, 1914.

Selected and abridged by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

No. 28,642. Dec. 12, 1912.—C. H. Schol, Allendorf, Dillkreis, Germany. Manufacture of light slabs, blocks, bricks, plates, boards, and the like from blast furnace slag.

3,875. Feb. 14, 1913.—W. Putman and J. W. Rawden, Town Hall, Morley, near Leeds. Apparatus for cleaning water mains and the like.

4,286. Feb. 19, 1913.—A. A. Scott, 112 Scott Street, Knoxville, Knox, Tennessee, U.S.A. Methods and apparatus for the burning and like treatment of bricks.

4,620. Feb. 24, 1913.—G. H. Thomas, 24 Atlas Road, Canton, Cardiff. Fastener or holder for sliding windows.

4,679. Feb. 24, 1913.—C. W. Zerenner, Norfolk House, Laurence Pountney Hill, E.C. Manufacture of fireproof composition and the production therefrom of artificial marble, slabs, blocks, or the like for the construction of flooring, partitions, staircases, encasing or protecting iron or steel structures or for other purposes.

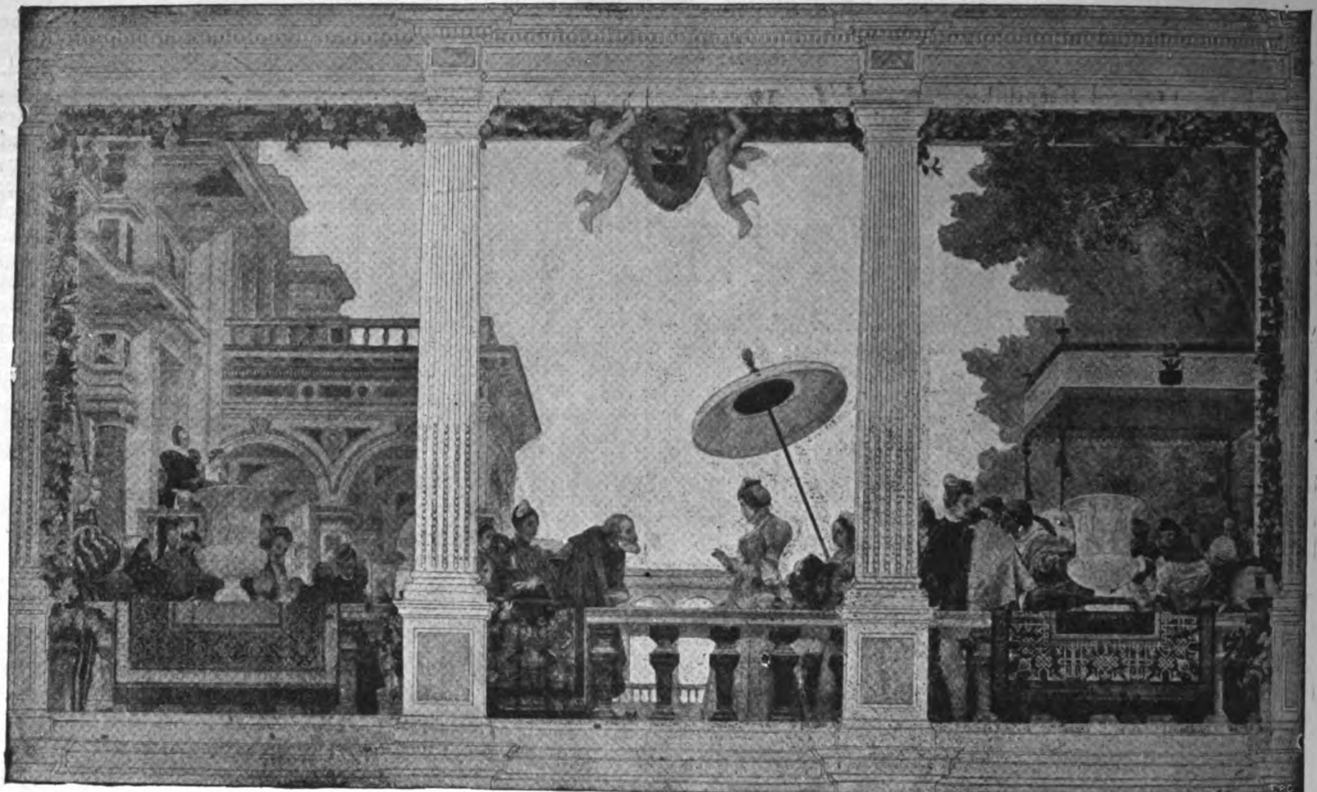
4,785. Feb. 25, 1913.—Chas. Julienne, 50 Fitzroy Street, North Sydney, New South Wales, and H. S. Chambers, "Kooringal," Cecil Street, Gordon, near Sydney, New South Wales. Water heaters.

4,906. Feb. 26, 1913.—J. C. Diaper, 2 Heath Villas, Virginia Water, Surrey. Safety fire escape.

5,208. March 1, 1913.—H. N. Barnes and E. Pollard & Co., Ltd., 29 Clerkenwell Road, London. Draught and dust excluding means for doors, windows, showcases, cabinets, and the like.

7,038. March 25, 1913.—McTavish, Ramsay & Co. and A. L. Ramsay, both of 5 Seafield Lane, Dundee. Manufacture of artificial wood.

8,062. April 12, 1913.—S. R. Parkes, Pretoria Works, Willenhall. Locks.



A Renaissance Fête (The Arrival).

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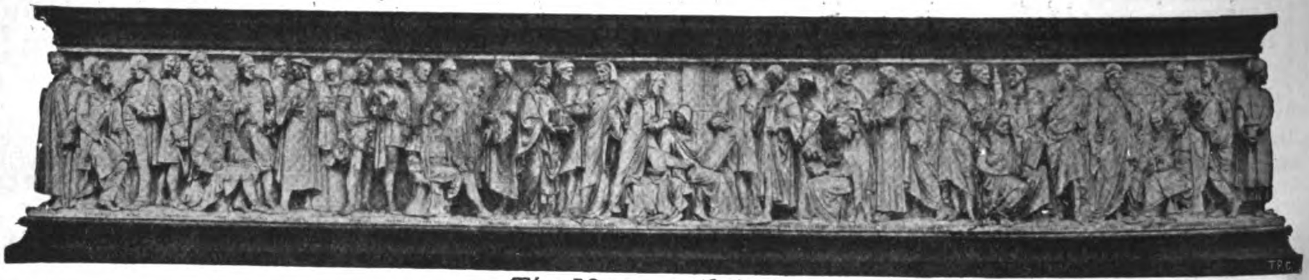

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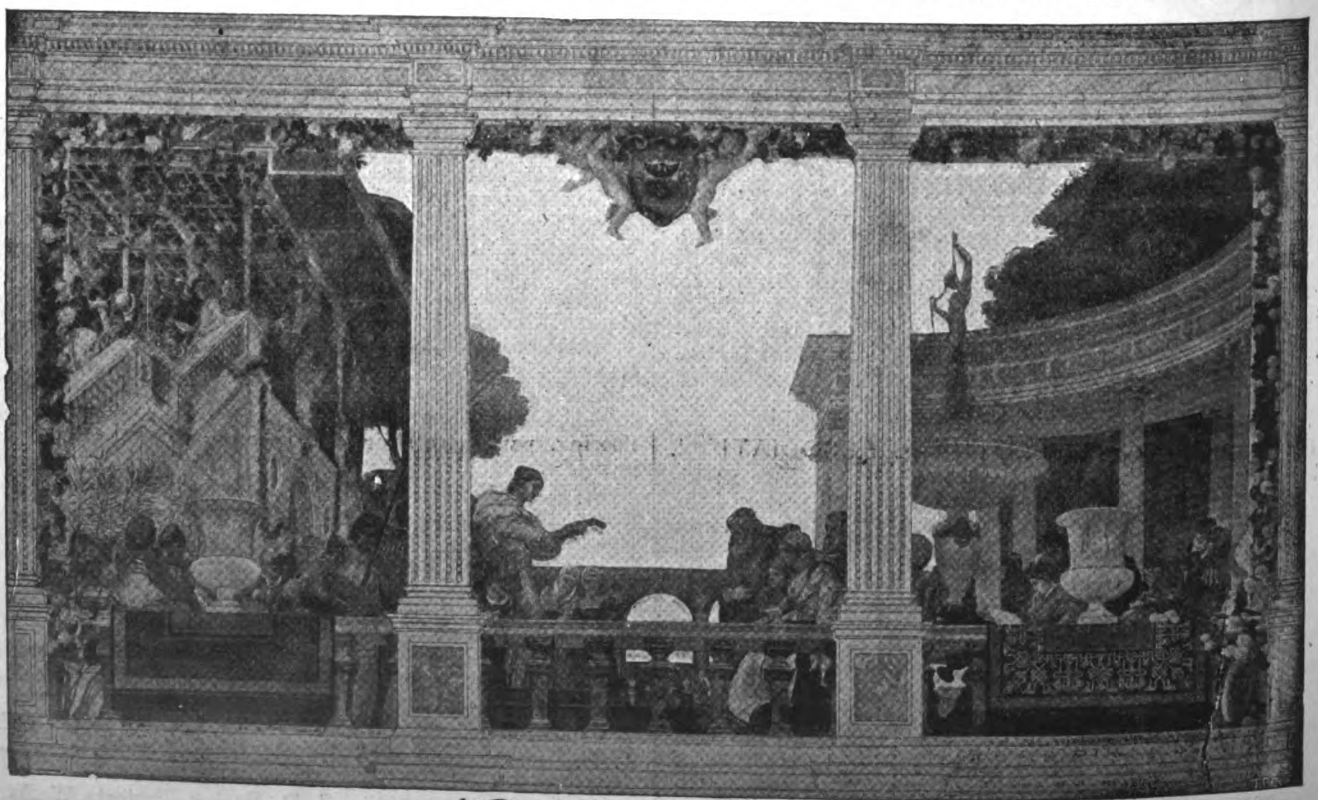

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By Pierre Victor Galland. From a Wall Painting in the Palace of Narischkine, St. Petersburg. A beautiful Tinted Ink Photo. Size 40 in. by 22 in. Price 2*s.* 6*d.* Free by post, carefully packed inside patent roller.

14,749. June 26, 1913.—C. Salvatierra Iriarte, Street Jacometrezo 33, Madrid. Armoured concrete columns.

15,431. July 4, 1913.—H. W. Westlake, Parkfield Works, 118 Alderson Road, Sheffield. Flush bolts or fastenings.

19,947. Sept. 3, 1913.—Carl Tuchscherer, Lohestr 56, Breslau, architect. Construction of brick and like walls.

20,815. Sept. 15, 1913.—W. L. McFarland, Fairfield, Wayne, Ill., U.S.A. Concrete mixers and spreaders for laying down continuous paving and the like.

21,910. Sept. 29, 1913.—J. J. Doyle, 115 East 82nd Street, Manhattan, U.S.A. Time recorders for locks.

Any of the above specifications may be obtained from J. D. Roots & Co.

Correspondence

[The Editor will not be responsible for the opinions expressed by Correspondents.]

"Pudloed" Cement.

Sir,—There has come to my notice a clipping from your publication, being a letter signed J. H. Kerner-Greenwood, and dated November 26, 1913, from which the following is an extract:—

"There is another advantage which 'Pudloed' cement has in varying temperatures, and that is the repelling action against frost. I have sent out to Winnipeg forty-four tons this year for the new reservoir there, and Professor Brydone-Jack, of the Manitoba University, was chosen to test my powder along with about a dozen other methods of waterproofing reservoir, and he came to the conclusion that 'Pudlo' was best because it stood every climatic condition which occurs in Canada better than any other method."

This is certainly a surprising statement, as I did not make any such test, nor, according to my records, have I ever made a test on this particular kind of waterproofing.

You would oblige me by publishing this letter in the same column in which the previous letter appeared.—Believe me, yours very truly,

E. Brydone-Jack.

Winnipeg, Manitoba:
February 24, 1914.

Sir,—I thank you for sending me the copy of Professor Brydone-Jack's letter to enable you to publish my reply simultaneously.

We certainly sent forty-four tons (not thirty-five tons as stated in the letter herewith) of "Pudlo" to Canada to the cabled order of a Winnipeg firm. We subsequently received several letters from Canada telling us that this consignment was being used on the Winnipeg reservoir.

Our Australian agents, the well-known firm of Messrs. A. G. Kidston & Co., Fenchurch Street, London, sent us a cutting from a Canadian newspaper, with this letter:—

"Dear Sirs,—We just notice a cutting from a Canadian newspaper that you have been successful in securing an order for thirty-five tons to be used by the City of Winnipeg on their 18,000,000-gallon reservoir, and that you obtained this contract after samples of every known waterproofing material of note had been tested. . . ."

The cutting referred to was:—

"Pudlo" Gets Waterproofing Contract.

The makers of "Pudlo" cement waterproofing have secured the contract for supplying thirty-five tons of this material to be used by the City of Winnipeg on the new 18,000,000-gallon reservoir. Samples of every known material of note were submitted, and of the twelve samples tested "Pudlo" was the only one which satisfactorily withstood the tests made by Professor Brydone-Jack, of the Manitoba University. As in addition to waterproofing the cement this material also serves to strengthen it, "Pudlo" may justly be considered as the ideal substance for waterproofing purposes.

It occurs to us that Professor Brydone-Jack may have tested our product under a number, not knowing that the material tested was "Pudlo." If it is not so, and if we have been misled by the Canadian newspapers, we now express our regret.

We are sending Professor Brydone-Jack a copy of this letter.—Yours truly,

J. H. Kerner-Greenwood.

King's Lynn.

The University of Sheffield Vacation Courses.—Department of Architecture.

Sir,—The object of these courses is the study of buildings of architectural importance by means of the making of sketches and measured drawings *in situ*.

The Easter course generally begins about the end of March, and lasts from a week to ten days, while the summer course usually begins about July 8, and lasts from three weeks to a month.

The advantages of these courses are that permission to sketch and measure a series of important buildings is obtained, all difficulties as to the use and hire of ladders, &c., are avoided, and that an instructor is present with the student to give such advice and guidance as may be needed.

The courses are open to all students of architecture.

The students make their own arrangements with regard to rooms and board, but particulars of suitable accommodation are supplied to them.

The fees payable by students, other than those attending courses at this university, are 15*s*. for the Easter course and £2 2*s*. for the summer course. The payment of these fees exempts the students from all charges for admission to buildings, hire of ladders, &c.

Easter courses have already been held in Lincoln, Stamford, Bath, and Painswick, and summer courses in Oxford, Cambridge, London, and Central France. The Easter course will be held in York and district this year, commencing April 11.

Permission to sketch or measure at several interesting buildings (both Mediæval and Renaissance) has been obtained. Visits will be paid to some or all of the following places in the neighbourhood: Skelton, Castle Howard, Selby, Ripon, and Fountains Abbey.

A lecture on the buildings of York, illustrated by lantern slides, will be given on April 14 by Mr. G. Benson, A.R.I.B.A., and the students attending the course are invited to meet the Council of the York and Yorkshire Architectural Society on the evening of April 17.

For the summer course, 1914, a tour in South France is being arranged, in conjunction with the Rev. Dr. West A.R.I.B.A. (author of "Gothic Architecture in England and France"). The tour will begin about the end of August, and will last about twenty-four days. The cost (including fee) will be about £1 1*s*. per day. The route suggested is Paris, Clermont Ferrand, Issoire, Le Puy, Vienne, Orange, Avignon, Arles, Nîmes, Carcassonne, Toulouse, Albi, Rodez, Cahors, Perigueux, Rocamadour, Limoges, and Paris.

Students desirous of attending either course should obtain an application form from the lecturer, and submit it to the Registrar, with the fee. In the case of the Easter course, this should be done before April 4, and in the case of the summer course before July 15.

Any further information desired may be obtained from the lecturer (Mr. W. S. Purchon, A.R.I.B.A.).—Yours faithfully,

W. M. Gibbons, Registrar.

March 1914.

Superintending Architect, Nigeria.

Sir,—In an advertisement which has appeared in the professional journals regarding this appointment, candidature was restricted to members of one architectural institution. In the interest of members of other architectural bodies and of unattached architects, I suggested to the Crown Agents for the Colonies that by so narrowing the selection they were inadvertently doing some injustice to other members of the profession. I have received a most courteous reply from the Crown Agents to the effect that the fact to which I drew their attention did not occur to them when issuing the advertisement referred to, and that in any re-issue the advertisement will be amended to meet the case. They further intimate that in the meantime they will be pleased to consider applications from any suitable candidates.

I think this information will be of interest to quite a number of architects.—Yours faithfully,

C. McArthur Butler, Secretary.

March 18, 1914.

Commendatore Walter Crane showed on Saturday last, at Leighton House, W., two of the four lunettes he has painted for the dome in the reception-room of the Royal West of England Academy at Bristol. Their subjects were "Architecture" and "Sculpture." The commission was won in competition, and is now completed. The other two lunettes, "Painting" and "Craftsmanship," have been in position since October last

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THE ARCHITECT

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FORTHCOMING EVENTS.

Friday, March 27.

Leicester and Leicestershire Society of Architects: Students' evening. Papers, entitled "Domes," by Mr. A. J. Wood, and "A Sketching Tour in Normandy," by Mr. C. J. M. Cowdell, A.R.I.B.A., at 8 P.M.

Saturday, March 28.

Architectural Association: Visit to Roehampton House, St. Serf's House, and Downshire House, Roehampton, to meet at 3 P.M.

Edinburgh Architectural Association: Visits to (1) the Thistle Chapel, and (2) the Usher Hall, to meet at 2 P.M.

Monday, March 30.

Architectural Association: Two Papers on the work of the late Messrs. Bodley & Garner and the late Mr. J. F. Bentley, at 8 P.M.

Surveyors' Institution: Paper entitled "London before the Fire: as referred to in sixteenth and seventeenth century Literature," by Mr. W. W. Jenkinson, F.S.I., at 8 P.M.

Tuesday, March 31.

Incorporated Institute of British Decorators: Paper entitled "Eighteenth Century Dublin," by Mr. J. Sibthorpe, F.I.B.D., at 8 P.M.

Wednesday, April 1.

Royal Archæological Institute: Three short Papers by Dr. Alfred C. Fryer, M.A., F.S.A., at the Society of Antiquaries, Burlington House, W., at 4.30 P.M.

BORROWING IN ARCHITECTURE.

IN the elegant and admirably composed address to which Mr. March Phillipps treated the Royal Institute of British Architects last Monday, there were but few flaws. These, however, were vital. In the first place, it is abundantly clear that Mr. Phillipps does not yet understand architecture. He is still obsessed with the idea that the primary essential in architecture is detail. He utterly fails, as far as we can see, to comprehend the meaning of composition, of rhythm, of mass, of proportion, or to realise that these are among the things that really count in architecture. Still less does he take note of the expression of the artistic personality of the artist in architecture.

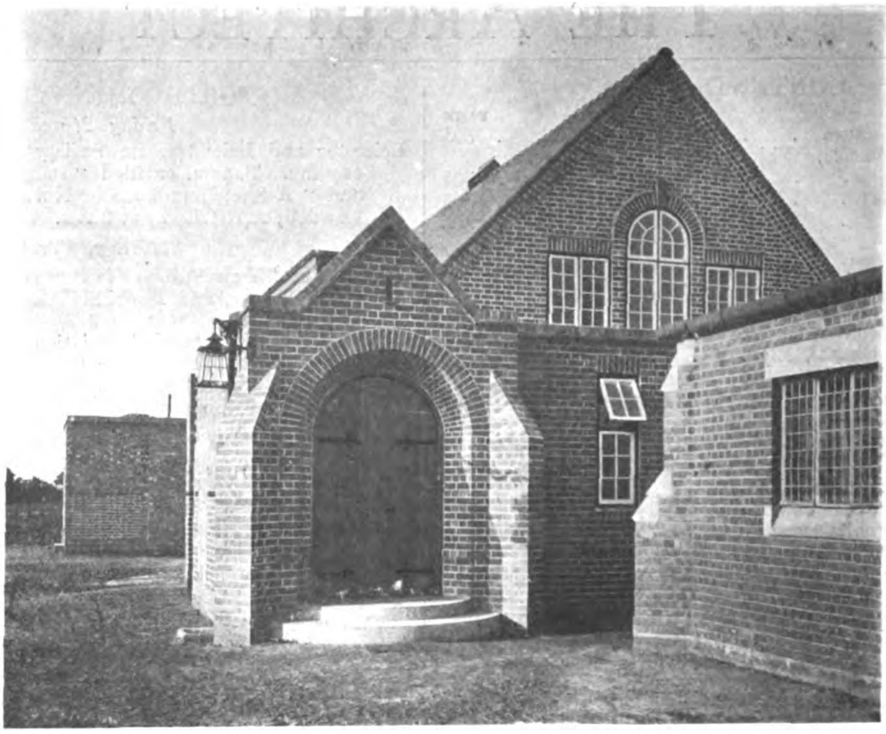
The composition of a building, its arrangement of mass, its variety of rhythm, its scheme of proportion, are all alike absolutely independent of the forms of detail by which they are accompanied. It matters not whether these latter be Greek or Roman, Byzantine or Renaissance. The same general form, the same expression of thought, may be given to a building in whatever language it may be composed. Architectural forms of detail are no more than the vocabulary by the use of which the artist expresses his thought. Mr. Phillipps would not fail to recognise the distinction between the epic and the lyric, notwithstanding the identity or the divergency of the vocabulary in which they are composed. They are, of their essence, different, though both may be written in English or Greek. They do not come into the same category because they are both in the same language. Nor, on the other hand, is the epic more or less of an epic, the lyric more or less of a lyric, because it is written in one language rather than another. So is it in architecture. We have our epics in stone, our lyrics in stone, our sonnets in stone. The particular form of detail in which they are wrought is outside of, and in no way affects, the independence of character that each possesses, and which rests on far more important essentials.

Mr. Phillipps shows his lack of comprehension of architecture in his charge that the Romans "borrowed" the Greek column and entablature for the adornment of their arched construction. In pointing to the aqueducts as examples of true arcuated architecture he fails to recognise that these constructions emphasise most forcibly the æsthetic weakness of the arch. In the aqueducts we have arch after arch, file after file, tier upon tier, in endless succession spanning the valley or the plain, each similar to its neighbour—for there is no reason for change or break—extending into a dim distance that suggests infinity and never-ending movement.

The Indian saying, that "an arch never sleeps," is true æsthetically as well as constructively. The aqueducts do, indeed, express much of the Roman character; they typify the resistless advance of the Roman legions, cohort after cohort ever advancing in a straight and undeviating line over fell and fen. They speak of the energy, the power, and the genius of the Roman. They show, too, the artistic instinct of the Roman in that in them column and entablature are absent, and the arch is left to play its part in full significance.

But when the Roman artist-architect comes to design a building of finite dimensions, be the limits of those dimensions as wide as in the Flavian or the thermæ, he feels the necessity of restraint upon the mercurial mobility of the arch. Its tireless energy must be confined in order that repose and stability may be characteristics of his building. Hence he draws horizontal lines of mouldings between the tiers of arches, he divides arch from arch by strong vertical lines, and at once he is charged with having "borrowed" the entablature and column of the Greek as a decoration. True, Mr. Phillipps may be excused as one who does not understand architecture, but has merely imbibed notions about it from erroneous teaching, in adopting the fable that Roman architecture is but Greek decoration superimposed upon Etruscan construction—a fable that may be relegated to the dim obscurity in which now repose the cognate fables of the evolution of the Ionic order as a graceful and feministic variant of the older, more robust and masculine Doric, and of the invention of the Corinthian order from the pretty conjunction of basket, acanthus, and tile.

Roman architecture, to express stability and repose, was forced, in default of the possibility of using the pyramid, to adopt the lintel and pier as the dominant lines of its composition. The needs of the time required greater span of opening than sufficed for the Greek, and hence the arch became a necessary support of the lintel, with, as we have before pointed out, the restraint of its restlessness by the forcible emphasis of the horizontal and vertical enclosing lines. The Roman artist gave the sense of stable rest to his amphitheatres by the use of column and entablature as dominant lines of his composition rather than suggested by a restless ring



BAPTIST CHURCH SCHOOLS, SHIRLEY, NEAR BIRMINGHAM.—Messrs. Ingall, Bridgwater & Porter, Licentiate R.I.B.A.

of arcading, a never-ending vestal dance of "Here we go round the mulberry-bush."

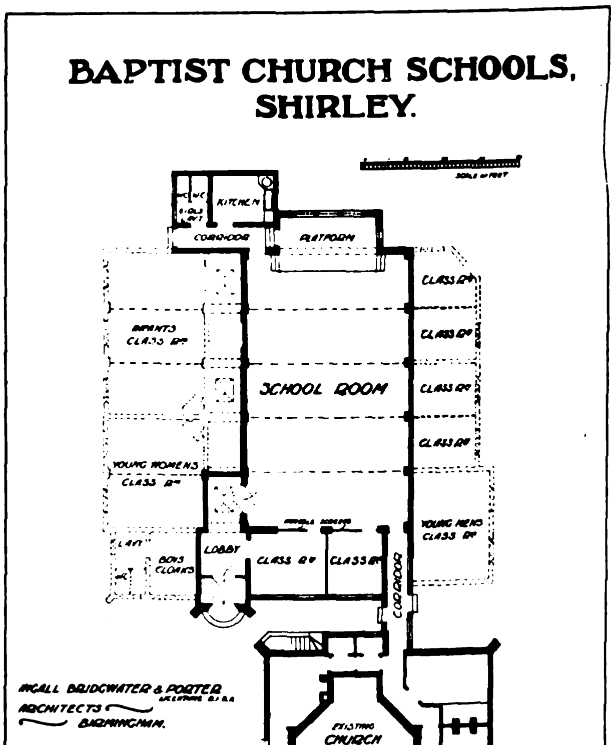
The gravamen of the charge that Mr. Phillipps had to make against architecture last Monday was "borrowing." The Roman was indicted for borrowing from the Greek; the artist of the Renaissance for borrowing from the Roman; ourselves in the present day for borrowing from the Renaissance. For "borrowing" Mr. Phillipps should have said "inheriting." The Roman inherited the orders as he inherited much else, both of language and culture, from the Greek; the Renaissance inherited from Rome; ourselves from the Renaissance. Each successive inheritor has developed and modulated that which came to him from the past; but the nuances of this development and modulation are beyond the present comprehension of architecture displayed by Mr. Phillipps.

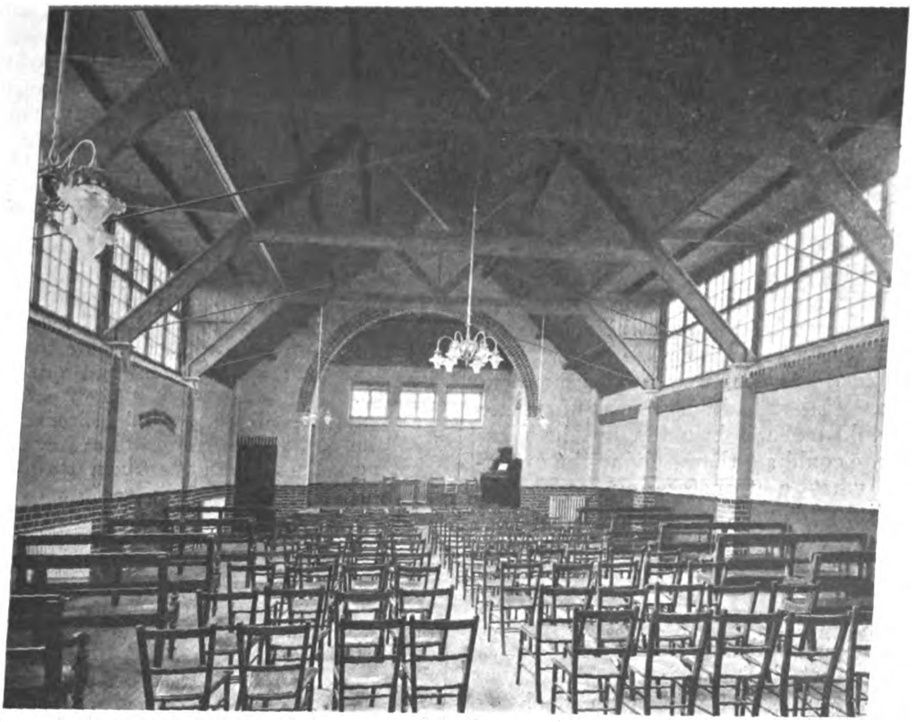
In advocating the abandonment of our inheritance of the vocabulary of architecture, Mr. Phillipps shows an inconsistency that deprives his arguments of the appearance of truth and sincerity. There is scarcely a word in his eloquent literature that he has not borrowed from the language of Shakespeare and Milton, and if he sincerely desires present-day architects to abandon their inherited vocabulary he should set them an example by addressing them in Esperanto. We have our Esperantists in art, in architecture, as in painting. Fitful spasms occur in England. Berlin and Vienna show a more general abandonment of tradition and a restless striving after methods of expression unlike anything that ever was in earth, or sky, or sea. We Englishmen are notoriously bad linguists, and find difficulty in expressing our thoughts in other language than that we have inherited from our forefathers; hence our modern architects are truly representative of the life of our time when they adhere to the architectural vocabulary of Inigo Jones, Wren, Gibbs, and Chambers.

Mr. Phillipps professes that he would have present-day architecture more reflective of the democratic spirit of modern life. But in all great periods art has been democratic, because the people appreciated art with a clear understanding. Is that the spirit of modern democracy? Is it not rather merely a craving for more wages, so that there may be more threepences for the cinema, and an extra bob for the Lincolnshire and Grand National double?

BAPTIST CHURCH SCHOOLS, SHIRLEY, NEAR BIRMINGHAM.

The scheme for these schools, which are attached to the recently erected Guy Memorial Church, provides for a large school-room, surrounded on three sides by class-rooms (divided from the main room on two sides by folding partitions and on one side by a corridor), and kitchen and lavatory accommodation. The exterior is faced with "Titford" brindle bricks with white mortar joints. The roof to school-room is covered with brown tiles, with asphalte flat roofs to the class-rooms, &c. The interior has a "Titford" brick dado with distempered brickwork above. The first portion of the scheme, which includes the main school-room, two class-rooms, kitchen,





BAPTIST CHURCH SCHOOLS, SHIRLEY, NEAR BIRMINGHAM.—Messrs. INGALL, BRIDGWATER & PORTER, Licentiates R.I.B.A.

girls' lavatories, entrance lobby, &c., has recently been completed at a cost of £1,318.

Mr. T. Johnson, of Birmingham, was the builder, and the architects were Messrs. Ingall, Bridgwater & Porter, Licentiate R.I.B.A.

NOTES AND COMMENTS.

THE collection of students' drawings hung on the walls of the Institute gallery last week-end was a striking illustration of the present position of the British architectural student in design and draughtsmanship. In the first place there is clearly existent a danger that the young man of to-day who is seeking to qualify for membership of the Royal Institute tends to think more of his draughtsmanship than his design. He thinks he must aim at the production of drawings as much like those of the Ecole des Beaux-Arts as the adoption of the mannerisms of the Ecole will ensure. Even the Architectural Association School has bowed the knee to Baal. Fashion, too, has trammelled design, and the dexterous manipulation of approved types of detail take the place of invention, not to say of fancy. Many worthy examples there are both of drawing and design, but there is an overwhelming sense of a desire to do that which is likely to be approved.

An additional protocol to the revised International Copyright Convention of 1908 gives power to the countries belonging to the Copyright Union to take retaliatory measures in respect of those countries outside the Union who fail properly to protect the works of authors who are nationals of the signatories of the Convention.

That the injury done to the building trade by the People's Budget is recognised is clear from the question asked in the House of Commons by Mr. Fred Hall, and the reply of the Financial Secretary to the Treasury. Mr. Fred Hall asked whether legislation would be introduced in the present session with a view to making it clear that builders' profits were exempt from increment duty under the Finance (1909-10) Act, 1910, and that such duty was only to be levied on the increment of value accruing to land from the enterprise of the community or the landowners' neighbours. Mr. Montagu (Financial Secretary to the Treasury) replied that the Government propose shortly to introduce legislation relating to builders' profits on the lines of the clauses in the Revenue Bill of last session.

The election of Mr. Edward S. Prior, M.A., to the position of Associate of the Royal Academy will strengthen that body from an educational point of view, for the outstanding features of Mr. Prior's record have been his lectures and writings. Mr. Prior is the third son of Mr. J. V. Prior, Chancery barrister, and was born in 1852. Educated at Harrow and Caius College, Cambridge, he was a pupil of the late R. Norman Shaw, R.A., has been architect to Cambridge University, Harrow School, and Winchester College, and is responsible for the building of a number of churches and houses in various parts of England. One of the founders of the Art Workers' Guild, he was its Master in 1906, and has been secretary to the Arts and Crafts (London) Exhibition Society since 1902. He is Slade Professor of the Fine Arts at Cambridge, and author of, among other books, "A History of Gothic Art in England."

The work of Mr. Robert Anning Bell has been so often intimately connected with architecture that we may regard his election as Associate as of special interest. Mr. Bell has done and is doing admirable work at the Glasgow School of Art, to which he moved after for some time being on the teaching staff at Liverpool. No less as graceful and imaginative illustrator than as designer for stained-glass and other decorative work, no less as painter than as student and adviser, Mr. Bell is widely known and highly esteemed. He is doing much towards the decoration of Westminster Cathedral. Mr. Bell was nominated for Associateship in 1907, three years after he had become full member of the Old Water-Colour Society. In 1906 his water-colour, "The Garden of Sweet Sound," was bought by the Chantrey trustees for 100 guineas.

Professor Selwyn Image in distributing the prizes to the students of the Croydon School of Art gave them some very sound advice. He said that with every art and craft the first essential was to learn one sound way of doing it, and that was to be learned from their masters or teachers. This did not mean tying themselves down and ruining their originality. If they had any originality worth the name it would assert itself presently, all in good time. The thing of the moment was to obliterate one's self and assimilate the master. All great artists started by being disciples. They first learned quietly one sound method. Before letting themselves go there must be obedience, cheerful and real, which was not always easy in shifting and exciting days like the present, with all sorts of half-educated, impudent, new theories about art in the air. He warned them that after their student days they would be hampered and thwarted, for if they had any genuine artistic stuff in them they would inevitably be possessed by certain strong personal feelings and views. But even so far as their art went, let alone their character, difficulties would do them a world of good, put them on their mettle, awaken inventiveness, bring out resources unknown before, and, in fact, be as beneficial as a frost might be in a too early spring. The prospect of not getting one's own way need discourage none but the poltroon. If they had but a spark of artistic gift in them they would make it brighten up the most unsympathetic task fate could set them, giving the opportunity of showing what a transforming agent the presence of the artistic spirit was.

In the *Sunday Times* Canon Hannay discourses on the domestic window and argues that the use of the casement in our present-day middle-class houses is evidence of the love of their inhabitants for beauty. He says: I am now sure that the middle-class Englishman is enthusiastic in his love of art and is an idealist of that rare kind which sacrifices comfort for beauty. I do not say that he makes his sacrifice without grumbling. That would be too much to ask. Even artists themselves indulge in complaints about the world's failure to appreciate them, which is their way of grumbling at the loss of material comfort. It is not to be expected that the ordinary man will bear the loss better than an artist. Casement windows are, of course, a feature of old English houses; but I have always doubted whether the old Englishman used them with the deliberate intention of making his life beautiful. I do not believe he was as artistic as all that. Only the modern middle-class Englishman is. His great-grandfather, who lived, perhaps on a farm down in Sussex, had casement windows with small panes because he did not know how to make plate glass, and had not yet hit on the idea of sashes with cords and weights. The next generation invented sashes and improved its windows by making them with larger panes. Then came plate glass and with it the possibility of a really comfortable window. The men of that period, our fathers, went in for large, sound, weather-tight, plate-glass windows which let in the light and kept out rain. But they did not care about art. Their sons and daughters, the middle-class English of to-day, are much nobler. They have given all things for beauty. Their windows prove it. I, for one, will never again believe that the English are materialised or that they value beef, beer, and comfort above the things which belong to art.

Professor Haverfield, in his annual report on "Recent discoveries in Roman Britain," alluded to the verification of a Roman encampment at Ythan Wells, in North Aberdeenshire, which had sheltered a large Roman force for a few days. On the wall of Pius, between the Forth and Clyde, he mentioned that the sites of three forts and the line of the wall had been fixed. Mr. Miller, of Glasgow University, had excavated an interesting fort at Balmuildy, near Glasgow. Elsewhere forts had been commenced or continued, and good additions had been made to our understanding of how the Romans conquered and held down the hill tribes of Western and Northern Britain. At Chester a graveyard of the legionary fortress had been examined, and eight miles away, at Holt, the kilns had been further explored. Evidently the garrison made their own pots and pans and were independent of the contractor. Chief among the non-military settlements was the county town of Viroconium or Wroxeter, where a successful season had revealed the foundations of a temple of the Italian rather than British style. At Colchester the striking ruin of the western gate had been examined, and at Canterbury another mosaic testified to the Romano-British county town. Clearances for new buildings of the General Post Office in London had laid bare Roman rubbish pits. It was important that an opportunity should be given for these pits to be cleared out, so that something more might be learnt of Roman London.

COMPETITION NEWS.

Anglesey.—The Committee of the Anglesey Chair Eisteddfod have received from Lord Boston a promise of a prize of ten guineas to be offered for the best design of a workman's cottage, to cost not more than £180, suitable for Anglesey, with specification and quantities of materials required.

Barnsley.—Members and Licentiates of the Royal Institute of British Architects are again warned that they must not take part in the Town Hall competition, because the conditions are not in accordance with the published regulations of the Royal Institute for architectural competitions.

Great Grimsby.—Members of the Society of Architects are requested not to take part in the competition for the proposed Constitutional Club without first ascertaining from the Secretary whether the conditions are such as can be approved by the Society.

Italy.—With reference to the notice on p. 138 of *The Architect* of February 6 relative to a competition of plans for villa-flats at the Lido, Venice, it is notified that H.M. Vice-Consul at that city has now forwarded a copy of the conditions (in English) and a list of local prices of labour and material (in Italian). To obviate the necessity to view the site, the company has prepared a large coloured plan of the Lido, which may be obtained on payment of 5 frs. from the "Direzione della Compagnia Italiana dei Grandi Alberghi, S. Maria del Giglio," Venice, where also plans will be received on June 30. Copies of the conditions and other particulars may be obtained from the Commercial Intelligence Branch of the Board of Trade, 73 Basinghall Street, E.C.

Motherwell.—Mr. J. Wilson, of the Local Government Board, has made his award in the competition for a municipal housing scheme for the burgh. The successful architect is Mr. A. Victor Wilson, Motherwell, whose scheme is estimated to cost £13,000.

ILLUSTRATIONS.

S. PAOLO EXTRA MUROS, DETAIL OF CLOISTER—S. GIOVANNI LATERANO, DETAIL OF CLOISTER—S. MARIA SOPRA MINERVA, ROME, TOMB OF GUGLIELMO DURANTE—PULPIT IN S. MARIA IN ARACOELI, ROME.

These examples of "Cosmatesco" art are in accompaniment of Signor Melani's article which was commenced in our issue of last week, and which is continued on the opposite page.

PRIOR CRAUDEN'S CHAPEL, ELY.

This chapel was built in 1330; that is, two years after the commencement of the central lantern.

OXFORD COLLEGE SERIES, NO. 134.—JESUS.

The chapel was finished and dedicated in 1621, its erection having been commenced in 1613. As in many of the Oxford colleges, there is an ante-chapel at the west end formed by a screen. It was not long before the chapel, as originally built, was found to be too small, and in 1636 it was lengthened eastwards. This plate of the chapel of Jesus completes our series of this college.

The Warden and Fellows of Winchester College have entrusted to Mr. Reginald Blomfield, R.A., the restoration of School, of which Sir Christopher Wren was the architect.

The Brighton education authorities propose to erect at Patcham, a northern suburb of the town, a one-storey public elementary school at a cost of £19,250. The new building will accommodate 200 boys, 200 girls, and 280 infants, provision being made for 250 additional places. The classrooms will accommodate forty to forty-eight scholars, instead of sixty. Shower baths for twelve scholars at a time are to be provided, and there is also to be a large swimming bath.

SO-CALLED "COSMATESCO" ART AT ROME, LONDON AND ELSEWHERE.*

By Alfredo Melani.

(Concluded from last week.)

Another family turned its attention to the "Siculo-romano" art, the family of the Vassalletto, whose name was discovered by Barbier de Montault, and whose unpublished memoirs have been brought to light by Giambattista de Rossi, enlarged by the much more recent studies of M. Gustavo Giovannoni. Our art is indebted to the Vassalletti for the celebrated cloisters of S. Paolo and S. Giovanni Laterano. And in our search for "marmorai" we find, amongst isolated masters, the Oderisi, who directly interest England. So after having pointed out, amongst the Vassalletti, that Pietro Vassalletto, who sculptured, with Niccola d'Angelo, the paschal candelabra of S. Paolo at Rome, one of the most exquisite sculptured monuments dating from the twelfth century, we meet with a Pasquale, who worked in the thirteenth century at S. Maria in Cosmedin, and with a Pietro Gusmati, who lived in the "Eternal City," not to speak of a Drudo of Trivio (thirteenth century), *Magister Drudus*, very skilful in his art, who is known by the name of the place at Rome where he had his laboratory; we know also of a Pietro Amabile, who in 1197 worked at S. Vittorino in Amiterno (Abruzzi), and of a Peregrino occupied in the twelfth century at Salerno and, perhaps, at Sessa.

We thus come to Pietro d'Oderisio, author of the monument (1268) to Clement IV. at Viterbo, and of the monument to the Prefects of Vico at S. Maria de' Gradi, monuments which have found their way to the church of S. Francesco in the same town, and whose name associates Italy with England, Rome with London, in the branch of art known as "Cosmatesco."

This trace of it in England, in Westminster Abbey, whose walls are everywhere frankly overloaded with monuments, among which the little work of marble marquetry is ill at ease, one might say, for the very reason of the superabundance, is very singular. Nevertheless, there is to be seen there a little monument without inscription assigned to the daughter of Henry III., a quadrangular urn in Purbeck stone (1.55 metre by 0.75 metre), with decorations in mosaic stones and coloured enamels; the shrine of Edward the Confessor with a partly legible inscription, *Petrus Romanus Civis*, the monument to Henry III., the second founder of the Abbey, erected in 1281, and the "*alexandrinum opus*" paving with the name of the author, *Odericus*. England possesses besides the paving of Canterbury Cathedral in the same style. Of all these works the shrine of Edward (whose body was placed there in 1269) is the most monumental. It is surrounded by spiral columns with isolated piers of quadrangular shape at the angles, surmounted by a high Classic entablature, whose restoration was carried out in Queen Mary's reign, with trefoiled open arches between the twisted, deformed columns, one of which, at the south-east angle, was restored by the architect Sir Gilbert Scott. With the restoration of the entablature the inscription, which Matteo Paris has preserved for us, was lost, the text of which is as follows: ANNO MILLENIO—DOMINI CVM SEXAGONO—ET BIS CENTENO—CVM COMPLETO QVASI DENO—HOC OPVS EST FACTVM—QVOD PETRVS DVXIT IN ACTVM—ROMANVS CIVIS—HOMO CAVSAM SI VIS—REX FVIT HENRICVS SANCTI PRESENTIS AMICVS. The more modest monument of Henry III. comprises two storeys decorated at the angles by twisted columns, and is rectangular, bearing the recumbent statue on the top between the surface of the columns of the great Abbey. It is isolated, beneath a sort of canopy, with small windows on the first storey, square and trefoiled openings, intended for the reliquaries, decorated with enamels and polychromic mosaics, which include gold, green serpentine marble, and red porphyry. The upper slab, on which the statue rests, measures 2.30 m. by 0.90 m., its height 0.98 m. The monument, as far as the horizontal ordonnance, was finished in 1291, and the statue is a bronze by John Torel, formerly attributed to the Roman artist Pietro Cavallini, a painter and sculptor, according to Vasari. This substitution of authorship, which was at first hypothetical, is now definitely recognised, the Englishman Torel's paternity to the bronze of Henry III. being vouched for by documents, although it is true that Cavallini worked with the so-called "Cosmati"—that is to say, the Mellini, particularly Giovanni (1299), Adeodato (about 1300), and Pietro (1291-97).

The floor of the shrine is ornamented with a mosaic of Purbeck stone, and although the design of *rotae* (circles) or S-shaped upright and reversed is identical in general line to the Roman compositions, it differs from these compositions in that its work is carried further, being more patient and minute; for example, whereas at Rome an old green circle covers a surface, in the middle of a *rota* at London are to be seen little inlaid, square, or rhombus pieces in converging circles. Perhaps the difference is justified by the absence of large monolithic pieces. The date of the floor is 1268, it being built to the order of the abbot Richard of Ware, who was well acquainted with the Eternal City, whence he obtained the artists and the idea of the richly inlaid art. The inscription can easily be transcribed: *Abbas Ricardus de Wara qui requiescit—Hic, portat lapides quos huc portavit ab Urbe.* The author, Odericus, was brought to England by the abbot Richard, with the Petrus of the copied inscription. Scott remarks that our abbot arrived at Rome in 1258, that he stayed there two years, and, having admired the works of the so-called "Cosmati" and made the acquaintance of the artists, he thus brought the so-called "Cosmatesco" art to London. Hence associating Westminster Abbey with several basilicas of the Papal city, save for the differences already noted and some others—for example, the metal letters to be found in London but not in Rome and its surroundings.

With reference to the open arcades in the monument to Edward the Confessor, it has been said that they served to accommodate sick people who went there to pray for the intercession of the miraculous King, who was celebrated for having accomplished cures, especially glandules in the neck (c.f. Scott, "Gleanings from Westminster Abbey." London, Oxford, 1863.)

Pursuing our researches, we find a Maestro Stefano Oderisi belonging to the same family working in London, whose name was found, according to De Rossi, on the altar of S. Niccola of the Prefects at Rome. The inscription states that the paving, altar, and ciborium were by a STEFANVM ODERISI LAPIDICINVM MAGISTRVM. It thus appears that *Oderisius* was the father of Pietro and Stefano; and Stefano, after the completion of the monument to Edward, must have returned to Italy for the monument to Clement V. The dates are not contradictory. In Italy the monuments to Clement IV., that of the Prefects of Vico at Viterbo, and the works to S. Niccola of the Prefects at Rome are connected with the name of Pietro d'Oderisio.

I now come back to my starting point, that is to Rome and Sicily, with the intention of particularising upon one side of my inexhaustible subject. And as soon as possible I want to speak of the pulpit of S. Maria in Aracoeli at Rome, a refined example, whose style of decorative composition brings us back to the art of Lorenzo and Jacopo di Tebaldo; that is to say, to the first order of the so-called "Cosmatesco" family. In like manner the tomb of Guglielmo Durante, of Gothic style, presents us with a new example of the second branch of the same family, or, rather, of the Mellini family, of that Giovanni who flourished at the end of the thirteenth century. This tomb, which is particularly dear to us, dates back to that period. Its elegance and delicacy enchant us. In the same style this artist executed at Rome, Sta. Balbina, the tomb of De Surdi, to which we assign the same date, namely, the end of the thirteenth century, seeing that the titulary of the tomb died in 1296.

We shall consequently see that the pulpit of Sta. Maria in Aracoeli resembles more closely the celebrated cloisters of S. Paolo and S. Giovanni Laterano than the Mellini tombs, whilst admitting the dates of two cloisters to be before 1240, the authors of which were the Vassalletto, as has been remarked. Of nearly the same period as this valuable model is the pulpit of S. Lorenzo, by an unknown author, of which the decorative effect is delightful, and whose sides and parapets which we see in the illustration are an addition quite unconnected with the pulpit. One is inclined to assign these parapets or "iconostasis" which decorated the church of Sta. Saba, to-day mutilated, of which I am giving a specimen in a work I am preparing, to the same author, one of the Vassalletto.

As for Sicily, she is not so rich in examples of our art as Rome and its surroundings, but the Palatine Chapel at Palermo, with its basement and, above all, its magnificent paving, is a perfect example. And if ever I should have occasion to speak in *The Architect* of the artistic pavings of Italy, I should show the charm and distinction of the paving in the celebrated Sicilian construction, the Palatine Chapel, which corresponds to the epoch of the first so-called "Cosmati." Inspired by a corresponding taste, the cathedral of Monreale, near Palermo, offers us information as to marble marquetry. Let us notice the basement, or socle, in the interior, but let us pay special attention to the cloister, of which I am going to give an idea. Its coupled columns are very picturesque, and it is deplorable that the extremely rich mosaic or marquetry on the columns should be damaged or lost. Nevertheless, that which remains is sufficient to testify to its beauty and luxury, which recalls to us the happy Norman period in the enchanted isle. The sculptured capitals in the cloister of Monreale must be mentioned, although they do not enter into my subject, on account of the prolific fancy in their expression which veritably charms the eye. Who are the author or authors of this beautiful work? The following inscription may be read upon a capital: Romanvs Marmvrarivs filivs Costantinvs. Who is he? The executant or contractor for the sculptures? It is impossible for one artist to be the executant of the columns and the capitals of the cloister. Neither is the Roman origin of this *Marmurarius* instead of *Marmorarius* certain, since the *u* replacing the *o* inspires legitimate reserve. Besides, in accordance with their custom, the Roman "marmorai" would have engraved their name on the Sicilian monuments. In short, it is a question of artists who did not follow Rome in their execution; and I stop here, confirming my judgment, which is that the art with which we are concerned is united by a thread—that of the "Siculo-romano."

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* See Illustrations.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

A general meeting of the Royal Institute was held at Conduit Street, W., on March 23. Mr. Reginald Blomfield, R.A., President, was in the chair.

Mr. E. Guy Dawber, Hon. Secretary, said it was with great regret that he had to announce the decease of Monsieur Joseph Auguste Emile Vaudremer, the eminent French architect, who had been for forty years connected with the Institute as Hon. Corresponding Member. M. Vaudremer, who was in his eighty-sixth year, was held in the greatest veneration by the profession in France for his architectural achievements and for his high personal qualities, and was very greatly esteemed and admired by the many architects in this country who knew his work and had been brought into contact with him. M. Vaudremer won the Grand Prix de Rome in 1854, and, besides the many important official appointments he successively held, he was a member of the Institute of France and Commander of the Legion of Honour. The regrets of the Institute for the loss sustained by the death of its distinguished Corresponding Member are to be recorded in the minutes, and a message of sympathy and condolence will be conveyed from the Institute to the architects of France through the Société Centrale des Architectes Français.

Mr. Guy Dawber also announced the decease of Mr. Arnold Thorne, Fellow, elected 1888. Mr. Thorne was a Past President of the Devon and Exeter Architectural Society, and some years ago served on the Council of the Institute as representative of that Society. The meeting passed a vote of sympathy and condolence with the relatives of Mr. Thorne.

Mr. George Hubbard, F.S.A. (Vice-President), proposed a resolution that, subject to the approval of the Privy Council, By-law 28 should be suspended from March 31, 1914, to June 30, 1915. The resolution was carried unanimously.

Mr. Reginald Blomfield said he had to thank the members for their kindly thought in passing him a vote of congratulation on his election as a Royal Academician. He felt the honour very highly; but just as highly did he feel the sympathy of his professional colleagues, for without it, and if there was no reason for hoping that the honours conferred were backed up by the opinion of colleagues, such honours would be without much value. There was also another point of view, and that was the public one. Such honours as that on members of the profession were a recognition by painters and sculptors of the art of architecture. His own view was that their art deserved greater recognition than it has hitherto received, inasmuch as it was steadily moving onward, and the architecture of this generation was better than that of the past. He spoke as an observer during the past twenty-five years. They had to-night a brilliant writer and critic who did not share those views.

Mr. L. March Phillipps then read a paper on

Borrowing in Architecture.

The question of borrowing in architecture is of particular importance at the present time. Borrowing is carried on nowadays on so extensive a scale as almost to constitute itself the art of architecture. Knowledge is much wider than ever before, the whole world and its history are so much more open to scrutiny that to ransack the ages and spoil the climes is no longer a metaphor. We do it.

And, together with this wealth of material, there has grown up a corresponding catholicity of taste which welcomes all experiments, if not with enthusiasm, at any rate with equanimity. Nothing nowadays seems foreign or far-fetched. Are such unrivalled opportunities for borrowing all clear gain, or are there any drawbacks or limitations implied in the practice?

The word "borrow," applied to architecture, is often used as if it meant the same thing as assimilate. Why should we not borrow, it is asked? All the best builders had always borrowed. It was even a sign of vitality in art to borrow, so that the more we borrowed the better.

But, as a matter of fact, the vital styles have never borrowed. They have assimilated—that is to say, made like to themselves foreign bodies, which have lost their own identity more or less in the process of absorption and gone to nourish and strengthen the assimilating styles. But that is a very different matter. The fellow-word to assimilate is digest. You could speak of a hungry man assimilating or digesting a beefsteak, but certainly not of his borrowing it.

Here lies the difference. The thing borrowed is not assimilated at all. Architectural features which have been borrowed have remained mere foreign accretions stuck on, superficially adhering, and so far from nourishing anything they have always tended to cripple and weaken the vitality of the style they are affixed to, much as ivy saps the life of the tree to which it clings. Finally, if they come in sufficient numbers, they kill the existing style outright, and then they proceed to form a style of their own, composed altogether of borrowed features, in which the principle of life is extinct.

Creative epochs, in which art and life are in touch with each other, assimilate but do not borrow; non-creative epochs, in which art has lost touch of life, borrow but do not assimilate. The history of architecture, as we know and use it—from Greek days onward, that is to say—shows that downright flagrant borrowing has twice been resorted to as a source of ideas and as a substitute for creative effort. The first time was when Rome borrowed from Greece; the second time was when Europe borrowed the resulting mixture from Rome. At the time Rome borrowed from Greece she was developing a style of her own, effective, original, and of great promise, and the borrowing process certainly acted as a check upon this.

The true Roman idiom was the arch. Naturally, when left to herself it was to this she inclined. To his mind the most characteristic and noblest structural works of the Romans are their aqueducts, bridges, drains, and roads. In these they were themselves, and the qualities which are discernible in these—a stern simplicity, a sense of practical purpose ennobled by a correspondingly direct treatment—may often be dimly apprehended behind the Greek additions to their more ornate buildings.

In fully developed Roman architecture the arch-principle—the real Roman—is hidden away in the middle of it, half suffocated, thwarted, powerless to develop; while the surface and outside are occupied with Greek features, true borrowings, you will observe, not assimilated and never to be assimilated; foreign in their very nature and merely serving to choke the vigour and life out of the structure they adhere to.

Typical Roman buildings are made up of a core of masonry which is Roman and a veneer of marble which is Greek. The Roman core is arched, the Greek veneer trabeated, and it is these two principles which are irreconcilable and mutually destructive. They are irreconcilable not only outwardly and apparently, but inwardly, in what they are doing and in the force they are exerting. They represent respectively the active and passive principles in construction. Thus a great arched building, a S. Sophia or a Mediæval cathedral, is a composition of activities which would burst it asunder like a lyddite shell were it not for the fact that they are matched to hold each other in check. Trabeated construction, on the other hand, is passive. Downward pressure is met by vertical support. The weight on the columns sleeps. No activity is generated.

What happened to Roman architecture? The Romans never spoke out, never dared to be themselves, in architecture. And for its untruth to itself their architecture paid the penalty in the growth of a style of quite evidently artificial composition, a style which ignores the creative instinct altogether. At Sbeitla, in North Africa, where the remains of a Roman town overlook from the slopes of the Atlas the vast distances of the Sahara, the spectator is extraordinarily impressed by the mechanical and Juggernaut quality in this architecture. Here, in this strange, remote land of palm and desert and fierce sun, here were the same old temples and triumphal arches, the same old capitals and entablatures and egg and dart mouldings and acanthus leaves all cut to the same pattern which had become a kind of architectural routine all over the Empire. And on the edge of the Syrian desert it is the same, and all over Europe. Wherever the eagles went they built their eyries to the same pattern.

This is the first great example of borrowing which we have to notice. And now to the second instance—the Renaissance, or, rather, the Renaissance as it affected England.

A great silent revolution in thought and in ideals was taking place in the fifteenth and sixteenth centuries in England, and was itself effecting a like revolution in the national style of building.

Gothic is still the religious style par excellence; and that not because of its past association, but because naturally and instinctively people recognise in the upward rushing lines and ribs of stone a visible incarnation of the dominant spiritual impulse. The spirit of chivalry, the spirit of asceticism and entranced contemplation, the spirit which strewed the roads to Palestine with the dead of both sexes, this spirit still utters itself in the incredibly tall vaults and fearful vigour of the ascending lines, no less than in the narrow and cramped proportions of early Gothic architecture. But turn a century or two, and you will find both the life and the expression of it changing. There sprang up all over England during the fifteenth and sixteenth centuries a shrewd and matter-of-fact temper, very practical and with a highly developed sense for material considerations. Authority and importance are in process of shifting from knight and monk to hard-headed business men, yeoman and tradesmen. The English Renaissance, before it became mixed up with any Italian ideas or Classic expedients whatever, represented no more than that turning from the things of heaven to the things of earth which was common to it in all nations, and, in all nations, was the first cause and origin of the movement.

There was a difference between the movement in England and the movement in Italy. In maturer Italy intellect responded to the mundane appeal with the utmost promptitude, the consequence being that the Italian Renaissance put on, with a fascinating alacrity, all the manifold beauties and graces which belong to an intellectual interpretation of the universe. In England we missed that. The mundane movement in England throughout the fifteenth century, and as long as it remained a national affair, was in the hands not of scholars and artists, but of merchants and artisans.

Bold, simple, reasonable were the methods which the Tudor English builders proposed for meeting the new situation; and it is remarkable that the obstinacy of the national character and the pertinacity with which it stuck to its own methods did enable it to do here what was done nowhere else in Europe—namely, to evolve a northern style of Gothic on horizontal lines, that is, on Renaissance lines. Tudor is northern Renaissance. It is, that is to say, the mundane spirit expressing itself in terms of northern art, and it constitutes by far the most definite and important contribution that England has ever made to the history of architecture.

We have now reached the point where the second great borrowing epoch begins. There is one difference between it and the same point in Roman history which is worth noting. The Roman borrowings concealed, and at the same time hindered, a genuine Roman style. How far such a style was organic and how far only rudimentary is matter of speculation. In the case of England, it is not matter of speculation. At the time our borrowing began there was, as we know for a fact, a native style in full blast; a style which was answering the new needs of life adequately and vigorously; a style which justifies its claim to the title of style by the consistency and coherence of its constructive expedients. English architecture was setting itself to solve the problems of the age with so much success that actually the things it did in that manner remain unapproached to this day. Nothing that has been done on the lines of breadth and spaciousness since the seventeenth century, with the help of all our science and archæology and research and unlimited wealth, can compare, in the public and national estimation, to the results which the Tudor style in its few years of life had already achieved. Yet this indigenous style, in spite of its apparent vigour, grew up under the shadow of an imminent danger. Almost from the first it had to stand a siege. The general desire for breadth and search for breadth in architecture were bringing all Europe in sight of the Classic mode of construction. England alone, impervious old England, who has never had much use for ideas, stuck doggedly to her task of manufacturing her own breadth in her own way. She really did construct the only northern spacious style that ever has been constructed. But the invader was too strong for her. Little by little, filtering in here and there, fixing first on decorative design on the plea of merely enriching the native style, the Italian ideas crept in. But the real fight was not over matters of decoration, but of construction. The real struggle was between those two characteristic structural features, both horizontal in their nature, and in each of which is contained the germ of a style, the Tudor arch and the Latin architrave.

One can narrow down the view to the difference between Elizabethan and Jacobean. Elizabethan is still English, because it retains the English work. Jacobean is Latin, because it uses the Latin architrave. It was with the final victory of the latter than the great borrowing epoch which still continues set in.

Here, then, we stand at what journalists call the parting of the ways: with a self-created national style behind us and a borrowed one in front. Certainly in some particulars the situation was very like what it was in the Roman era. An arched style in both cases is meeting the dangerous attack of that feature in which more than any the clean-cut intellectualism of the Greek genius has embodied itself. The result of the struggle was in both cases the same, and in some respects I think the after consequences have not been dissimilar.

And so, too, in both cases this arbitrary transplanting of foreign forms into the midst of a national style had precisely the same result. It ended not in the nourishing and invigorating, but in checking and finally extinguishing the national creative impulse. That really is a self-evident fact, at least in the case of England. It is admitted, it is indeed patent, that the style we were just now glancing at, with all its vigorous expedients resulting in the thoroughly English, thoroughly coherent, Tudor architecture, was destroyed and put an end to by the Classic invasion.

No one can study Roman architecture—chiefly certainly in its great buildings, its temples, and amphitheatres and palaces, but also to some extent in its villas and fashionable towns, like Pompeii—without realising how very much a matter of automatic routine the art had become. It is not only that the same designs are everlastingly repeated and the same structural features and the same ornament and decoration perpetually reproduced; but the actual work itself, the cutting of the mouldings and sculpture of foliage, hair, and drapery, is so lifeless and automatic as most indubitably to suggest a style which has been sapped of all inward growth and vitality.

Are there not signs around us that the large importations of Classic forms are drawing English art in the same direction, that that is their bias? Sometimes, walking down Parliament Street among the Government offices, or looking at the pilasters and pediments of some great modern Corinthian structure, one feels their incompatibility with any kind of human interest and their total separation from human life.

Is there not this tendency in modern architecture; this tendency to make, as it were, an artificial style out of the alien forms we have amassed?

Mr. Maule, late headmaster of the London School of Architecture, in a recent address to the Birmingham Architectural Association, said: "Was there any reason in the senseless reproduction of meaningless features, which had long since lost any structural reality, and were mere atrophied remains of some ancient structural form?" A tendency to this kind of use, if it should happen to exist, is a natural characteristic of that dead architecture which people sometimes construct out of remnants borrowed from foreign sources.

No more terrible charge than that can be brought against any architecture. The only thing which in the long run keeps architecture straight is constructive truth. Where and of what kind are the stresses and strains and pressures of the structure? Let them speak. They are the architecture; and the clearer they speak the more articulate will the architecture become.

Forms which embody their functions have an eternal sanction. Forms which outrage function, or which pretend to be fulfilling a function which they are not fulfilling, have the lie in their soul.

Yet though this law is so fundamental, there is none more readily lost sight of in an epoch of borrowed forms. In both the great borrowing periods we have been looking at the case has been the same. A core of Roman concrete in the one case was plastered over with alien features, not used constructively, features which were a sham, and which, because they were a sham, could come to nothing themselves nor let the interior masonry come to anything. We, too, have a wonderful concrete, and who can doubt but that, like the Roman, it is capable of development? If it is good building material it is good architectural material. Indeed, it is evident at a glance that both structurally and in the chances it offers of surface decoration it has great opportunities. What hinders it? Why, the misapplied borrowed features with which it is encumbered—features which, because they are shams, pretending to structural uses which they do not really perform, can come to nothing themselves nor suffer the real building material to come to anything. We do not dare to speak out in architecture, to take simply our material and our necessities and fit the one to the other. We are afraid of being ourselves, and we are paying the penalty that Rome paid long ago, in the rise of an official and stereotyped style cut off from human interest and from human life.

DISCUSSION.

Professor Lethaby, in proposing a vote of thanks, said that, however much they might disagree with its substance, they would all agree to having heard a lecture which was most delightful in form, delightful in humour, and delightful in its seriousness. Mr. March Phillipps was quite right in talking about the Juggernaut style of Rome; one saw it all over Europe, especially in the provincial manifestations. But many architects loved the tyranny still, and there existed a great volume of opinion which approved it. It was extremely difficult for himself to speak on the paper, because he agreed with Mr. Phillipps so much. And one felt a disinclination to show one's inmost self. Usually at such meetings they only brought their shells with them, and they rattled them against other shells. In congratulating Mr. March Phillipps on his paper, they might also congratulate the Institute on its courage in asking the lecturer there. It was difficult to conceive of Mr. March Phillipps being asked by the official law society to read a paper on "Joking Judges." Therefore, the Institute had shown a certain generosity. But even in this exercise of generosity they knew how to protect themselves fully. They knew what he would say, and they knew what they themselves would say. It was all Ruskinianism; and for twelve or thirteen years it had been proved that Ruskin was all rot. What they did all know was that art was the work of artists, that they were artists, and that, therefore, they produced art. But there was one consideration he would like to offer. And it was that architects, too, were a part of life, and that they had to reflect the life that was around them. Only three nights ago he had a dream, in which he discussed such matters with a fellow-architect, who gave it as a final axiom that "You could not go beneath the ground plan." By this he meant that an architect could not go outside the stream of the time or outside the environment by which he was conditioned. Architects were perpetually changing. In their education they had introduced forcible feeding. The profession was a very composite body. If Mr. March Phillipps would alter the life outside, he would find how quickly architects would respond to the change. Lessons should be drawn from history. They were told they idealised the past; but they did not do so. They did know, however, that an age which produced beauty must have had a beautiful life. No one could gainsay that. So, too, it was the deadness of modern town life, the absolute stagnation and daily dying of these towns up and down the country, which produced the deadness of contemporary architecture. England soon might be made up of Oldhams. Until people brightened their lives, and until they got towns to rebuild themselves and put themselves in order, nothing would happen. In the rebuilding there might be found again some satisfying architectural principle. A town he knew well as beautiful forty years ago, no vulgarity had touched it, was now wrapped around with railways, and all the old-time respectable shops had been converted into emporiums. It was to such a transformation as that he would like to turn Mr. March Phillipps' attention. At present architecture mattered nothing. Architects had merely to satisfy the whims of private employers, dine at their tables, and swallow their insults. Until there was an end to that "hanging on" nothing was possible. One of the most important parts of a modern architect's life was the art of dining out.

Mr. E. B. Havell thought that Mr. Phillipps' main argument was quite incontrovertible. An architectural system based upon borrowing was prejudicial to healthy artistic growth, just as a persistent habit of borrowing from one's neighbour was contrary to sound finance and prejudicial to later chances. Subjectively the point at issue was whether the buildings of our time express the spirit of the age, or please the public, or whether the methods by which they are produced encourage the faculties innate in everyone. It was beside the mark to argue that the methods were Roman. If so, it was a national architecture; if not, they were hiding their talents in a napkin. Of course there was the familiar argument that the Classic tradition was engrained in the British constitution and become part of the intellectual birthright. But was the Classic tradition either national or classical, or was it simply a pedagogic formula stunting the imagination of the Briton? He wondered if the Greeks attained their high culture through the methods now known as Classic. Whether they learnt to draw from plaster casts or from the original sculpture of Pheidias, whether they locked things up in museums, or left the artistic intelligence of the children to be dried up in schools. He did not think so. Their education did not consist of educational gymnastics. Mr. Phillipps had done a great service in raising this question. It was to be wished that he would attack the public schools. For it was the sham classical education, especially the training of the intuitive faculties of children, which was responsible for the general decay. The technical methods in architecture which now created a barrier between the architect and the craftsman could be easily removed. They could take art out of its flower-pot and plant it again in its native soil.

Mr. H. V. Lanchester thought the question was whether they were altogether wrong in following the traditions of Ruskin, and whether they should not go back and try to pick up some other tradition. But there was something more than Ruskinianism in the paper just read. If they were to go back to the Tudor tradition, he would ask whether that tradition satisfied the feeling of to-day better than what was being done at the present moment. He for one was not content with what was being done now, and he hoped they would go much higher. But he did not think the tradition Mr. March Phillipps offered was any solution. Nor did he believe that Tudor, with all its genius, represented modern spirit as well as the best work of the past two centuries. He would therefore ask the lecturer to reconsider his position on the merits of Tudor architecture as adapted to express the needs of to-day.

Mr. E. P. Warren thought that Mr. March Phillipps' argument was incontrovertible. The whole paper was in its trend extremely wholesome and as bracing as eight hours at the seaside. It was a great thing for the profession to receive these thrusts. But he considered that Mr. Phillipps had gone very much too far on one point. In Tudor days such hold as the Renaissance took was extremely minute: a few features and the introduction of misunderstood bits did not convert Gothic architecture into anything like Renaissance. The increasing horizontality evident was, in his opinion, the mere logical outcome of Gothic; arches were to be seen nearly as squat as the Tudor arch in the fourteenth century. Therefore Tudor architecture ought not to be looked upon except in spots as the beginning of northern Renaissance. Mr. Phillipps had pointed out that porches and chimney-pieces were the two features first to show Renaissance forms. It should be remembered in explanation that those two were what the English builders for two previous centuries had been wont to lavish attention upon; therefore they called in men for their decoration from the large towns—i.e., men who had the most modern ideas. In Oxford, which was probably the most conservative architectural town in the country, some extraordinary Gothic anachronisms were to be seen. Even where one disagreed with the paper one could feel stimulated. Due allowance should be made by critics for the jumble of ideas and habits with which architects are called upon to deal. It was necessary to reassert some sort of tradition for the guidance of students and workmen. To do this what was wanted was not so much a point of concentration as a point of departure. Until that was found it was not very hopeful for architecture working out well.

Mr. H. G. Ibberson suggested that the evil genius of the art of architecture had always been the literary man. The Romans were getting along perfectly satisfactorily until the literary men declared the only beauty possible was to be found in Greece. The man-in-the-street always follows the literary man, and so the unfortunate architect has to do likewise. At the Renaissance the same thing occurred. Later on, when this country got under the influence of Sir Christopher Wren, and was progressing quite hopefully, there arose the Oxford movement, Sir Walter Scott, and the Gothic Revival. A new standard was at once set up.

If only architects would in their work simply enjoy themselves things would go all right; instead of that they try to do the things they are told to do. Why Classic architecture was generally so dull was that it is taken up merely because it is the fashion, not because the architect likes it. Literary men have said that the Classic style is the mode. And the mode it thereupon becomes.

Mr. G. H. Widdows doubted whether it was correct to assert that the architecture of to-day did not reflect the spirit of to-day. The Romans and the men of the Renaissance were both out for making money for money's sake. The Romans could not understand the conscious effort which the Greeks put before them; nor could the men of the Renaissance understand the high ideals in Gothic work, and so they turned to Rome. At the present day, too, people were worshipping wealth for wealth's sake. Did not that alone stifle genius? Until contemporary life had been altered, was it any good hoping for a better style? When that is accomplished they would get a better architecture.

Mr. A. E. Richardson declared they would continue to borrow until the end of the chapter. The reader of the paper held a brief for the provincial, and he had failed to understand the academic position. Mr. Phillipps did not understand composition. In spite of what they had heard, one might venture to predict that the Classic tradition of the future would even be greater than that of the past. Mr. Phillipps' words were like waves lapping against rock.

Mr. Bailey complained that whereas modern architecture had been described to its detriment as being all borrowing, no single example of what they ought to do had been shown them. In his opinion it was absolutely impossible to create a style at the present day.

Mr. Reginald Blomfield said they had had undoubtedly a very stimulating evening. He felt that Mr. March Phillipps came there in something of the character of a matador placing his barbs or of an Irishman trailing his coat. Their lecturer wielded a delightful pen, and anything he said or wrote could be read with pleasure and profit. But he, for one, was left totally unrepentant. He could not agree with Mr. Phillipps either in his history or in his philosophy of art. Mr. Phillipps based his criticism of modern art on certain axioms, which were based in their turn on a misapprehension of the history and meaning of architecture. One was that no architecture was sound unless it was construction made visible. It was difficult to reconcile oneself to that statement. It was a sentiment resulting from the extraordinary period of muddle of the Victorian era. Architecture was not made up of individual features, but was the grouping and composition of those details. That was what one meant in talking of the nebulous quality which constituted fine architecture. The ceiling of the Trinity School at Oxford which had been held up to their admiration was not a sincere rendering of construction; it was a mason's trick. It had been laid down that one ought never to combine the arch and the lintel. But it was that combination of the arch and the lintel which constituted one of the most effective weapons of the modern architect. The assertion that Gothic alone was spiritual might also be challenged. Why should it be said that any one form was more spiritual than another? The early Christian worshipped in the catacombs. Then, again, the upward rushing lines of Gothic might equally be regarded as downward rushing ribs, and, therefore, as suggestive of Hell as of Heaven. If architecture should be the expression of the life of the time he would like to know how they were to crowd present-day life into the Tudor style. The latter may have been comfortable in its period; but to-day they lived in a different stage of architecture, and had to accommodate themselves to the facts of their environment. They must not project themselves back nor forwards. It was not to be supposed that anybody could wipe out St. Paul's, perhaps one of the greatest one-man achievements in the world. Again, if ever there was a house which was characteristic of a country, of a people, and of a nation, it was the quiet English Georgian house. If architects had been allowed to pursue that phase, their art would not now be in the condition it is. Their greatest enemy in the eighteenth century was the literary man. But it seemed as if architecture had now come to its own again. He would like to think the spirit of architecture was with them.

The vote of thanks was carried by acclamation.

Mr. March Phillipps said he was sorry he must go home feeling he had failed to convert Mr. Blomfield, for on that he had particularly set his heart. It seemed to have been taken for granted that he only admired Tudor work, and that he was proposing architects should imitate it. Nothing was further from his mind. He did not want to wake up any old style. But what he admired in the Tudor style was that the men of the time faced their work honestly with their local material regardless of fashion. They worked out the needs of their age in the materials of their age. Ferro-concrete should be a splendid material if it were used with sincerity. The reason why it was not faced in the honest spirit of Tudor times was that architects were led away by influences which strangled creative effort. With regard to Mr. Blomfield's point as to the "downward" rushing lines of Gothic, he would point out that when the eye looked at a vertical line it ran up and not down; therefore, all vertical lines were upward rushing. The effect of a Gothic building was that it lifted everything into the air. Mr. Lethaby, in his delightful remarks, said it was no good fiddling about with architecture unless the life behind it was changed. It was certainly true that nothing new can come to architecture until the right forces have been generated. But those forces were now being generated in contemporary life, and were breaking up the Renaissance tradition. The Renaissance was adapted to the expression of a very fastidious aristocratic taste. The whole style reeked of it. Life was abandoning that tradition. Something quite different was coming into it: a broad and general sense of ordinary humble existence of the world of labour. That was the transition they were standing in at the present moment. Things were gradually veering from the aristocratic to the democratic. When the new conditions of labour are secure, labour will be ennobled and the instability of society which threatens to tear down the whole social structure will altogether cease. That was what was so interesting at the present time. Into the new life of England there was going to be a strong democratic trend, which was going to inspire a much more democratic architecture.

ASPHALTES: THEIR ORIGIN, COMPOSITION AND MINUTE FEATURES.—I.

By James Scott.

It is a pity that there is so much confusion in connection with the subject of asphalte; but the fact remains that the name is applied indiscriminately to many different substances, while various others are mixed up with it. Bituminous materials are brought into the arena, without any definite description. We hear of asphalte, mineral pitch, tar sand, gas-tar asphalte, compact bitumen, and other things, and I have no doubt that many people, even among those whose professions and trades are concerned with the use of asphalte, would like to know something about it and kindred products.

Speaking broadly, asphalte is found in two varieties. The first is rock asphalte, and the second is soft asphalte.

Rock asphalte, the hard black or brown solid substance, consists of either limestone or sandstone (or a compound of both minerals) thoroughly impregnated with bituminous exudations. On the other hand, soft asphalte, a kind of brown powder, is composed essentially of resinous earths.

The architect, builder, surveyor, and those others whose occupations deal with the planning and the erection of towns, houses, &c., are associated chiefly with rock asphalte, so that this shall claim most of my attention. It will be impossible, however, to avoid referring to soft asphalte, which is employed principally in the manufacture of varnishes, japan, and similar viscid goods.

At this point it will be convenient to deal with bitumen, bearing in mind that rock asphalte is a limestone, or a sandstone, or a combination of the two, impregnated with bitumen. One would think that bitumen was a single substance from the way in which the word is customarily used by people; but there are several bitumens, including naphtha, petroleum, pitch, ozokerite, mineral resins, and the oils from marl and shale. Asphalte itself is often spoken of as a bitumen, and this fact shows how far confusion has gone.

Bitumens may be regarded as those inflammable, mineral products of organic origin which are characterised by a high percentage of carbon and hydrogen, and possessing peculiar odours. Their specific gravity is low; hence they generally float on water. When ignited, they all burn with a liberal yield of thick, heavy, sooty smoke.

By the recently used term, "minerals of organic origin" is meant the fossilised remains of vegetation and animals. The latter may be ruled out of the present discourse, although some authorities believe that crowds of extinct animals have helped, by their oily constituents, to form some of the petroleum in certain quarters of the earth. Vegetation has, however, been proved by direct microscopical examination, to have been the chief source of the substance now being dealt with.

Coal is, perhaps, the best and commonest example of a mineral of organic origin. It once existed as peculiarly formed trees, giant ferns, and other kinds of vegetation, but owing to immersion in mud, &c., and the chemical reactions accruing from imprisoned decomposition it has become mineralised. Sections of coal frequently show beautiful crystalline configurations, entirely filling up the cellular meshes.

Rock asphalte, in regard to composition and properties, comes between petroleum and coal. It melts at 100° C., and, as is so well known to those who handle or concern themselves with it, burns with a very smoky flame.

Large quantities of asphalte are found on the shores of the Dead Sea, which has, in consequence of this abundance, often been called Lake Asphaltites.

In Trinidad (West Indies) is the famous asphalte, or bitumen, lake, the circumference of which is one and a half miles. It is named the La Brea Lake. In Switzerland an asphalte cement is obtained from the Val de Travers, a beautiful valley between the ranges of the Jura. California also produces asphalte.

Deposits of asphalte, of course, occur elsewhere, but they are of minor importance when compared with the sources mentioned, although they are drawn upon to the profit of commercial undertakings.

The most widely accepted theory bearing upon its production in the bitumen lake and in similar situations is the following reasonable one. It has been presumed that the river Orinoco has for innumerable ages been carrying down rotting vegetation—wood, trunks, roots, stems, leaves, fruits, &c.—and depositing them into the sea, where the continuous eddies and currents have caused them to accumulate in immense quantities instead of getting generally distributed. Subterranean fire, of volcanic origin, has then operated on the huge pile, and induced certain chemical changes. Later on, the modified substances have been forced to the surface of the water, along with limestone or sandstone (or their equivalent) from the bed of the ocean, river, or lake, as the case may be, and thereafter been exposed to the influence of the air. It then became inspissated—*i.e.* gradually thickened or concentrated—and henceforth constituted different varieties of asphalte, or asphaltum as it used to be called.

Putting the matter in another way, asphalte may be regarded as the decomposition products of vegetable debris, which have been thrown up from the beds as liquids that have penetrated rocky substances dislodged by volcanic action. There was, say, first the volcano beneath the bed of the lake, and then the strata of limestone, calcareous ooze, &c., above the choked crater. On top of the bed lay the rotting vegetation, yielding oils which soaked into the "mineral" matter, and these constituted a bituminous substance. It does not follow that an actual volcano was present. The same results would be possible from the presence of an enclosed source of subterranean heat. The point to be noted is that heat, in the absence of oxygen, was needed to operate on the decomposing substances.

At some period the old volcano resumed activity (or the hot tunnels burst open), and the disintegrated products were caused to float on the surface of the lake, where exposure to the air perfected it.

In this way vegetable matter has become changed into petroleum, and the latter into asphalte.

So far, I have been dealing with the obvious erupted asphalte, that which travellers could not help seeing, as it floated on, or in, water, or else crusted the adjacent shores. Similar, but harder, asphalte is found in seams like ordinary coal, and has to be dug up in the same manner. I shall have something to say on this phase of the subject in the next chapter.

The term gas-tar asphalte is really a misnomer, and has had much to do with the development of the confusion which exists in connection with the substance. Although, as is explained elsewhere, the composition of natural asphalte is due to the distillation processes which have gone on for ages in the earth, pitch, the final product of coal-tar distillation, has no true analogy with real asphalte, and it is really pitch which is known as gas-tar asphalte.

There is no doubt that competition has been responsible for the adoption of the name asphalte to denote coal-tar pitch. When gas men found that this substance was likely to be a drug in the market they hit on the idea of calling it asphalte, although it contained neither limestone nor sandstone, upon which the value of rock asphalte largely depends. I have, of course, nothing to do with the actual merits of pitch as compared with genuine asphalte, and am only desirous of pointing out the facts.

Asphalte was known to the ancients—before gasworks were dreamt of—and was found very useful by the embalmers of Egypt, who used it, properly prepared for the purpose, to help preserve the bodies of their honoured and respected dead. What a contrast this use was to that to which asphalte is at present applied.

The illustrations will be described in Chapter 2.

(To be concluded.)

BIRMINGHAM ARCHITECTURAL ASSOCIATION.

The President (Mr. G. Salway Nicol) was in the chair at the concluding meeting of the winter session of the Birmingham Architectural Association, held in Exchange Buildings on Friday evening.

Mr. John B. Surman (Hon. Secretary) announced that for 1914-15 Mr. G. Salway Nicol had been re-elected President; Mr. Alfred Hale Vice-President; Mr. Christopher Silk Hon. Treasurer; Mr. C. S. Madeley and Mr. H. W. Simister Hon. Librarians; and Mr. A. R. Lynex Hon. Solicitor. Mr. John B. Surman (re-elected) and Mr. H. Graham Wicks had been appointed Hon. Secretaries, and Mr. Herbert A. Pepper (re-elected) and Mr. Holland W. Hobbiss Hon. Auditors.

The Council had been constituted of the following: Members—Messrs. W. H. Bidlake, C. E. Bateman, A. Harrison, H. T. Buckland, J. A. Swan, and W. A. Harvey; Associates—Messrs. E. Garratt, H. W. Simister, C. J. Margetson, E. G. Harrison, and I. Ewen Harper.

The President announced that the only drawing submitted for the Association prize was that of Mr. Bernard Saunders, but it was so meritorious that they had awarded him the prize. The Council much regretted there was only one competitor, seeing that in past years there had been five or six, and even more. It had been decided that the headquarters of the excursion this year should be at Chartres. Proceeding, Mr. Nicol remarked that, as many of them were aware, the Council of the Association had been dealing with the question of the revision of the by-laws in connection with the submission of extra drawings of roofs and floors. He could not discuss the matter in detail before the general body, but he would like to assure them that although there was a good deal of difficulty in getting a satisfactory by-law drafted on the point the Council were dealing very strenuously with the matter, and doing all they could to obviate what was evidently in the present position a most serious state of affairs so far as architects were concerned.

Mr. E. Guy Dawber, Hon. Sec. R.I.B.A., subsequently gave an address on

FOUNTAINS AND THEIR SETTINGS.

He dealt at length with the fine examples to be seen in Turkey, Italy, Spain, Portugal, and France, and pointed out their various characteristics in a most entertaining way. Paris, he remarked, was rich in beautiful fountains, mostly erected during the last two centuries, and there they had the great charm of an almost unlimited supply of water. The gardens of Versailles contained a splendid collection of fountains of a certain type, all works by the finest French sculptors, and exhibiting in a wonderful way the decorative qualities of water and its successful combination with architecture and sculpture. The French aptitude for the treatment of water in fountains and cascades was doubtless traditional, and based upon the wonderful creations of Versailles, St. Cloud, Marly, and all the superb château gardens of the early eighteenth century. Fountains and water were the soul of gardens; they made the chief ornament and enlivened and revived them. It was somewhat depressing to think of the extraordinary lack in London and England generally of fountains worthy of the name. The older examples had all disappeared, and but few good modern ones had taken their place. When they had named Mr. Gilbert's fountain in Piccadilly Circus, Mr. Colton's in Hyde Park, and one or two others, they had exhausted the list. The Gothic erection in Parliament Square, the Temple and Hamilton Place, and some dozen others scattered about the streets and squares could under no circumstances lay claim to any artistic merit, and merely represented the work of the marble and granite mason. The fountains in

Trafalgar Square, at Hampton Court, and other places were mere jets of water falling into a basin, and the drinking and horse troughs, which might have been such charming objects dotted about the streets, hardly came within the category of beautiful things. The donors of these fountains, instead of going to an artist to make them designs, invariably placed the work in the hands of tradesmen, with the only natural result that our streets contained the most vulgar and commonplace examples of the monumental mason's art, works of no value whatever from the artistic point of view. Fountain designs, with any pretence to originality, seemed to be entirely thrown away upon the English public. To the average Englishman a fountain meant a jet of water spirting up from a basin and falling into it again. Anything new and original was regarded as being wrong and out of place. Of course, there were exceptions, and in many modern English gardens there were admirable examples of fountain designs; but these, unfortunately, were only for the favoured few, and the general public had to put up with the monstrosities in our streets. When a public memorial was proposed to be erected in England the question usually arose whether it should consist of a statue or a drinking fountain. A fountain was the favourite provincial tribute, because it gave work to a local tradesman, and he usually took a pride in making it look as little like a fountain and as much like an abstract architectural excrescence as he could. In London and in the larger towns statues were more favoured, as being more artistic; and all that was demanded of them was that they should bear some resemblance to a human being, either engaged in profound thought about nothing or else making an eloquent speech to nobody. Usually when the fountain was built nobody drank from it, and when the statue was erected nobody looked at it. If it was impossible to make any great outlay upon sculpture and the fountain itself, much might be achieved by careful attention to the contour of the basin and the arrangement of its details, and many of the best fountains of older times, which had no sculpture at all, relied entirely for their refined and elegant effect upon the successful treatment of these matters. In every design for a fountain the effect of the waters rising and falling should be carefully considered and allowed for, and it should be suited to the position which it might occupy. The neglect of such forethought led to unfortunate results. A fountain, for instance, which stood in the centre of an open space, and around which the public circulated closely, should not have jets throwing the water high as part of its design, for the certain result of such an arrangement would be that with the least wind one side would become impassable by reason of the spray. Such arrangements should be kept for fountains with a pool or considerable space around them. Design of fountains should be considered with water as part of the scheme, hence the reason why many looked wrong without the added lines of the falling water. The subject of fountains and the treatment of water was a very fascinating one, and he hoped his remarks would awaken an interest in this by-path of architecture.

A hearty vote of thanks was accorded Mr. Dawber on the proposition of Mr. Chas. E. Bateman, seconded by Mr. Holland W. Hobbiss, and supported by Mr. Doubleday, Mr. Reeve, and the President, the latter gentleman remarking that the subject was one that appealed to all architects, and he would like to see a greater use of water in small architectural problems, both in and out of cities.

THE NOTTINGHAM AND DERBY ARCHITECTURAL SOCIETY.

With the object of creating greater public interest and some enthusiasm for town planning in the area of this Society, the sessional meeting held on March 10 was converted into a gathering of a semi-public nature, at which Professor S. D. Adshead, F.R.I.B.A., of Liverpool University, gave a lecture illustrated by numerous lantern slides.

The use of the Exchange Hall was granted for the purpose by the Mayor, and the meeting was well attended by the members of the Society, members of the Town Planning and Housing Committee of the City Council, and of the various local societies interested in the subject, together with a large body of public officials of Nottingham, Derby, Mansfield, Ilkeston, and the local Urban and Rural District Councils.

Alderman Sir John Turney, Kt., took the chair, and in briefly introducing the lecturer regretted the Town Planning Act had not been adaptable in the days of his early acquaintance with civic work some forty years ago. If such had been the case the difficulties of dealing with the slums and the extension of boundaries would be far less than they are to-day. He was not at all so pessimistic as to the adoption of the Act in Nottingham as some of his fellow-members on the Council, and though such adoption would entail slight initial expense, the benefits to the community in years to come would amply justify such expenditure.

Town Planning.

Professor Adshead, in his opening remarks referred to the general workings of the Act and the manner in which its provisions had been adopted in schemes already in force. He described the Town Planning Act as an attempt to humanise and render less rigid the provisions of the Public Health Act, 1875, affecting the laying-out of streets and buildings, and to obtain for the resident in towns some of the natural beauties of the country-side adjoining without any loss of the important sanitary and other health provisions of the older Act. The effect of the 1875 Act was illustrated by several plans showing the gridiron and chequer-board lay-out of streets and buildings so well known to everyone.

The lecturer then pointed out the necessity of providing main arterial roads to the outskirts of the larger towns, for the possible use of fast tram or light railway traffic necessitated by the growing tendency of business men to live in rural surroundings.

The general advantages of the Act to the public were of course fairly obvious, since the provision of open spaces obtainable in early development at little cost, the convenient access to all parts, the preservation of naturally beautiful features, &c., could be obtained, and with this the interest of the owner in obtaining the best development of his property. He was glad to say that owners were realising the advantages of the Act and were in many instances asking for their property to be included in the scheme proposed.

Professor Adshead dealt at some length with important clauses of the Act, and described the procedure, the various maps required by the Local Government Board, the necessary conferences of owners and authorities, and the position of architectural and other societies interested. He explained this by various maps relating to some of the schemes approved. Of special interest were those of the vast schemes afoot for Birmingham, in which the different zones were clearly indicated. The difference in the tentative and final lay-outs of the Ruislip-Northwood scheme were also illustrated.

The third part of the lecture consisted of a general comparison of the two schemes referred to, specially with regard to their general provisions affecting the number of houses per acre, the position of shops, and the particularly wide difference between a scheme with the ownership vested on the one hand in one body and the whole area practically undeveloped, and on the other hand with numerous and probably conflicting interests in an area surrounding a large modern city.

Professor Adshead then briefly discussed the economies of estate development, particularly as regards garden city development, and endeavoured to explain by means of a chart thrown on the screen that when land could be obtained at the reasonable figure of £300 per acre and cottages erected ten to the acre the cost was practically the same as crowding fifty houses to the acre laid out in the usual way under pre-town planning regulations, the difference in cost being effected by the cheaper road construction and special provisions of by-laws obtainable under the Town Planning Act.

Views of the Hampstead Garden Suburb were given, showing that only the carriage way of the wide roads and a one-foot path were of necessity constructed, the remainder being left in its virgin state. During the lecture there was exhibited some very interesting slides of Continental town planning, and especially of the Krupp workmen's villages—the latter indicating a combination of German and English methods of rural development, very pleasing in effect.

In conclusion, the Professor spoke of the connection of architects with town planning, and stated that in his opinion the engineer and surveyor should control the initial development, the architect joining in at a later stage to obtain the best architectural finish to the general schemes.

Some questions were asked concerning the economics of development and the cost of the partial making of roads, and an opinion was expressed that the architect should collaborate with the engineer in the initial stages in order to assist the preservation of natural beauty and prevent by merely slight alterations in the general line of roads, &c., the destruction of possible vistas. The architect should also have some say in the drawing up of the many special provisions affecting the various areas.

After Professor Adshead had replied to the discussion, a hearty vote of thanks was accorded him on the proposition of Mr. E. R. Sutton (President of the Society), and seconded by Mr. Councillor Gregg, Sheriff of Nottingham.

The winter programme concluded with an informal social and smoker held at the Society's rooms, 64 St. James Street, on Tuesday, March 17.

The principal designs submitted by the students during the session were exhibited.

During the evening the President, Mr. E. R. Sutton, F.R.I.B.A., commented on the improvement of the designs submitted during the past twelve months, and said that although neat and clever drawing was essential, architecture did not consist solely and wholly of draughtsmanship, and while they endeavoured to improve their draughtsmanship he hoped they would also study and master construction. It appeared a custom for the retiring President to offer a student's prize, and he would be very pleased to do the same. If they approved, he would give a prize of two guineas for the best design for a Georgian house to cost about £1,500. If more than six designs were submitted he would give a second prize of one guinea.

Mr. Woollatt, Hon. Secretary of the Designing Club, on behalf of the students, accepted the President's offer, and thanked him for his kindly interest. The Vice-President, Mr. H. Gill, seconded the vote of thanks.

The President then distributed the prizes as follows: Mr. N. H. Pratt two prizes, and Mr. D. E. Knight one prize.

After refreshments, the remainder of the evening was passed at the *shrine* of My Lady Nicotine.

DEVON AND EXETER ARCHITECTURAL SOCIETY.

THE annual meeting of this Society, which embraces the counties of Devon and Cornwall, and is in alliance with the Royal Institute of British Architects, was held on Saturday, the 14th inst., at the Rougemont Hotel, Exeter.

The chair was taken by the President, Mr. E. Coath Adams, M.S.A. (Plymouth), and those present were Messrs. J. A. Lucas (Vice-President), John M. Pinn, J. Jerman, T. A. Andrews, L. F. Tonar, S. Dobell, C. Cole, A. Stevens (Exeter), A. S. Parker, R. H. Arthur, J. R. Ward (Plymouth), and Allan J. Pinn, Hon. Secretary (Exeter).

Apologies for absence were received from Messrs. W. H. May, Harold Watts, J. Crocker, C. B. Bone, B. P. Shires, E. F. Hooper, and C. H. L. Varcoe.

The annual report was presented by the Hon. Secretary. It states that the membership has been well maintained, and after removing the names of two by resignation the roll now stands at 77, consisting of 46 members, 15 Associate Members, and 16 Associates.

During the past year five Council and four general meetings have been held, and several matters of importance have been under consideration. The scale of charges for quantities which was presented at the last annual meeting was unanimously adopted. On June 21 a very pleasant excursion was made to Lyme Regis.

The Council again regret there has been no response from the younger members in connection with the London Architectural Association, whereby students can join the School of Design; therefore, the guinea book prize offered by the Society to the competitor whose design is placed first has not been awarded. For the prize of two guineas in books offered by the Society for measured drawings for 1913, one drawing was submitted, and was awarded to Mr. W. W. Hitchins, of Reading.

The Council remind members that books may be borrowed from the library upon application to the Hon. Secretary, and it is hoped that students and others preparing for examination will avail themselves of this privilege. Attention is called to the opportunity afforded candidates to sit at Exeter for the Preliminary and Intermediate Examinations of the Royal Institute of British Architects.

The President's badge, mentioned in the last annual report, has been supplied, and worn by the President at all the meetings of the Society during his past year of office.

The attention of members is again drawn to the following communication from the R.I.B.A.: "That it is undesirable for architects to exhibit their names on boards or hoardings in front of buildings in course of construction."

Attention is also drawn to a communication received from the Architectural Association of London, whereby it is proposed to form a class of country members, limited to members of recognised Architectural Societies. The regulations and advantages are: Annual subscription of 7*s.* 6*d.*, the Architectural Association's "Journal" sent to members, employment register, use of library and of the Association's premises, meetings, &c., and to compete for the Association's prizes and studentships.

The above report, together with the balance-sheet, was received and adopted.

The Chairman having expressed the regrets of all those present at the absence of the Vice-President-elect, Mr. C. Cheverton, M.S.A., of Devonport, on account of illness, a telegram was sent to him expressing regret at the cause, and wishing him a speedy recovery.

Mr. E. Coath Adams, M.S.A., then delivered the following address:—

PRESIDENTIAL ADDRESS.

Gentlemen.—Again it is my privilege to address a few remarks to you at this our annual general meeting. And let me at once thank you all most sincerely for the great honour and compliment paid me at this time last year (when, unfortunately, I was prevented through illness from being with you) in electing me for the second year in succession as your President.

I regret my absence then, more particularly on account of it being a red-letter day in the annals of our Society; that is, when the newly elected President was to have been for the first time decorated with the Society's badge of office. However, you all saw the decoration, if not the decorated.

The badge was sent to me, together with a telegram from those assembled, expressing their good wishes for my speedy recovery, an act of kindness and thoughtfulness which was greatly appreciated. I beg to thank you, gentlemen, very heartily. I also thank those who have so loyally supported me during my term of office; especially may I mention Mr. Allan Pinn and Mr. James Jerman on the Council at Exeter; also Mr. C. Cheverton and all the committee of the Three Towns branch, who have so kindly attended our meetings in unusually large numbers.

During the year several matters have been brought before the Council. Some of the subjects were not what we would have selected from choice, whilst others were more pleasant. Each has been dealt with, and fair, but plain-spoken criticisms have characterised all debates, a point which, together with decorum and gentlemanliness, should, in my opinion be favoured and have encouragement.

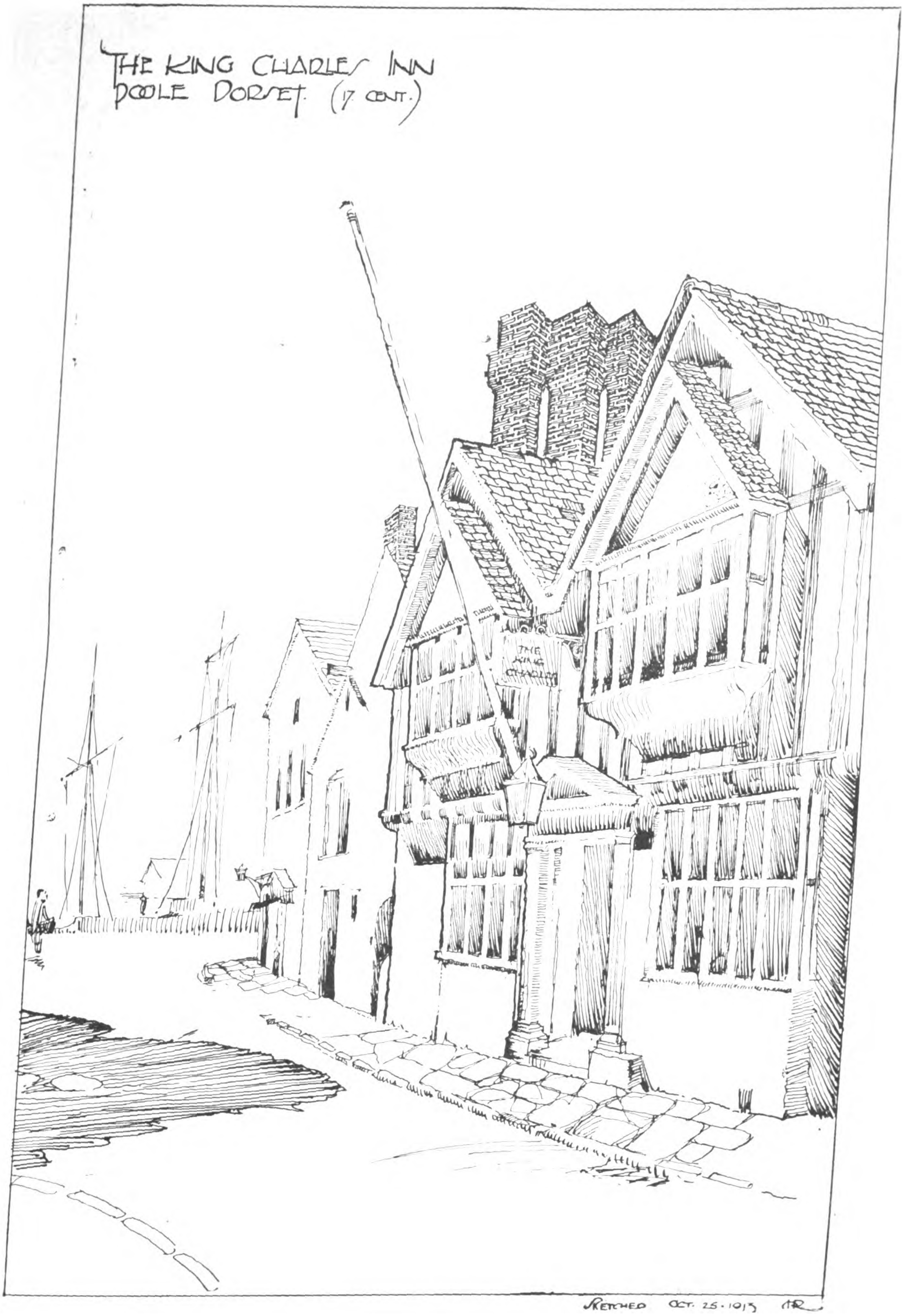
As you have heard in the report, the Society prize for measured drawings has been awarded to Mr. W. W. Hitchins, this being the fourth time he has won it. The first was as long ago as 1901; and, whilst not wishing to damp his or any student's ardour, I do not think it advisable the Society should allow the prize to be competed for by the same person more than twice.

Whilst on this subject I would point out to the juniors the apathy shown year after year. Seldom is there more than one who submits a drawing. To win a first with no other competitors is not a great achievement, and there certainly is not the same kudos as when it has been keenly fought for and won. The prize is offered for the sole purpose of encouraging the student to work, and he should have sufficient pride and interest in the profession he has chosen, and by which he hopes to make an honest living, to qualify himself for the same. It is not enough to adhere simply to his office hours; he must not expect to crowd all the hard work and study necessary into, say, six or seven hours a day. When he is out of his articles, and later in life he seeks an appointment, he will find more than one in for the prize then. There will be competition. Then is the time it will come home to him, and as he gets older he will realise how little he knows, for it is usually the most ignorant man who is self-satisfied, and the man who has studied hard all his life is just beginning to find out how very much more there is to learn.

Again, every great-thinking man should have a desire to become a leader or an authority on his subject. My advice to the student is: Work whilst you have the opportunity. There is no time like the present, and plenty of time to take it easy should you be in a position to do so and have the desire.

As President of your Society, I was appointed on the Official Architecture Committee of the Royal Institute of British Architects, and when able to attend in London I met a few old friends and made new acquaintances, and was

"THE ARCHITECT" STUDENTS' SKETCHING AND MEASURING CLUB.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PRIZE DRAWING by Mr. Chas. H. Roberts.

most interested with the views expressed on the subjects under discussion; but since this committee are still considering their report I am unable to enlarge on it here.

In my address last year I referred to the suggested registration of architects, and, indeed, you would consider me an extraordinary man if I did not do so again. It is to my mind the most important subject concerning the architect to-day; nearly each week brings some fresh argument in favour of it or some cause why registration is necessary.

We are aware attempts have been made to draft a Bill to be submitted to Parliament, but obstacles have been met with and opposition from one quarter or another more or less difficult to understand. As with most new ideas or innovations, it takes time to overcome prejudices and convince people; still, it is, I believe, bound to come sooner or later, and so it should, not only in the interest of the architect, but also the public, and, may I add, architecture. If a broad view is taken, what matters it how it is attained, or by whom? We are told the Royal Institute have been advised there are Parliamentary and Constitutional difficulties, and it would be impossible for them to promote successfully a Bill at present.

The Society of Architects have drafted a Bill and do not seem to have the same difficulties. Then why not support the Bill which has more chance of success—a Bill which, as far as I can see, will protect all vested interests and provide for the welfare of the community, the art, and the profession in the future?

On so vital a question it seems incomprehensible that as a profession we cannot pull together. My personal feeling is of regret that the Royal Institute is unable to see its way clear, and under the circumstances I hail with joy and thankfulness, irrespective of the promoters, a Bill which is for the general good and fair to all.

I believe it to be admitted by the Royal Institute that the majority is in favour of registration; indeed, it might be said that the profession almost unanimously demands it.

The Royal Institute is about to apply for a new charter, but this can only concern its own members, and cannot deal with the profession as a whole. This will not meet our demands. Therefore, whilst giving its own members certain benefits no doubt, it is only a half-way measure.

It is greatly to be regretted, but I fear it is a fact, that there is a certain amount of feeling between those inside the Royal Institute against those outside.

Harmony and agreement amongst architects as the real essentials are, I am convinced, the consummation devoutly to be wished.

I referred just now to the frequency of arguments occurring in favour of registration. One benefit it would undoubtedly eventually bring is the better understanding of the etiquette of our profession. This, of course, is a very delicate subject, and I do not wish to be misunderstood. At the same time, only those whom the cap may fit will, I feel sure, be likely to take exception to my remarks, and without going further than impressing on the younger man to study and adhere to a strict code of ethics, more especially as to the improper solicitation of professional work and the competing for employment on the basis of professional charges, I will leave these few remarks in the hope that all who follow me will do their utmost in promoting the dignity, integrity, and purity of our profession.

A cordial vote of thanks was expressed to the President for his excellent address.

Officers were elected for the ensuing year, as reported in our issue of last week.

Mr. Jerman proposed a hearty vote of thanks to the President, Hon. Treasurer, Hon. Auditor, and Hon. Secretary for their services during the past year, and bore testimony to the efficient manner in which they had carried on the business of the Society. This was carried by acclamation and suitably replied to.

Subsequently the members lunched together, after which they proceeded to inspect Bampfylde House and St. Nicholas Priory.

LEEDS AND YORKSHIRE ARCHITECTURAL SOCIETY.

AN interesting meeting of the above Society was held on Thursday evening, March 19, at the Leeds Institute, Cookridge Street. Mr. A. E. Kirk, A.R.I.B.A. (the President) occupied the chair, and Mr. William Milburn, A.R.I.B.A., of Newcastle, gave a lecture on "Modern Hospitals," with illustrations by lantern slides.

Mr. Milburn opened his remarks by a few comparisons of modern English hospitals, followed by examples of many Continental types of hospitals, more particularly those of Germany. Attention was drawn to the extensive grounds and their laying out, also to the more open distribution of the various departments.

The combination of infectious diseases and surgical and medical departments under one institution was noticeable, also the absence of out-patients' departments in Germany.

A few American examples of hospitals were a great contrast to the latter, being seven and eight storeys in height. Details of the different departments were dealt with, and proved most interesting.

Dr. Eddison proposed a vote of thanks to the lecturer in a pleasant speech, and Mr. S. D. Kitson seconded same.

THE CHURCHES OF WREN.*

By J. M. W. HALLEY, Licentiate R.I.B.A.

IT is not difficult to realise the extent of the change that took place in architecture during the seventeenth century when you see, on the one hand, buildings such as the halls of the Inner Temple and Gray's Inn, Staple Inn, Sir Paul Pindar's house; and, on the other, the works of Wren. Yet the change was so complete when Wren began to build that for more than a hundred years it was impossible for builder or architect to conceive a design that was not informed to its very essence with what has been called, for want of a better name, Palladianism.

England had been preparing to adopt this new system of architecture since the time of Henry VIII. But it was a plant of such slow growth that it did not reach its culmination until the reign of Queen Anne, when Wren built his wonderful dome and placed it beside the clouds.

The new style overcame the old by slow degrees, creeping first into the delicate ornaments of architecture, gradually changing the flat Tudor arch into a lintel or a true Roman arch, until, like the irresistible incoming tide, it had covered everything.

Nothing could stop this progress, just as nothing could prevent men and women from looking out of the window, just opened to them, to see their kind walking in the sunshine unashamed, in the joy of life.

The Mediæval world, geographically and spiritually, had suddenly expanded, its old rigid bournes had become mere marches between continents which stretched on every hand to infinity. Men, looking with their new-opened eyes, saw men of the very stature of themselves, with their very attributes, around them. The race of giants, of appalling grotesques, of magicians, of superhuman folk, with all that that implies of superstition and ignorance, had vanished for ever.

If you want to see a vivid picture of the new race, neither more nor less than human, you have only to look in the pages of Shakespeare, where it is fixed for ever.

In reality the Renaissance culture meant a new mode of life, more lightsome, full of new amenities and delicacies—indeed, a new sanity of living. After many years architecture was affected, and by the time Wren came to build it had gone through its tentative efforts and was a complete system.

The old Mediæval builders were empirics, men without science, who raised their towers and spires fearfully into the sky.

The new race of architects were to be scholars and men of science, and in so far as architecture is susceptible of the impress of the individual it was to be henceforward stamped by personality. From this time, for better or worse, architecture was to be as individual as any other work of art. Its aim, moreover, was to be purely æsthetic.

But although its spirit was changed, the actual methods of building remained the same.

It is usually assumed that the fine race of Mediæval workmen passed away with the final withering and dying of the Mediæval spirit. That it did not is evident from the example of St. Paul's and the City churches, where all the trades appear in great perfection. Indeed, I do not think that the skill of hand, the intelligence of workmen, has ever been greater than it was in the latter half of the seventeenth century. The workman's hand retained all its cunning through the changes of this century; nay, he became more skilful, more workmanlike, and it was only in the nineteenth century that his hand faltered before the unerring mechanic power of steam, which came and swept away ruthlessly what the feeble hand of man alone can give to wood, to stone, or to iron, something of the warm heart that moved the pulses in the quick joy of creation.

I will not refer to the dynastic changes of the seventeenth century, which ultimately may be referred back to a changed outlook of the people, nor to the founding of the Royal Society, which sounded the death knell of ignorance and superstition. I will leave you to consider these aspects of the seventeenth century for yourselves, and try to explain

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*** A Paper read at the Camberwell School of Arts and Crafts, on February 19.**

the nature of the events that made it necessary for the City churches to be rebuilt.

Two of the greatest calamities that could overtake any city befel London in the last half of the seventeenth century: the plague of 1665 and the fire of the following year. Nearly 70,000 victims were claimed by the former, and before its ravages had come to an end the fire broke out which consumed five-sixths of what was then London. Pepys tells how he was awakened by his servant Jane at three o'clock in the morning of the first day of September, to be told that a great fire was raging. He paid no heed to this information, and went to sleep again. When he rose at seven he found that about 300 houses had been consumed in the night. Going to Whitehall in his official capacity, he reported to the King how things were, and advised that his Majesty should give orders for houses to be pulled down to prevent the fire spreading. Pepys was empowered to go to the Lord Mayor, Sir Thomas Bludworth, and command him to demolish houses in every direction. The Lord Mayor seems to have been a poor creature, for when he heard the King's message he cried out like a fainting woman, "Lord, what can I do? I am spent; people will not obey me. I have been pulling down houses, but the fire overtakes us faster than we can do it." Fortunately, the Londoners were more vigorous than the Lord Mayor, and set about this work of prevention, a work in which they were assisted by the King and the Duke of York.

In the pages of Evelyn and Pepys you will find the progress of the fire recorded from day to day. It was got under by September 7, but the condition of the streets for a long time afterwards may be gathered from the fact noted by Pepys on May 16, 1667, that smoke was still issuing from cellars in the ruined streets.

It is impossible for us to realise the scene in all its magnitude and terror, yet we may conjure up some of its features from the account left by Evelyn. This is what he writes on September 3, 1666:—

"The conflagration was so universal, and the people so astonish'd that from the beginning, I know not by what despondency or fate, they hardly stirr'd to quench it, so that there was nothing heard or seen, but crying out and lamentation, running about like distracted creatures without attempting to save even their goods: such a strange consternation there was upon them, so that it burned both in breadth and length, the churches, public halls, Exchange, hospitals, monuments and ornaments, leaping after a prodigious manner, from house to house, and streete to streete, at great distances ye one from ye other; for ye heat with a long set of faire and warm weather had even ignited the aire and prepared the materials to conceive the fire, which devour'd after an incredible manner houses, furniture, and every thing. Here we saw the Thames cover'd with goods floating, all the barges and boates laden with what some had time and courage to save, as, on ye other, ye carts, &c., carrying out to the fields, which for many miles were strew'd with movables of all sorts, and tents erected to shelter both people and what goods they could get away. Oh the miserable and calamitous spectacle! Such as haply the world had not seene since the foundation of it, nor be outdon till the universal conflagration thereof.

"All the skie was of a fiery aspect, like the top of a burning oven, and the light seene above 40 miles round about for many nights.

"God grant mine eyes may never behold the like, who now saw above 10,000 houses all in one flame; the noise and cracking and thunder of the impetuous flames, ye shrieking of women and children, the hurry of people, the fall of towers, houses and churches was like a hideous storme, and the aire all about so hot and inflam'd that at the last one was not able to approach it, so that they were forc'd to stand still and let ye flames burn on, which they did neere two miles in length and one in breadth. The clouds also of smoke were dismall and reach'd upon computation neer 50 miles in length.

"Thus I left it this afternoone burning, a resemblance of Sodom, or the last day. . . . London was, but is no more."

St. Paul's and eighty-six parish churches lay in ruins, and houses innumerable had totally disappeared. Thus Mediæval London perished, and it is only from a few isolated churches and buildings that any idea of old London can be gathered.

Old London, with the exception of the churches which were built of stone or brick, seems to have been a town of wood. This material was easily procurable from the forests with which the country around was covered. This mode of building subjected the city to continual ravages of fire—notably to a most destructive conflagration in the reign of William the Conqueror, when the first cathedral church of St. Paul's perished. Notwithstanding this and other repeated warnings, the same manner of building was practised till the plague and fire of 1666. These repeated calamities at last gave people to reflect on their cause. Not only was wood the common material of building, but the houses with their overhanging gables almost touched one another in the narrow lanes and streets, inviting plague and fire.

After the fire the wish became general to widen the streets, and to build with brick and stone.

To-day one hardly regrets the great fire, as it was the means of giving us a healthier and more beautiful London, yet much that was beautiful perished at that time. In the destruction of St. Paul's hundreds of memorials perished—memorials of men whose names are by-words in history. So in the same way not a church perished without obliterating some memory.

Immediately after the great fire Wren made an exact survey of the ruins—he was now surveyor-general of the King's works—and made a plan for a new and magnificent lay-out of the city, which unfortunately was never carried out. Frustrated in his desire to make London the finest city in the world, Wren still had plenty to do. For the city still had to be laid out, without too much deviation from the old lines of the streets, yet with widened thoroughfares, and the claims of endless freeholders and leaseholders had to be adjusted.

As soon as anything could be done the rebuilding was begun, and it is said "that the whole city was raised out of its ashes without any suits of law."

It can readily be imagined that a city, the population of which had been decimated by the plague, would find itself faced by a shortage of workmen in an emergency such as its entire re-edification would create. Owing to the shortage of men, they had to be impressed to carry on the important naval works at Sheerness.

Indeed, the lack of men was so obvious that an Act of Parliament was passed giving to foreign—i.e. provincial—carpenters, bricklayers, masons, plasterers, joiners, and other artificers who should be employed in the rebuilding of the city the same liberty of working as that enjoyed by freemen of the city. And that having wrought for seven years they should continue to enjoy that freedom for the remainder of their lives.

This statute allowed country men to flock to London, greatly to the advantage of the various contractors. It was at this time that Thomas Strong came to London from Taynton, in Oxfordshire. He had already worked for Wren at Trinity College, and it is just possible that his express invitation, now that the new statute had removed the disabilities attaching to provincial workmen, had something to do with his coming to London. Strong brought a number of workmen with him.

Before beginning his great work of rebuilding St. Paul's, Wren consulted with the most eminent masons in England as to the best stone to use. It is very likely that this Thomas Strong was amongst their number, for it was he and another mason named Joshua Marshall who laid the eastern foundations of St. Paul's. Of all Wren's master-masons, the one who would seem to have enjoyed his greatest confidence was Edward Strong, a brother of Thomas. He succeeded to his brother's numerous works, at St. Paul's as well as at many of the city churches. He carried on the building of St. Stephen's, Walbrook, and brought it to a conclusion. In 1681 he began to build St. Mildred, Bread Street, and in 1683 St. Clement's, Eastcheap. In 1684 he laid the foundations for the Palace at Winchester, and St. Mary Magdalen, Old Fish Street. He also built St. Michael Royal, upon College Hill, and St. Vedast, Foster Lane. In these works and others he was engaged during a life of laborious industry, sometimes alone and sometimes with partners "raising the fabric of his own fortune," till he "became possessed of many considerable estates in London, Middlesex, and Hertfordshire." He lived to see St. Paul's finished, laying himself the topmost stone of the lantern, which was built by his son. As he died in 1722 at the age of seventy-five, and as it is most likely that he worked with his elder brother at the eastern foundations of St. Paul's, he is one of the very few men who saw the beginning and the end of this great undertaking. It is stated explicitly on his gravestone that he enjoyed with Wren and Bishop Compton this felicity.

It is interesting to consider some of the influences that went to the forming of Wren's style. His mind was very alert, and he was able to master easily any subject that interested his intellect. It would appear that he was definitely turned towards architecture when he heard the fame of St. Peter's at Rome hinted throughout Europe. He quickly made himself master of the particular system of design then in vogue—Palladianism. His practical mind quickly made him a master of the static principles underlying it. Eventually he met in the flesh one who was celebrated as the greatest artist of his time—Bernini, under whose auspices St. Peter's was completed.

It may seem, at the first glance, that Bernini and the city churches of Wren's have no relation to one another. In reality the relationship is a very intimate one.

I have said that we call the style of architecture brought to perfection by Inigo Jones and Wren *Palladianism*, for want of a better name. The former was indeed a disciple of Palladio, but Wren was more influenced by the Baroque artists, of whom Bernini was the most accomplished, who had broken away from the classicism of Palladio. And you will find in Wren's work many a wayward fancy, a playfulness, a sheer delight in invention more akin to the Baroque architecture of the seventeenth century in Italy than to the calm exquisite dignity of Palladio's work, which was likened by Goethe to "frozen music." Wren's churches never attained the calm dignity, the wonderful austerity of Palladio's two churches in Venice, S. Giorgio and the Redentore, but they possess a wonder of their own. I do not think the opportunity has ever been given to any man, more completely than to Wren, to model a great city. Wren wished to place the churches on *isolated sites*, but this desire was frustrated when his plan for a new lay-out of London, from many considerations, was found could not be carried into effect. The new churches were built on the sites of the old, which were in many cases very confined. And it was in reducing these *irregular* sites to the orderly forms of art that Wren achieved so much beauty, not without introducing an element of surprise.

It is impossible to speak of Wren's churches without mentioning St. Paul's, for, in the first place, the former were all built during the thirty-five years occupied by the erection of the latter; in the second, many of the master-builders working at St. Paul's were also employed on the churches; and in the third, the churches were in many cases experiments. One of the greatest material achievements of the human spirit is the invention of the dome—a similitude of the vault of heaven, but such a form had never been seen in England before Wren built St. Stephen's, Walbrook. In the many designs for St. Paul's a dome was never absent, but so varied in form that it is obvious that Wren could not decide on its exact shape. The churches gave him an opportunity to experiment, and we find that he designed no less than seven of them with domes. He built them all between 1672 and 1686, that is to say, more than ten years before the drum of the dome of St. Paul's began to show above the roofs.

Unfortunately, two of the domed churches have been destroyed—St. Benet Fink and St. Antholin. Both of these churches had a dome of an elliptical shape—a form curiously fascinating to the architects of the seventeenth century, perhaps from its strangeness, a character not inherent in the circle, the reason of which is obvious. St. Stephen's, Walbrook, St. Mary-at-Hill, St. Swithin's, St. Mildred's, St. Mary Abchurch all remain, and are sufficient to justify the epithet of ingenious which is often applied to Wren. Domes of various shapes give these buildings their peculiar character. In some cases Wren used a similar ground plan for churches which were roofed without domes. His mind seems never to have tired in its search after variety, and at the same time fanciful expression, not only in the matter of the ceilings of his churches, but perhaps more so in his spires. You have only to consider a moment to realise that architectural scholarship could not take Wren very far in designing the spires of his city churches. Fine scholarship may produce a spire like the one on St. Pancras Church, but not one like that on Bow Church or St. Vedast. Wren brought a very fertile imagination to bear on all his problems of design, but nowhere more than in these lovely spires with which he has beautified London, which are Baroque in every line.

It is pleasant to dwell on the fact that Wren, when for the last time he was hoisted in his basket to the summit of St. Paul's, saw these churches in their manifold diversity, sewn like white passion flowers among the red roofs of London. It must have been the greatest moment of his life to behold, spread out beneath his feet, the works of a long and laborious life, in number great and fertile in beauty.

ART IN LONDON.

At the Gallery of Goupil & Co.

We intend to reserve for the latter portion of this notice what we desire to say about the best section of this triple exhibition, which consists of works by Alberto Martini, the Black Frame Club, and Frank L. Emanuel.

Rightly or wrongly, we are apt to suspect the merits of any one-man show, where the catalogue is prefaced by a long notice of the artist and his craft. Of course, there are exceptions, but amongst such we cannot include these exhibited works by Martini; nor is it a case where we desire to enter into detailed criticism.

All we would say is that Edgar Allan Poe can be sympathetically interpreted without any such ghastly and inartistic presentments as these ninety-five drawings provide; and as for the twenty-three illustrations of Shakespeare—they are, if possible, even less sympathetic and more inartistic.

The Black Frame Club (founded in 1894) is very select, consisting merely of President, Vice-President, Hon. Secretary, and four other members. Its *raison d'être* will be understood from the name of it. The present show is not fatiguing by reason of its size, as there are only sixty small exhibits, all told; but let us regard more closely what is suspended from the walls. There are but two of the artists who share the honours, and they share these equally. Mr. Paul Paul and Mr. Benjamin Haughton are both adepts at their work, which breathes harmony and sympathy and all the nobler qualities of art. Mr. Paul's studies betray the more virile touch, whilst Mr. Haughton's excel slightly in rhythmic utterance. Regard, for instance, "On the Quantocks," with the telling effect of the foreground trees and the tender hazy distance of the hills beyond. Mr. Paul's work, too, can be tender even in its virility, as "Changing Pasture" evidences; one of our earliest lessons in the beauties of Nature was in regard to the infinite variety and beauty of the tones and tints of green, and this canvas of Mr. Paul's is thus illustrative. Did we want to quarrel with Mr. Haughton, we should do so upon the entitling a work "Geese and Goslings," where it requires a close inspection to detect these Liliputian birds in a charming picture. In "West Somerset" the same artist bears witness to the value of some focal bright colour, even as Rubens and Prout (to name two brilliant exponents) bore similar testimony. Mr. Paul's "Berkshire Lane" is particularly striking, with its sunshine and shadow; and "Summer," "Sussex Landscape," and "A French River" are other admirable works by the same artist. Before regarding other exhibits we must name "Thawing," "A Woodland Stream," and "The Crest of the Hill" as serving most efficiently to sustain Mr. Haughton's artistic claims. The rest of the exhibits are soon disposed of. Of Mr. Wehrschmidt's thirteen works, "Columbus" is the only one to which we can allot merit, and even then not to the picture in its entirety, but to the really well-modelled and posed navigator. Mr. E. Borough Johnson, R.I. (the President), is not convincing, but in "The Frugal Meal" the man's figure is thoroughly good, and there is knowledgeable work in his portrait of Mr. Morewood. Mr. Percy Gibbs has a bright sketch in "The Afterglow," whilst Mr. Scott will be well advised not to bring the little twinkling stars in front of the trees; as painted, the stars do not by any means give the appearance of being "up above the world so high."

The interest of the Black Frame Club being thus really confined to the work of two artists, it will be understood that when we are confronted by a one-man show where practically everything proves attractive, it is this which must prove the most interesting portion of the triple bill. And such an exhibition is that displaying etchings by Mr. Frank L. Emanuel. It is not because his work will be well known to readers of *The Architect* that he is given the place of honour. Rather is it that because his work is worthy it is so readily accepted for this Journal. One frame shows four of his early studies in etching, and these "mightily pleased us" (as friend Pepys would have said). Others which we may select as worthy of special record are "Moonrise, Lower Thames," and "Gad's Hill Place" (mezzotints), "Ebb Tide in the Haven," "Distant Amsterdam," "Silvery Morn" (dry-points), and "Hellegang, Brussels," "Ecuries, Picardy," and "A Suffolk Farm." In some we discover the veritable Emanuel essence, such as "The Cooper's Gate, Middelburg," "Rue Eau-de-Robec, Rouen," and "Rue St. Romain, Rouen." What pleases us particularly in this artist's etchings is his appreciation of correct angles of hatching, which is by no means universally noticeable. We may conclude with a note of praise for Mr. Emanuel's design for the cover of the catalogue, where his signature was not necessary to stamp the work as his.

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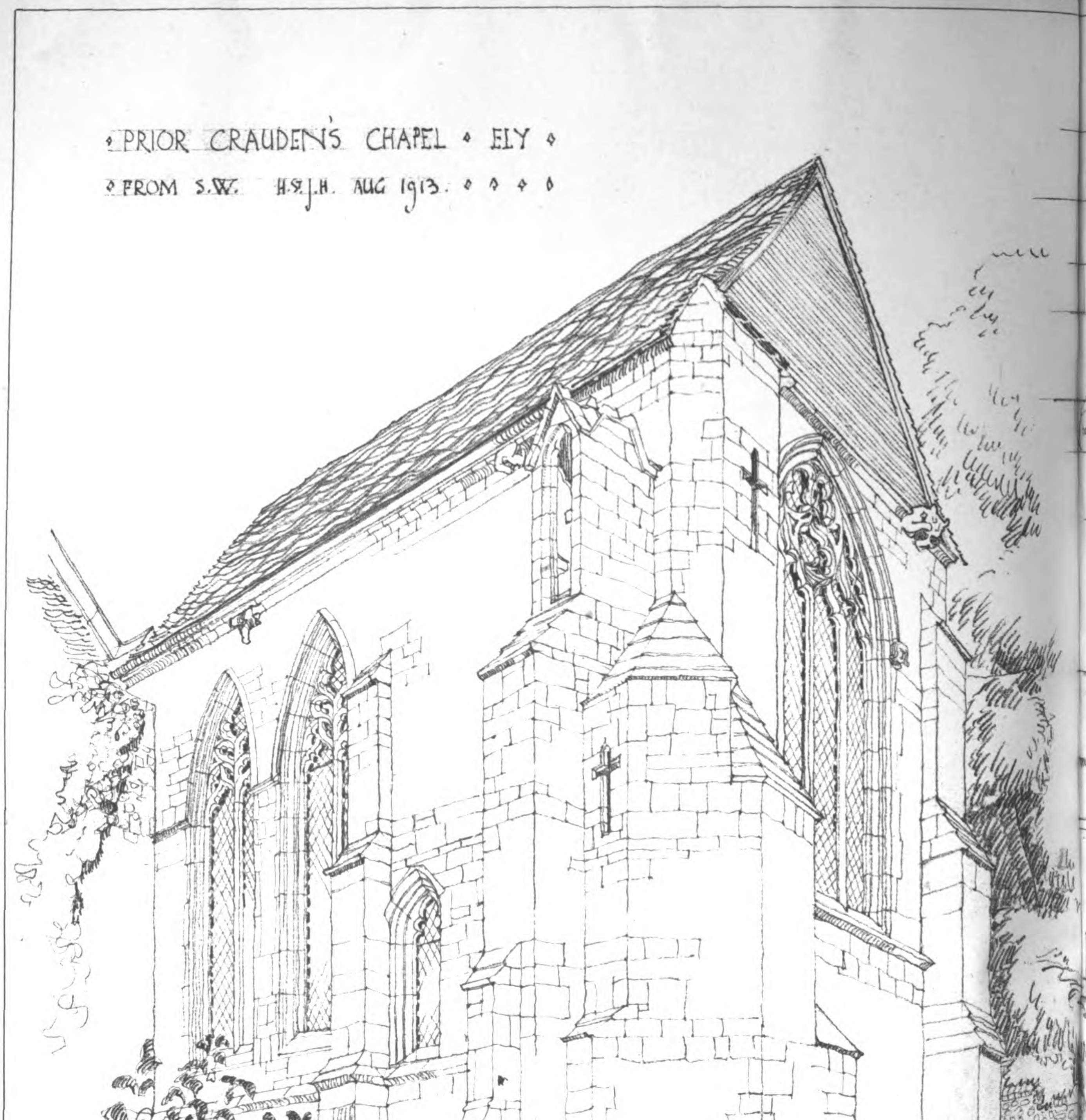
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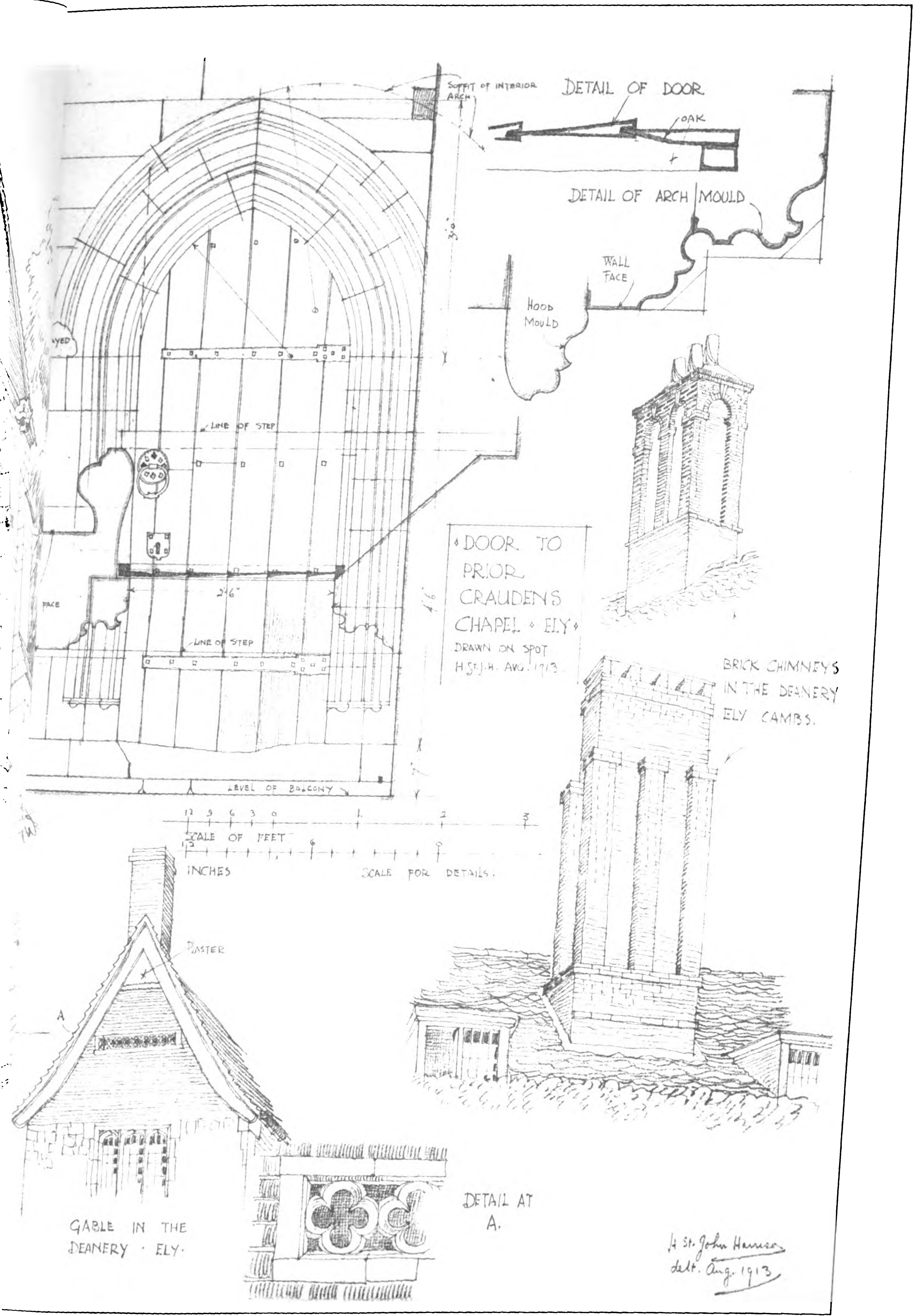
◆ FROM S.W. H.S.J.H. AUG 1913. ◆ ◆ ◆ ◆

“THE ARCHITECT” TRAV STUDI

From a drawing by Mr.


SOFFIT OF INTERIOR ARCH
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WALL FACE
HOOD MOULD
3'0"
LINE OF STEP
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LINE OF STEP
FACE
4'6"
LEVEL OF BALCONY
12 9 6 3 0 1 2 3
SCALE OF FEET
INCHES
SCALE FOR DETAILS
DOOR TO PRIOR CRAUDENS CHAPEL · ELY
DRAWN ON SPOT H.St.J.H. AUG. 1913
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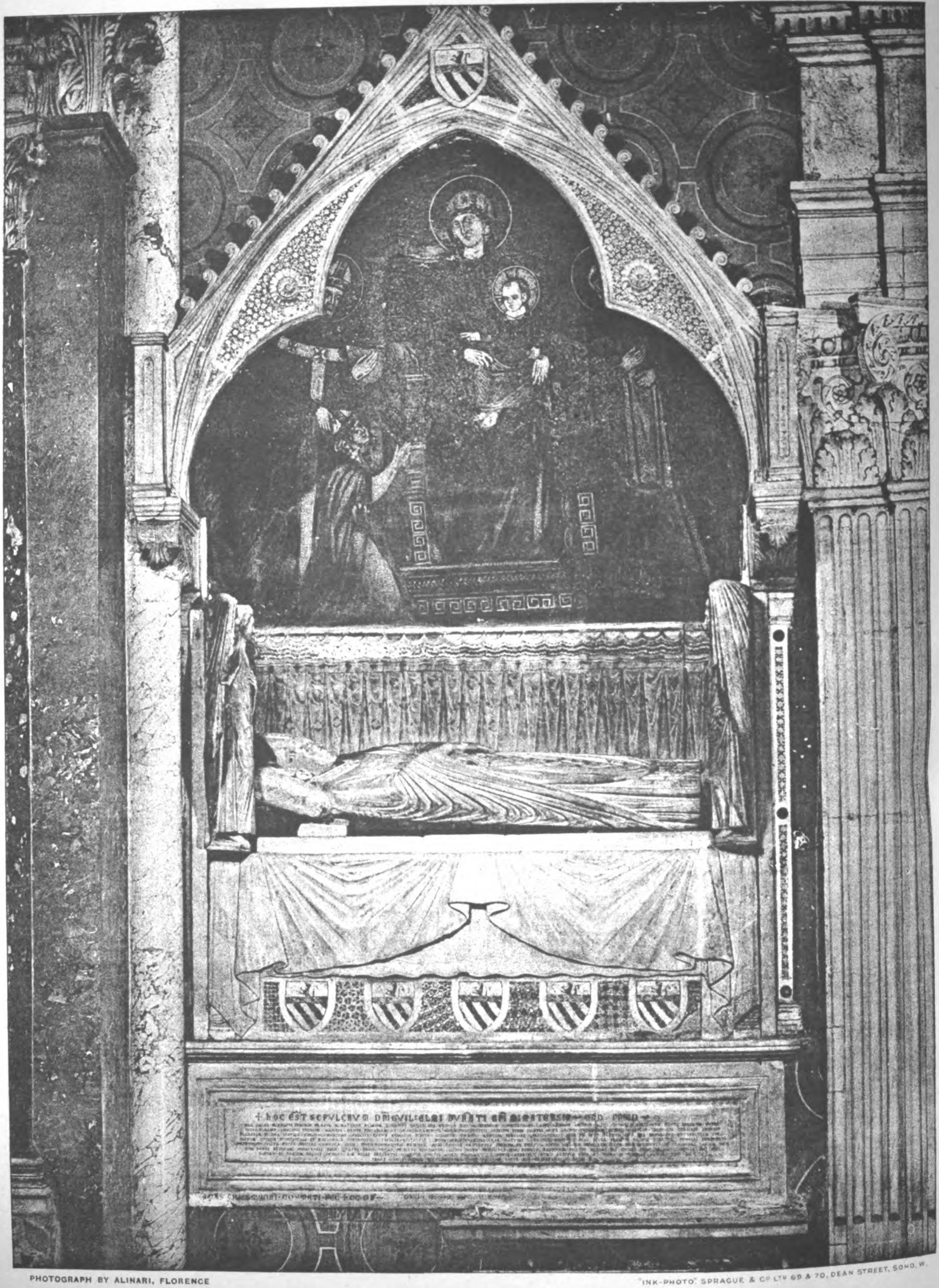

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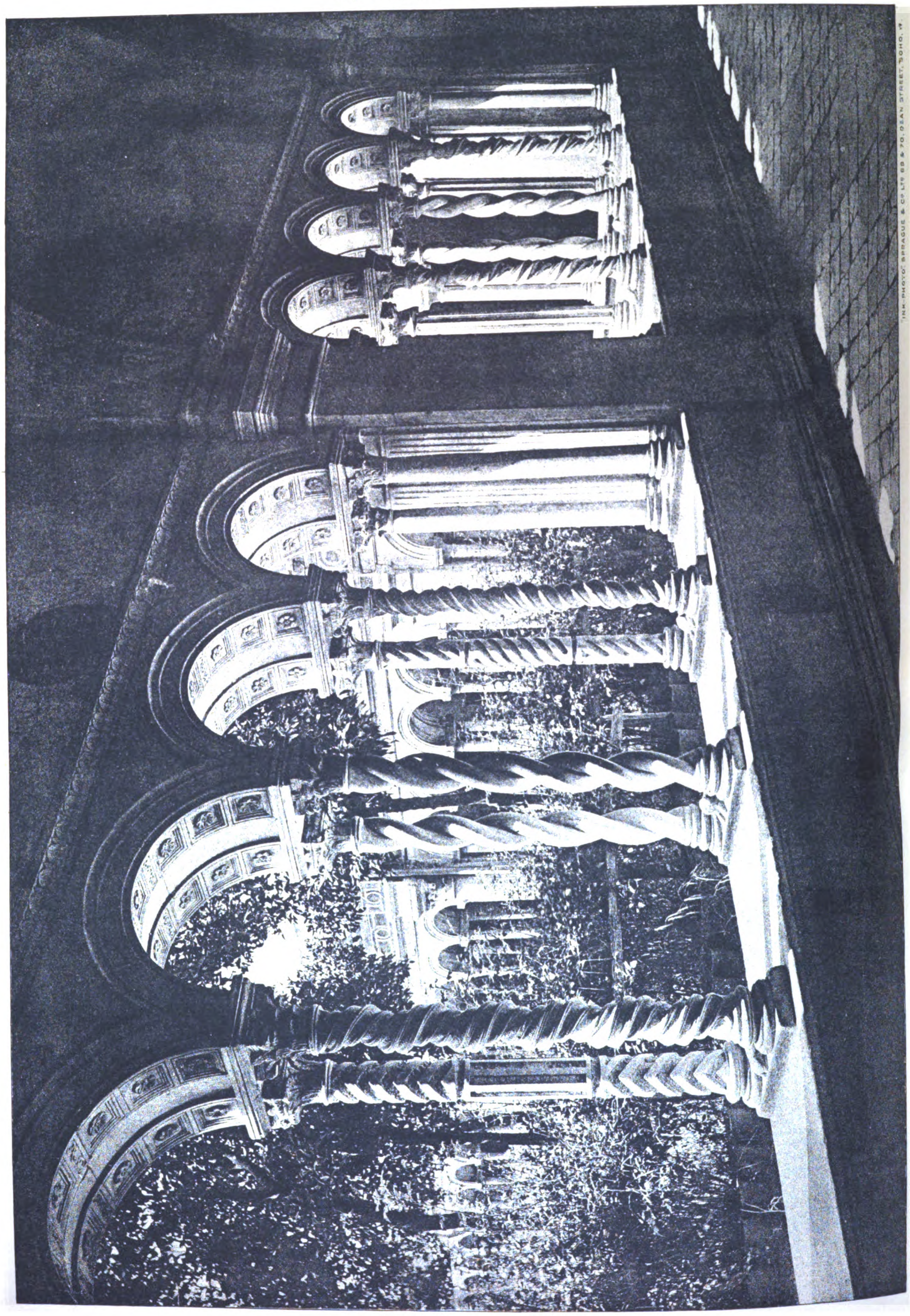
S. MARIA SOPRA MINERVA, ROME: TOMB OF GUGLIELMO DURANTE.



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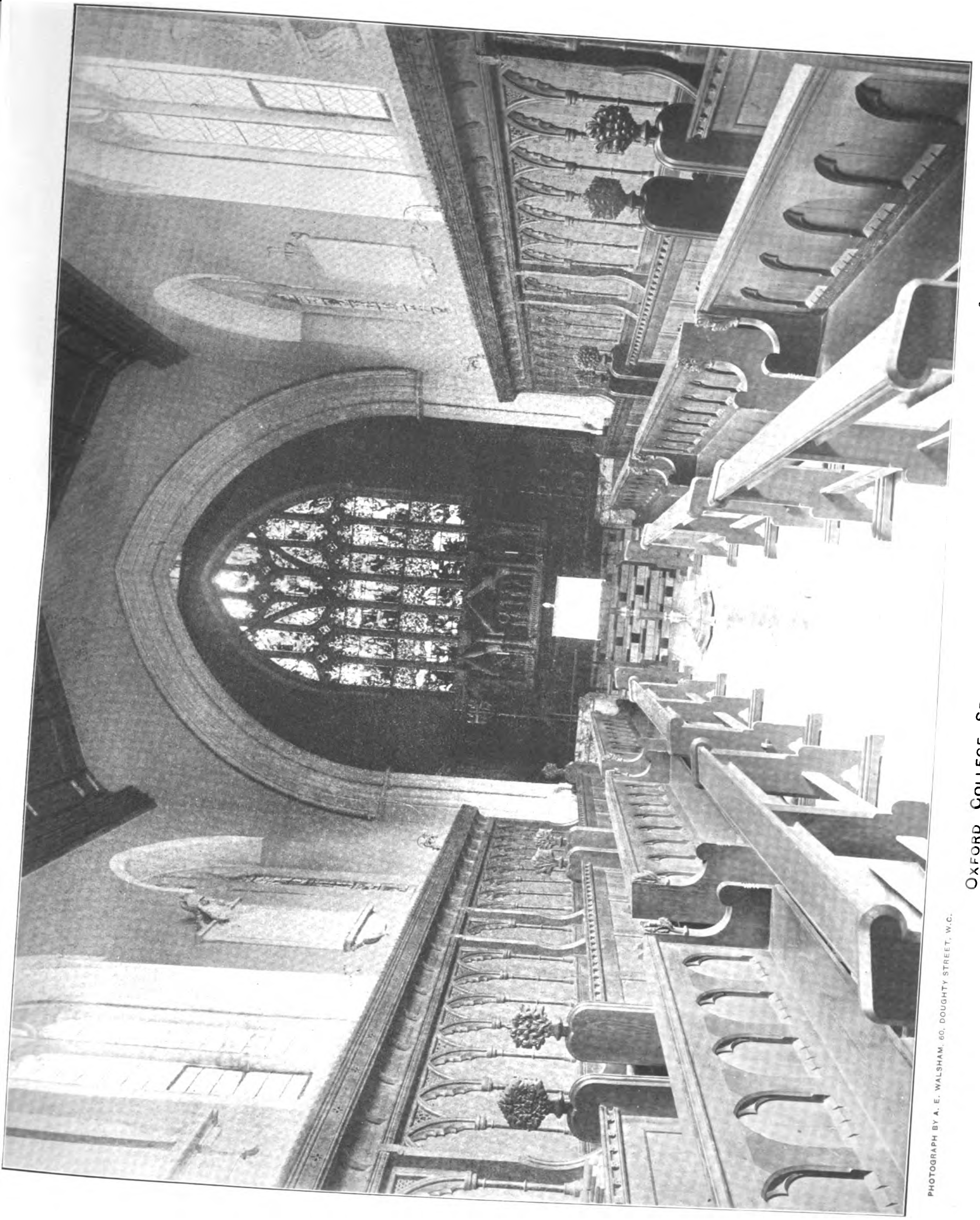

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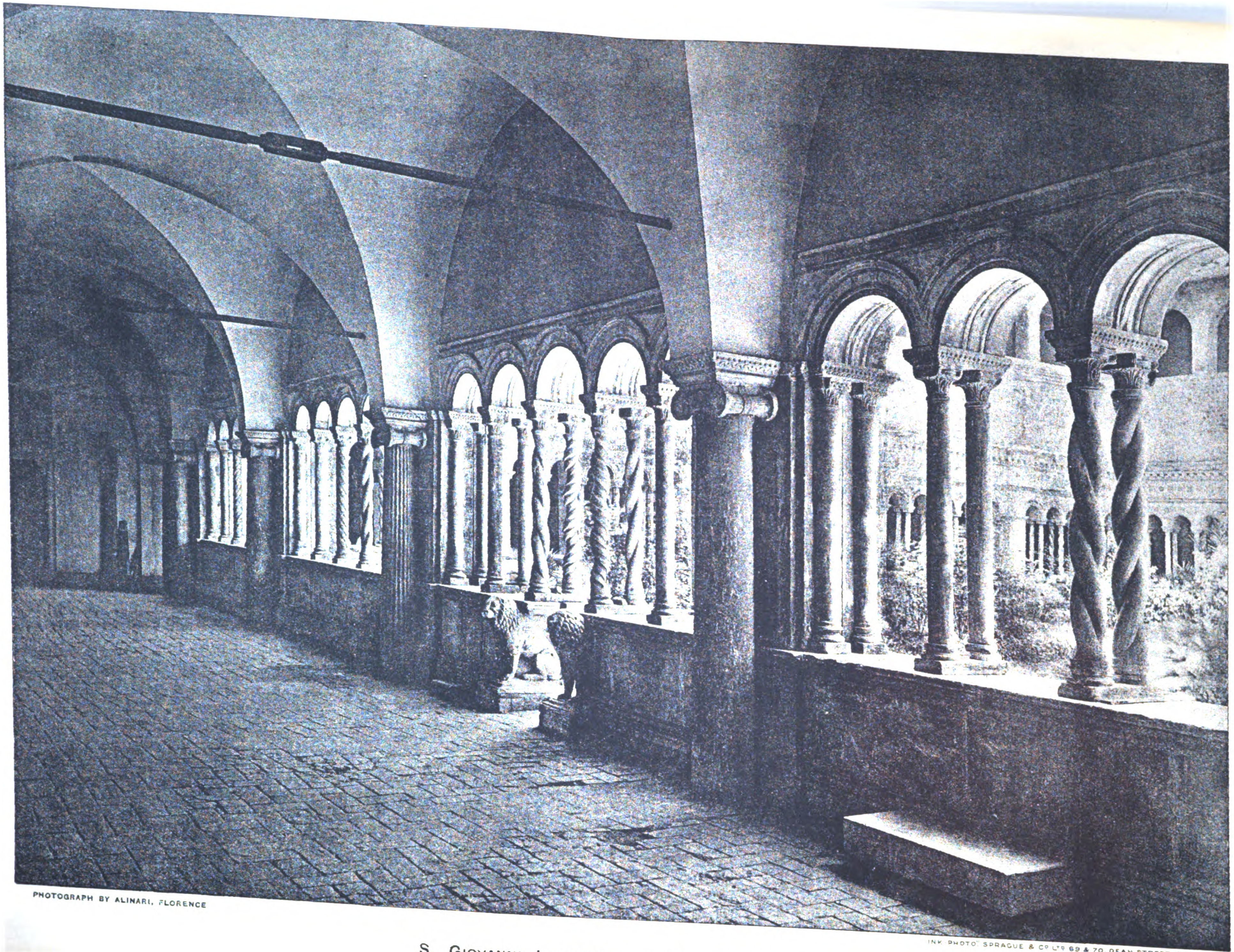

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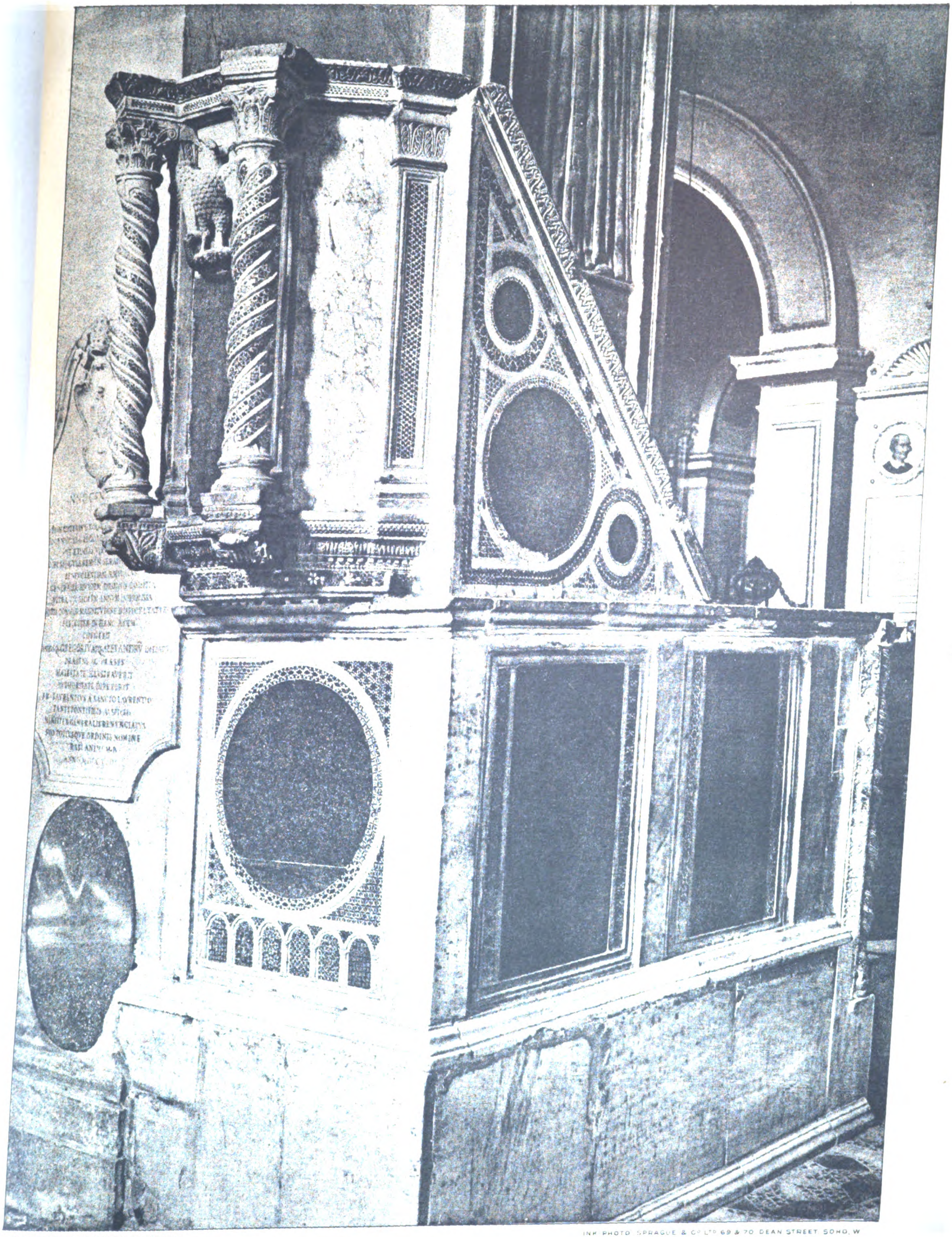
S. Giovanni Laterano · Detail of Cloister



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Pulpit in S. Maria in Aracoeli, Rome.

BRICKS AND BRICKMAKING.*

By Arthur E. Brown, B.Sc., London.

In the limits of time at my disposal, I propose to omit any description of how bricks are made with materials other than those of the clay description, and I will, therefore, first give some account of clay and its properties.

Geology.

Clays are found in two categories geologically, surface clays and geological deposits. The first-named are those of more recent formation found in all parts of the world in comparatively shallow beds which have been deposited by ice, rivers, or lakes in what is called the Pleistocene period. Such prehistoric remains as are found in any of them belong chiefly to the animal kingdom. These are not frequent, and consist usually of bones of large mammals. In my native county, Essex, I have found the teeth and bones of the elephant in the white chalky clay under red clay at Chelmsford.

The geological clays are of varying age, the Bagshot, London clay, Reading, and Gault beds being the most recent. The red Marls of Leicestershire and Warwickshire and Wales were deposited in earlier times, and belong to the upper Triassic beds. Earlier still are the shales and fireclays of the coal measures or carboniferous period. This sub-division is of the sketchiest kind, because my intention is rather to show what clay is and how it is used in brickmaking than to describe its origin.

Sufficient to note, further, that clay in general is the product of the decomposition or disintegration of granitic or other igneous rocks, and that all clays possess certain chemical and physical properties in common.

Chemistry.

It is frequently supposed that chemistry must play an important rôle in brickmaking. This is true, obviously, to a certain extent, and in some branches of claymaking its importance is great. In the more ordinary use of clay, however, for brickmaking, chemistry is of comparatively meagre value.

Chemistry tells us that clay is a compound of silica and alumina in fixed chemical proportions. It is what is called a hydrated silicate of alumina. Chemically, clay is this and this only, but in nature clays present almost infinite variety by reason of the presence of other substances. They contain free silica or sand in widely varying proportion. They contain also free oxide of iron, to which the red colour of the Suffolk brick and the blue colour of the Staffordshire blue brick are due.

They contain alkalies—potash and soda, refractory earths—magnesia and lime; many contain small quantities of oxide of titanium, a so-called rare earth. These are all in comparatively small proportions, and whatever plastic clay we analyse it is found to contain somewhere in the neighbourhood of 85 per cent. of silica and alumina. Silica is sand. Alumina is the oxide of that peculiar light untarnishable metal aluminium, which has given chemists so much trouble to produce commercially and metal workers so much trouble to handle and fashion for use. The few other materials found in clay have far less influence on the final product than does the varying physical condition of silica and alumina.

The presence of iron oxide has effect on the colour, and the presence of lime also. The presence of lime and alkalis have marked effect on the fusibility of the clay under great heat.

In these matters, chemical analysis is of assistance to us, but even so practical examination will tell us all we need to know in these respects without analysis. The presence of water which can be measured by analysis interests us only when we turn to a physical examination of the properties of clay.

Physics.

Clay is unique, though to many it is only dirt, because it is the only substance found in nature possessing the property of plasticity. Plasticity may be described as the property by virtue of which clay may be changed in form without breaking up or destroying its continuity, or may be joined without the use of any cementing material.

In nature, most clays are only in a semi-plastic state, and become quite plastic when water is added to them. The purer the clay the more plastic it is in the natural clay beds, provided the silicate of alumina is in a state of division sufficiently fine. It would seem that this important property is due to the fact that silicate of alumina can absorb water in large volume, at the same time becoming gelatinous and swelling up. It is this property that makes clay impermeable to water. From this explanation we can easily understand that when clay is dried and the gelatinous particles lose their water they become less in volume and shrink.

We all know that clay shrinks in drying because of the way clayey soil cracks in summer time. It is also pretty widely known that the more "sticky" the clay is the more it cracks when dried. This, it is apparent, is because it is purer and contains more of the gelatinous silicate of alumina in a given volume than a sandier clay or loam which shrinks less in drying. It will be clear, then, that a sticky or strong pipe or tile clay shrinks more in percentage than a sandy clay, but there is more in the matter than this.

Given a sandy, less sticky, or "milder" clay like that of the Suffolk brickfields, the amount it shrinks in drying depends also on the shape and size of the sand particles. These are surrounded by the gelatinous material when wet, and at a certain stage in drying they come so close together in the mass as to touch each other. Now, if the sand grains are rough and angular, their further movement is arrested, whereas if fine and round they can slide on one another into still closer positions, and so shrinkage continues further.

When a clay with fine round sand grains dries, shrinkage goes on till arrested by the grains getting as close together as is possible, but still the gelatinous pure clay surrounding them goes on shrinking, with the result that spaces or pores begin to be formed in the mass, into which air enters.

We thus arrive at another condition in which the pores formed in the clay gradually lose water throughout the whole mass. The size of these pores depending on the size and shape of the grains, we get two different states in different kinds of clay. The one is called porosity and the other permeability. They are only different degrees of the same thing, but they are interesting to the brickmaker because of the difference in quality of the brick produced and the different results obtained by different processes of manufacture.

All clays found in nature become porous when dried, but those with the larger angular grains are permeable even before drying. This peculiarity is of great importance in a building, for the striking reason that a permeable brick will better resist the weather and will also "breathe" or allow air to pass through the walls.

Now, I can quite well believe that my arguments may convince you that the permeable brick will let more air pass than the merely porous one, but you will say that the same applies to water. This is true, but two points even in this connection still indicate that the permeable brick is best for buildings.

The first is that, provided the wall is not too exposed to constant driving rains, in which case it should be built hollow, the water dries out very rapidly when the rain stops. In our variable climate, the permeable brick will usually dry out completely between the rain periods and before any water has penetrated the wall, and will again let air through. The porous brick will not, because it takes proprtionately longer to dry than it does to wet.

The second point is the effect of frost. It is well known that water expands just before freezing. That is why it cracks our water pipes. The same thing happens inside a brick, but when the water in a permeable brick freezes the holes are large enough to let the ice squeeze out when formed, and no harm is done. In a porous brick (that is, one with extremely fine pores) the ice cannot squeeze out for the same reason as you cannot blow through a minute tube, and so it bursts the face off the brick instead.

I must speak here, in passing, of two kinds of brick in which the properties of porosity and permeability are of quite a different nature. These are the bricks made by the semi-dry process of manufacture, of which more later. In one type, exemplified by the Fletton brick, the shale is pressed into shape in a nearly dry state, and plasticity is not present at any stage of the process. When burned in the kilns no change of physical condition of the clay takes place. Shale is in the form of flakes, and the interior of the brick, therefore, is in an irregular condition, with no direct uniform pores or tubes in it. Yet it contains a proportion of spaces with air in them. The outside surface is more compressed than the inside, and is smoothed or polished by the action of the steel moulds in which they are pressed.

When, therefore, after a long exposure to wet, the interior

*** Abstract of Paper read before the Society of Architects on March 12.**

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becomes more or less soaked or sodden with water, frost will produce the same disastrous results as with the "porous" non-permeable brick, but in a still greater degree. And once the skin is broken further disintegration is still more rapid.

The second type is exemplified by the Accrington red brick. This, too, is generally made by the semi-dry process, but on burning in the kiln the clay begins to melt and becomes vitrified. It is then practically impervious to water, and suffers no harm in frosty weather. It is a good sound brick, but it does not breathe at all, and, therefore, possesses only one of the two important virtues of the brick that is perfect from the hygienic point of view.

I must not forget to mention that the permeable brick has a further virtue, as it does not conduct heat and cold as much as the hard impermeable brick, and for all these reasons I venture to express the opinion that a sandy hand-made brick, besides being more artistic, is more lasting and more hygienic than any other type made.

Continuing my remarks on the physical properties of clay, I would call your attention to the fact that in the practice of brick drying and burning many technical difficulties arise and many interesting scientific principles are involved.

In the use of the plastic method of making, a curious feature is seen in the difference of behaviour of surface clays and geological clays.

The aim of manufacturers is to dry the newly made brick with the least possible injury to shape by twisting or cracking. It is found that a surface clay presents little difficulty in the early stages of drying, but it is very apt to crack suddenly when about two-thirds dry. On the other hand, many geological clays are very liable to crack in the early stages, and yet give no trouble when about one-third dried.

A similar difference exists in burning the different classes of clays. The surface clays do not shrink in burning unless over-burned, but many geological clays shrink little in drying and a great deal in burning. This is specially the case with the Marls of Leicestershire, Warwickshire, and Wales.

Some of these when burned behave curiously, in that you may get them up to full temperature in the kiln, and for twelve hours or so they do not contract. Then they begin to do so, and for forty-eight hours continue to shrink in a regular manner. Practice teaches the burners to measure this contraction, and when it reaches a certain amount they stop firing, because they know the goods will proved correctly fired.

With the surface clays this does not occur, but the colour of the goods is influenced by the length of time the full heat is kept up. Red Suffolks require "soaking" with fire in order to get the iron in the clay oxidised to a good red colour.

The burning of bricks presents many other interesting features, chiefly in relation to the production of the final colour required, but I must begin at the beginning of this branch of the subject.

Clay contains a great deal of water, and, speaking chemically, this water is present in three distinct conditions or states. A wirecut or hand-made wet brick contains "water of manufacture," which is evaporated completely in the drying process. The brick is then no longer plastic, but is hard and solid. If now it is heated up to the boiling point of water, 212° Fah., it loses more water, called hygroscopic water. The water of manufacture may be from 33 per cent. to 50 per cent. of the total weight of the wet brick. The hygroscopic water is about 5 per cent. The driving off of the hygroscopic water in the kiln is called steaming.

If the brick which has been steamed is taken out of the kiln, it will absorb water from the air until all the 5 per cent. is back again in the brick, but it will not absorb any water of manufacture. Up to this stage the clay can be made plastic again by wetting it. On continuing to heat up the kiln till it reaches about 900° Fah., more water again is driven off. This is the water chemically combined with the silicate of alumina. It amounts to about 10 per cent. of the weight of the dry brick, and when once it is driven off the plasticity of the clay is finally lost and cannot be restored. The clay has become brick, although at that temperature it is not sufficiently changed in chemical nature to remain permanent and solid. The heat must be raised to about 1,800° Fah. to produce a well-burned red brick, and still further for other types, such as firebricks, which require about 2,250° Fah. temperature.

Having considered the action of heat in burning clay, we are still confronted with a number of other features of the process of burning.

(To be concluded.)

BUILDING PROGRESS IN THE PROVINCES AND SUBURBS.

A LIST OF WORKS PROJECTED OR COMMENCED.

(N.B.—Local Authorities, architects, and others are invited to submit full particulars for insertion in this weekly list. Where districts are not entered against names of architects and builders the address is as a rule local.)

ENGLAND.

BUCKINGHAMSHIRE.

Aylesbury.—No. 29 Kingsbury: rebuilding, for Tabor Trustees.

Eight cottages, Highbridge Road, for Mr. Southam,

CAMBRIDGESHIRE.

Chatteris.—Conservative Club, King Edward's Road. Messrs. Stallebrass & Sons, architects, Broad Street, March.

CHESHIRE.

Stockport.—Prudential Assurance Co.'s Offices. Mr. Paul Waterhouse, F.R.I.B.A., architect, Staple Inn Buildings, London, W.C.

Whaley Bridge.—The "New Inn": rebuilding, for the North Cheshire Brewery Co.

DERBYSHIRE.

Grassmoor.—P.M. Schools and Institute (£1,600).

DEVON.

Buckfastleigh.- Proposed workmen's dwellings (£3,200).

Dartmouth.—Naval barracks for the men of the cadet training ship *Britannia.*

Royal Naval College: extensive additions.

Exeter.—Public Library and City Hall.

Manual School (for sixty places), for the Royal Albert Memorial Building Committee (£2,000).

DURHAM.

Harraton Colliery.—Hundred houses, Office Row, for Chester-le-Street R.D.C.

Houghton-le-Spring.—Fifty-two working-class houses near the Colliery (£11,110). Mr. J. W. Holbrook, architect.

Silksworth.—House, Margate Street, for Messrs. J. & W. Hodgson.

South Shields.—Synagogue, Wharton Street (£12,000). Mr. H. Grieves, A.R.I.B.A., architect, 63 King Street,

Wheatley Hill.—The Temperance Hall: additions. Mr. J. W. Hays, architect (of Wingate).

Whickham.—Proposed concert and picture hall, for Mr. G. H. Highton.

ESSEX.

Leigh and Thorpe Bay.—Electricity sub-stations for Southend-on-Sea Borough Council.

Tilbury.—234 Council houses, Upper and Lower Wards.

GLOUCESTERSHIRE.

Mangotsfield.—Hospital: extension for Warmley R.D.C.

Stroud.—Bakery, Chapel Street. Messrs. Poulton & Son, architects.

HAMPSHIRE.

Andover.—Seven houses for Mr. F. Sainsbury.

Basingstoke.—Thirty Council cottages, Cranbourne Lane.

Liss.—The "Spread Eagle" P.H.: alterations and improvements.

Southampton.—Hartley University College: hostel at Highfield.

HERTFORDSHIRE.

Watford.—Workhouse: Infirmary extensions (£10,000). Mr. A. O. Breeds (of Radlett), architect.

LANCASHIRE.

Ashton-under-Lyne.—Elementary Council School, Mossley Road.

Bolton.—Church, Tempest Road, Lostock, for Mr. J. Simpson.

Leigh.—Proposed 200 Council houses.

Liverpool.—Proposed Cinematograph Hall, Mere Lane and Monk Street, Everton, for Mr. W. E. Jones.

Proposed Cinematograph Hall, Picton Road and Larkfield Avenue, Wavertree, for Mr. J. Johnston.

Proposed Cinematograph Hall, Stanley Road and Leison Street, Kirkdale, for Mr. C. P. Webster.

Proposed Picturedrome, Picton and Wellington Roads, for Mr. W. J. Ewbank.

Proposed Picturedrome, 1A Overton Street, for Mr. W. H. Moulsdale.

Proposed Picturedrome, Brougham Terrace, Baker and Marsden Streets, for Mr. W. Gordon.

Proposed Picture Theatre, Stanley Road, for Mr. T. H. Hughes.

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England—*Continued.*

Lancashire—*Continued.*

Rainford.—Fourteen workmen's dwellings (£2,500).
Manchester.—Municipal School, Oxford Street, Cheetham (£8,600).
Mossley.—Union Mill: rebuilding, for Messrs. Bottomley & Sons.

Leicestershire.

Hinckley.—Council Schools: manual Centre.

Lincolnshire.

Bourne.—Isolation Hospital (£4,370).
Lincoln.—Lincoln and Lincolnshire Home: rebuilding of laundry (£1,000).
Skegness.—Beach café and shops, for Right Hon. the Earl of Scarborough.
Picture Palace and Vaudeville House, for Mr. F. Clements (£5,000).

Middlesex.

Willesden.—Secondary School for 300 places.

Nottinghamshire.

Mansfield.—Infectious diseases hospital (£5,000). Mr. Collinge, Borough surveyor.

Somerset.

Chard.—Workhouse: proposed new infirmary.
Halse.—House, Northway, for the County Council.
Taunton.—House, Leslie Avenue, for Mr. F. Handell.
House, Winchester Street North, for Mr. W. Lawrence.
Two houses, Winchester Street North. Messrs. T. Manning & Son, builders, 10 St. James Street.

Staffordshire.

Armitage.—Infants' Council School. Mr. C. Mason, contractor, 16 Albion Street, Rugeley (£1,425).
Burslem.—Temperance billiards hall, Cleveland Street and Bourne's Bank (for twelve or fourteen tables), for Mr. Nathan Lee (of Burnley). £2,500.
Burton-on-Trent.—General Infirmary: proposed enlargement and improvements (£6,000).
Cannock.—Fifty Council houses (£8,000 to £10,000).
Mavesyn Ridware.—Council School for 128 places. Mr. E. Collett (of Colwich), contractor (£1,625).

Suffolk.

Bury St. Edmunds.—St. Peter's Church Hall. Mr. S. Naish, architect, 7 Hatter Street.

Surrey.

Kingston-on-Thames.—Tiffin Boys' School: proposed rebuilding.
Shottermill.—Public Elementary School for 350 places.
Sutton.—St. Nicholas Parish Hall, Robin Hood Lane (£1,500). Messrs. R. W. Price & Sons, architects. "Salatin," Cedar Road. Mr. F. Potter, contractor, Throwley Road.

Sussex.

Midhurst.—Electricity generating station.
Factory for the Hon. H. Pearson.
North Bersted.—Six cottages, for Westhampnett R.D.C. (£1,330).
Pagham.—Wesleyan Methodist Church, Nyetimber.
Westhampnett.—Proposed isolation hospital for tuberculosis, Summersdale.

Warwickshire.

Birmingham.—Theatre, Suffolk Street, for the Hippodrome Lessees.
Nuneaton.—Girls' High School: extensions (£8,000).

Westmorland.

Orton.—Police Station: conversion into Infants' School.
Staveley.—Infants' Council School .

Wiltshire.

Swindon.—Public Elementary School, Ferndale Road, for 420 places.

Yorkshire.

Ecclesall.—Children's hospital for the Board of Guardians (for sixty-four beds), £5,800.
Elland.—U.M. Church, Southgate (£3,500). Messrs. Wills & Sons, architects, Victoria Chambers, St. Peter's Churchyard, Derby.
Greasborough.—Tram sheds, for Rotherham Corporation.
Halifax.—House, West Vale. Messrs. Holton & Fox, architects, Corporation Street, Dewsbury.
Hinderwell.—Six houses, Runswick Road, for Captain G. Mann.
"Glaisdale House": addition for Mr. R. Harrison.
Villa, Runswick Bank Top, for Miss E. A. Stephenson.
Holywell Green.—County School.
Leeds.—Cinema Theatre, Briggate (for 1,000 sittings). Mr. G. M. Scott, architect, Standard Buildings, Park Row (£16,000).
Loftus-in-Cleveland.—Proposed police station. Mr. W. H. Brierley, F.R.I.B.A., County architect, 13 Lendal, York.
Skipton.—Congregational Church.

WALES.

Berriew.—Council School. Mr. G. A. Hutchins, Education Committee architect, Welshpool.
Bettws-y-coed.—County School.
Gellyfaelog.—Schools for Merthyr Corporation (£20,000).
Llandyrnog.—Proposed Sanatorium for Consumptives, Plas Llangwyfan. Mr. T. T. Rees, F.R.I.B.A., architect, 51 North John Street, Liverpool.
Penygroes.—Congregational Church. Mr. T. G. Price, architect, Cross Hands.

SCOTLAND.

Ballinluig.—Public Hall for 300 places (£600).
Blackness.—Episcopal Church (£700).
Buckie.—Fishermen's Hall: additions and alterations.
Nos. 16-18 East Church Street: alterations for Mr. J. Simpson.
Villa, Freuchny Crescent, for Mr. E. Smith.
Villa, Queen Street, for Mr. A. W. Boyd.
Comrie Castle.—Church for Dunfermline Presbytery.
Edinburgh.—Cottages, off Haymarket Terrace, for Messrs. James Waldie & Sons.
Four houses, Brunstane Road, Joppa, for Messrs. Brown & Grieve.
Glasgow.—Business premises, West Nile Street, for Messrs. J. Menzie & Co., Ltd.
Nos. 22 to 29 Bath Street: additions and alterations for Loyal Order of Ancient Shepherds Friendly Society.
Ploughmen's houses, Renfield Road, Shields Farm, for Clyde Navigation Trustees.
School buildings, Hathaway and Shakespeare Streets, Maryhill, for School Board.
Two workshops, Netherton Road, Temple, for Messrs. J. Colquhoun & Co.
Greenock.—Ten cottages, Border Street, for Greenock Garden Suburbs Tenants, Ltd.
Gourock.—Police Station, &c., and Burgh Chambers, Shore Street.
Oban.—Tuberculosis Sanatorium: additions and alterations.

IRELAND.

Antrim.—Unitarian Manse. Mr. W. D. R. Taggart, architect, 2 Wellington Place, Belfast.
Carron (Co. Clare).—Parochial House. Mr. A. Scott, architect, 49 Upper O'Connell Street, Dublin.
Granard.—Foresters' Hall.
New Ross.—Seventy-two labourers' cottages, for the District Council.

PATENT SPECIFICATIONS PUBLISHED. MARCH 19, 1914.

Selected and abridged by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

No. 29,485. Dec. 21, 1912.—H. B. Chess, jun., 814 Aiken Avenue, Pittsburg, U.S.A. Making of expanded metal.

1,675. Jan. 21, 1913.—J. T. Laidlaw, Holland Cottage, Hightae, Lockerbie. Latch suitable for gates, doors, windows, and the like.

1,827. Jan. 22, 1913.—N. G. Compton, Thriplands, Kensington Court, W. Manufacture of bituminous and analogous concrete.

4,720. Feb. 24, 1913.—A. I. Ostrander, 2386 Davidson Avenue, Bronx, N.Y., U.S.A. Method of and apparatus for laying concrete or asphalt paving materials.

4,859. Feb. 26, 1913.—R. E. Raxworthy, 17 Matham Grove, East Dulwich, S.E. Collapsible gates.

5,238. March 1, 1913.—Robert Hopewell, 34 Hollington Road, East Ham. Interlocking metal bars for ferro-concrete.

5,432. March 4, 1913.—V. H. Stott and Lee Schofield, Vernon Works, Lee Street, Oldham. Water heaters.

6,645. March 18, 1913.—A. K. Bamber, Waldron Edge, Duppas Hill, East Croydon. Apparatus for applying tensile and compressive tests to cement, concrete, and the like in briquette form.

17,702. Aug. 1, 1913.—Curt Muller, 42 Heine-Strasse, Berlin-Nowawes, Germany. Arrangements for the ventilation of halls, rooms, and other buildings.

Panel in Chamber, Londonderry Guildhall.

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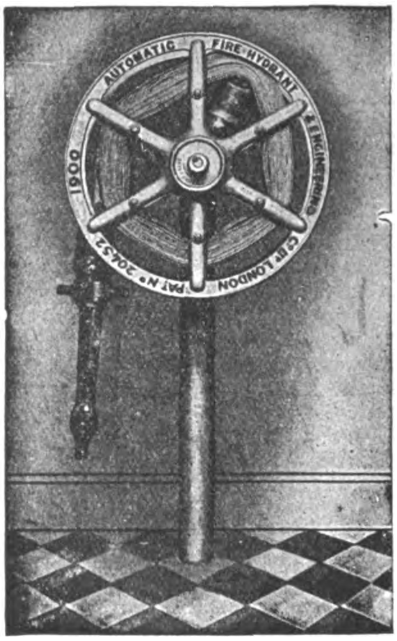

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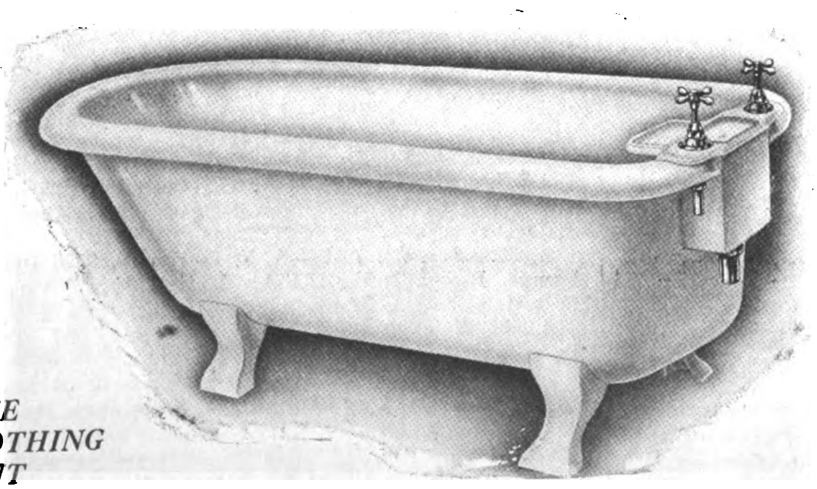

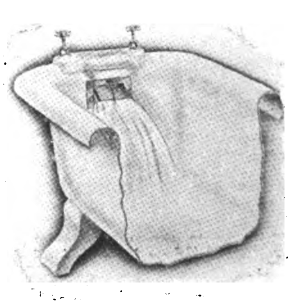

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20,366. Sept. 9, 1913.—Leopold Eckinger, Dornach, Kanton Solothurn, Switzerland. Bricks and artificial stones.

21,218. Sept. 19, 1913.—R. Waygood & Co., Ltd., and R. F. Carey, all of Falmouth Road, Great Dover Street, London. Construction of safety appliances for lifts.

8,875. April 15, 1913.—Alfred Brunner, Rothrist, near Olten, Aargau, Switzerland. Apparatus for moulding objects in cement.

11,409. May 16, 1913.—Thos. Saggers, 13 Washington Street, Bootle. Means or device for locking or securing sliding windows together.

11,504. May 17, 1913.—Dated under International Convention May 17, 1912. E. Gelsdorf, Innsbruckerstr, 28, Schoneberg, near Berlin. Locking device for doors, windows, or the like, which device is adapted to be operated from a distance.

11,918. Aug. 8, 1913.—Edwin Goodwin, 20 Prospect Street, Lancaster. Device for keeping doors open in any position.

12,385. May 28, 1913.—Geo. Dick, Balcomie, Cameron Street, Dunfermline, Fife. Wall ties for brickwork and the like.

12,810. June 2, 1913.—Dated under International Convention June 4, 1912. T. G. Rennerfelt, 29 Timmermansgatan, Stockholm. Machines for crushing stones, &c.

13,267. June 7, 1913.—Stanley Hooton, 54 Stanley Street, Liverpool. Tool for operating and cleaning pipes, cocks, and the like.

27,651. Dec. 1, 1913.—Geo. Carter, 524 14th Avenue East, Calgary, Canada. Device for raising and lowering windows.

865. Jan. 12, 1914.—W. B. Evans, 2237 North Uber Street, Philadelphia, U.S.A. Lids for stoves, ranges, and the like.

962. Jan. 13, 1914.—Alf. Cooksley and Oscar Schlegel, 21-25 Tabernacle Street, E.C. Combined joint and hollow chisel mortising machines.

21,834. March 15, 1913.—Watler Kaempfe, Grossenhain, Saxony. Process for the manufacture of oil varnish substitutes from animal oils.

21,947. Sept. 29, 1913.—Hermann Althoff, 282 Nordstr, Aumund, near Vegesack, Germany. Machines for moulding tiles.

24,227. Oct. 25, 1913.—H. J. Spratt, Ensign Works, Clifford Road, Walthamstow, and Houghtons, Ltd., 88 High Holborn, W.C. Tee squares, straightedges, or the like.

14,070. June 18, 1913.—R. W. Frost, jun., May Villa, King's Hill, Wednesbury, Staffs. Traps for sinks, drains, and the like.

15,259. July 2, 1913.—Dated under International Convention Aug. 5, 1912. Otto Schumann, Lehmgrubenstr 68, Breslau, Germany. Electric alarm for preventing the unauthorised opening of locks.

9,231. April 19, 1913.—James Puken, The Square, Port William, Wigton, Scotland. Pipe joints.

12,333. May 27, 1913.—Dated under International Convention May 27, 1912. Fridolin Weber, Wagenhausen, Thurgau, Switzerland. Hinges for doors, windows, and the like.

22,409. Oct. 4, 1913.—Philipp Gelius, 2 Albanistr, Munich, Bavaria. Method of constructing foundations and the like.

Any of the above specifications may be obtained from J. D. Roots & Co.

The Secretary for Scotland has sanctioned the borrowing of £50,000 for extensions at Greenock gasworks. The improvements include a new system of vertical retorts.

The Incorporated Church Building Society held its usual monthly meeting on the 19th inst., at the Society's house, 7 Dean's Yard, Westminster Abbey, S.W. Grants of money were made in aid of the following objects—viz.: Building new churches at Droylsden, St. Andrew, near Manchester, £175; Hove, St. Thomas, £150 for the first portion, and Ilford, St. Luke, Essex, £200 for the first portion; and towards enlarging or otherwise improving the accommodation in the churches at Barking, St. Paul, Essex, £75; Bilsby, Holy Trinity, Lincs., £50; Blackford, Holy Trinity, Somerset, £25; and Long Melford, Holy Trinity, Suffolk, £30. In addition to this the sum of £365 was paid towards the repairs of seventeen churches from Trust Funds held by the Society. The Society likewise accepted the trust of a sum of money as a Repair Fund for St. Mary's Church, Garthorpe, Lincs.

Correspondence

[The Editor will not be responsible for the opinions expressed by Correspondents.]

Southampton Bargate.

Sir,—I have read a paragraph in *The Architect* of March 20 which requires some reply. No one would wish to see the old Bargate removed, were it not for the excessive obstruction it causes to the modern traffic. I knew Southampton sixty years ago, but how different it is now. In those far-off days there were no trams, no motor-cars, no army of cyclists, in addition to the ordinary traffic, to pass all the day long through one narrow archway.

Some relief is really necessary to ease the immense traffic of the present day. The question, of course, is how to bring about this relief. Many would wish the Bargate removed altogether, at least from its present position, like Temple Bar was removed in London to make room for the traffic; this would be the easiest and cheapest way to get rid of this excessive obstruction to the Southampton traffic. But it is not, as you state, from a sense of unwise parsimony that it is suggested that the Bargate should go—nothing of the kind; it is on account of the very great expense it would entail upon the town to construct roads on both sides. It would cost possibly £50,000, for houses would have to be taken down, and compensation would have to be given. All this would mean the increase of the rates for years, and the rates at present, including water rate, are 9*s.* 4*d.* in the £; moreover, in this borough new buildings are very highly assessed. It is all very well for some local antiquarians and persons in England who are "gone" on antiquities to talk against the removal of the Bargate, but *we* have to keep an eye on being excessively rated, and surely the interests of those who are so much inconvenienced in their business must be consulted. Two roads are out of question on account of the cost. Personally, I do not think that the road made to the west would be a success, as it would, I feel confident, cause very great inconvenience to the thousands and thousands of pedestrians who daily pass up and down on that side.

The most practical plan is to remove the Bargate. Besides, I cannot in the name of fortune understand why we, who are living in the twentieth century, should be inconvenienced by a gate built in the fourteenth century, when such street traffic as we now have daily was quite unknown.—I enclose my card.

A Resident of Southampton.

March 23, 1914.

In the Fine Arts Palace of the forthcoming Anglo-American Exposition at Shepherd's Bush, W., which is to be open from May to October this year, there will, in addition to the collection of British paintings, be three sections devoted to the Fine Art of America. These will be made up of exhibits of American artists residing in the United States, American artists residing in Paris, and American artists residing in London. There are separate committees for dealing with each of the sections, and that for the American artists residing in London is composed of Messrs. Paul W. Bartlett, J. McClure Hamilton, Joseph Pennell, and J. S. Sargent, R.A., the committee being presided over by Mr. Sargent. The honorary secretary of the American section is Mr. Joseph Pennell, and he desires it to be made known that any American artists in London not having received an invitation to exhibit can receive full information as to conditions of exhibition on application by post to him at his address, 3 Adelphi Terrace House, Robert Street, Strand, W.C.

The Scottish National Repertory Association are endeavouring to raise funds for the erection in Edinburgh of "a small theatre with an auditorium not exceeding 500 seating capacity, and to have it designed with simple, good taste, comfortable in seating, and pleasant to the eye, but free from the ornate rococo manner of theatres in general, which is expensive without any compensation in beauty or use." It is suggested that the seating accommodation be arranged as follows: That the floor be divided into two classes of seats—150 at 3*s.*, 114 at 2*s.* The gallery also to be divided into two classes—100 at 1*s.* and 100 at 6*d.*

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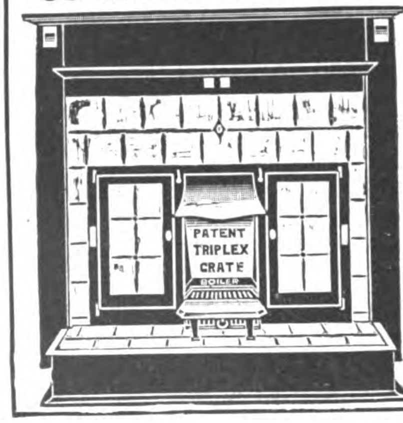

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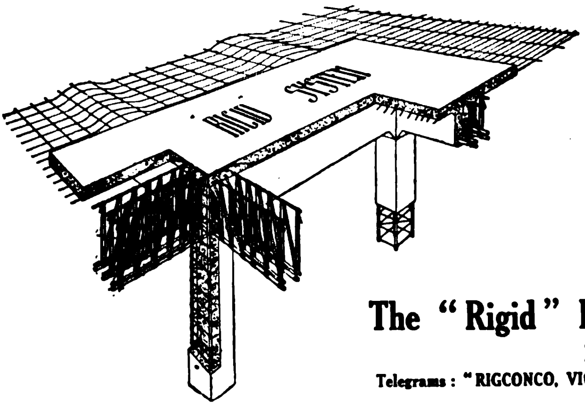

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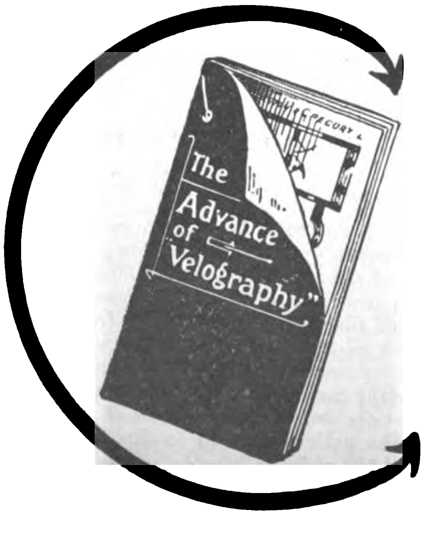

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FORTHCOMING EVENTS.

Friday, April 3.

Royal Sanitary Institute : Sessional meeting at Southampton (two days).

Monday, April 6.

Royal Institute of British Architects : Paper, entitled "London's Bygone Building Acts and the Development of London," by Mr. W. R. Davidge, A.R.I.B.A., at 8 P.M.

Society of Engineers : Ordinary general meeting at the Institution of Electrical Engineers, at 8 P.M.

Tuesday, April 7.

London Society : Ordinary general meeting at the Royal United Services Institution, at 8 P.M.

Thursday, April 9.

Architectural Association Camera, Sketch, and Debate Club : Easter excursion to Long Melford and district (April 9-13).

LONDON BUILDING TRADES DISPUTE.

IN the statement of their case which has been issued on behalf of the master builders by the London Master Builders' Association, the essential point appears to be that the master builders have for their object the preservation of the sanctity of agreements made and entered into by the accredited representatives of both sides, masters and workmen. The strength of this position is obviously unassailable. It is perfectly clear that if agreements are made by accredited representatives, their whole value is at an end if the constituents of either one or other group of representatives are to be at liberty to treat as "not operative" any single clause of the agreements made on their behalf. When it is necessary for bargains to be made, there are only two methods—collective bargaining and individual bargaining. It is an essential feature of the former that bargains made by representatives shall be observed by those represented, and the allegation of the masters that bargains so made have not been so observed in the London building trades can hardly be disputed.

As stated by the masters, it appears that about a year ago the various unions in the building trade of London presented a demand for an advance in wages. The employers conceded in many cases 1d. an hour, and in other cases ½d. an hour, and new working rules were agreed, and after submission to a ballot of the workmen, signed accordingly by the representatives of the London Master Builders' Association and the trade-unions. It is important to note that the agreement to the new rules by the representatives of the trade-unions was made only after a ballot of their constituents. It cannot, therefore, be alleged that the trade-union leaders were misrepresenting the members of the unions, or exceeding their powers. Not only the leaders but, we must understand, a majority of the workmen, agreed to accept the new rules.

Amongst other matters, these signed agreements, we are told, provided that no strike should take place without reference to Conciliation Boards, and that no workman should be placed under any disability, whether he belonged to a trade-union or not. What were the reasons that induced the workmen to accept these conditions we do not know, but we can quite understand that results would follow from that acceptance which would strike terror into the hearts of the trade-union leaders.

The building trade, both in London and the provinces, has always been remarkable for the very large proportion of workmen who have remained outside the unions. Partly, if not entirely, this is due to the nature of employment in the building trades. This is of the nature of "seasonal employment" for very many, and for some —and by no means a small number—we might almost say "casual employment." Very few, comparatively, of those workmen employed in the building trades are in full employment from year's end to year's end. It can be readily understood that the casually and seasonally employed workmen would, very largely, be non-members of the trade-unions, both because they would be little able to afford the subscription, and because the unions would scarcely be eager to enrol members who would be a heavy drain on their resources for out-of-work pay.

This normal condition of the building trade, which has rendered utterly unreliable as evidence of unemployment the Board of Trade figures, based on the returns of the trade-union membership and so frequently quoted in the House of Commons, has been, no doubt, intensified during the past year by the operation of the Insurance Act.

Workmen in the building trades are not fools, as we, who have to deal with them daily, know very well; and it must surely have occurred to many of them that with unemployment benefit and sickness benefit provided, or presumed to be provided, by the Government, there is not much that a trade-union can do for them except organise strikes. They see also that the non-union workmen get the advantage of increased wages and shorter hours in their respective trades just as fully as the subscriber to the trade-union funds. Hence we have little doubt there have been numerous defections from the trade-union membership.

On the other hand, those who still remain members of the unions may naturally—we had almost said justifiably—feel aggrieved that non-subscribers to the unions should reap the benefits for which the unions fought. Hence these men would be ready to join in the sectional or "lightning strikes" which, the masters tell us, began on various contracts throughout London against the employment of non-union workmen shortly after the agreement came into force providing for increased wages, the freedom from disability of non-unionists, and the reference to Conciliation Boards of all debatable questions before strikes were commenced. We fear that there can be little doubt that these "lightning strikes," though described as "not official," were connived at, and in some cases abetted by, trade-union officials.

The masters, having found by experience that agreements made as the result of "collective bargaining" were "not operative," and that the trade-unions would not consent to furnish effectual guarantees that in the future trade agreements should not be violated, can scarcely be blamed for making an attempt to substitute individual bargaining for collective.

In so doing the master builders have been charged with attempting to smash the trade-unions, and there is this amount of plausibility about the charge that if individual bargaining became the universal rule, the *raison d'etre* of the unions would be clean swept away, for, as a result of the Insurance Act, nothing now remains as a reason for the existence of a trade-union in the building industry but to act as a medium of collective bargaining. There can be no doubt, however, that the London Master Builders' Association would infinitely prefer to deal with trade-unions, which could, in collective bargaining, make agreements for their members, and ensure the validity of those agreements rather than see the principle of individual bargaining universally established.

We pity the position of the officials of the trade-unions. They seem to us to be between the devil and the deep sea. The continued existence of the unions and the salaries of their officials depend upon the efficacy of collective bargaining, but the agreements made by such bargaining must result, with the help of the Insurance Act, in the diminution of the power and wealth of the unions. Thus in either event the outlook is bad for the unions and for the salaries.

The present strike has not yet hit the public hard. Not only do a large number of workmen in the building trade abstain from membership of the unions, but a considerable body of master builders, and particularly the smaller men, remain outside the London Master Builders' Association.

NOTES AND COMMENTS.

The Town Council of Southampton have discussed at length the proposed removal of the famous Bargate of the town, but have only arrived at the conclusion to continue the discussion after an adjournment for a fortnight.

The walls of the city of York are of more than merely local interest, and we are glad, therefore, to hear that there is a prospect of a further extent of them being opened to view. Some old cottages are to be demolished, and the owner proposes to build new shops in their place, but is prepared to facilitate the acquisition of the property by the Corporation, both by reducing the price and by making a donation to the fund now being raised by Mr. Richard Thompson, J.P., and Dr. Evelyn. If the old cottages are demolished a round tower, which is at present hidden behind the buildings, will become visible.

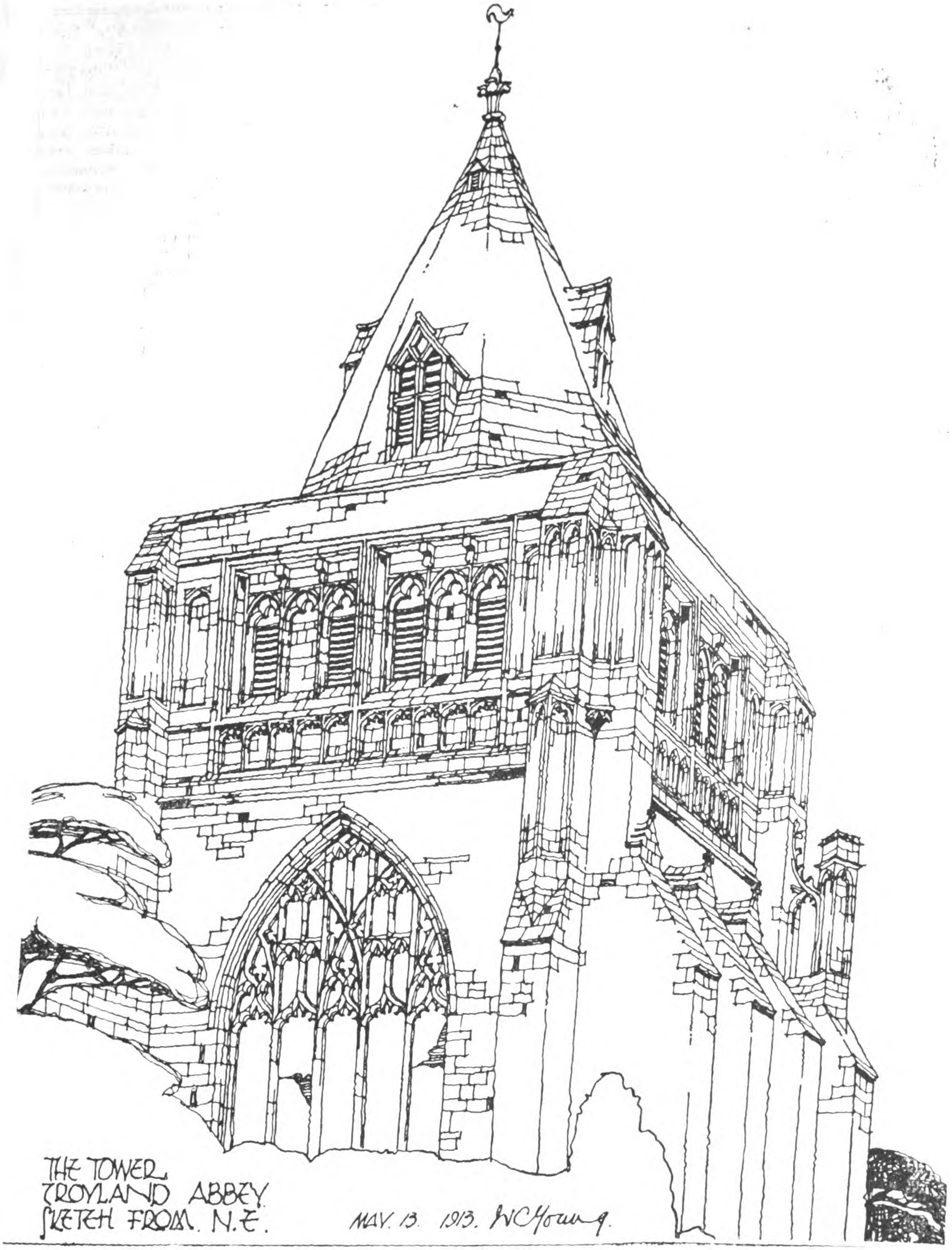
At a recent meeting of the Legislative Council of India Lord Hardinge, the Viceroy, spoke at some length on the subject of the new Delhi, stating that he had received Lord Crewe's special permission to do so. He explained that the estimates were now on their way home, but the publication of figures in no way committed Lord Crewe to their acceptance. The Viceroy said frankly that the original estimate of £4,000,000 was an under-estimate. The latest figures gave a total of £5,113,620 as the cost of the new capital, including roads, parks, irrigation, and lighting, while the Government had decided to hold an extra sum of £1,000,000 in reserve for contingencies and unforeseen expenses. The necessary buildings would cost 360 lakhs. Half a million sterling had been allowed for Government House with a Council Chamber, and three-quarters of a million sterling for secretariats. The estimates excluded a provision for a new military cantonment.

Mr. E. B. Havell, in lecturing at Carpenters' Hall on "Indian Buildings," once again championed the vitality of native craftsmanship in Indian architecture at the present day. He said that the most vital fact with regard to Indian architecture and that which was most important to the European student was this, that in India the craft traditions, which in England were represented only by the names of the City Companies, had been handed down from generation to generation ever since the dawn of civilisation. The significance of this as bearing on Indian architecture was suggested by the fact that in the great pottery industry of Staffordshire, in spite of efforts to reduce the science to a mechanical process, the potter who could trace back his ancestry to three or four generations of craftsmen in his own vocation was worth two of those who began their career with no such craft pedigree. Tracing the early beginnings of Indian architecture to the third century before Christ, the lecturer declared that it had been influenced less by foreign work than had most of the great architectural schools of Europe. In India there had never been any artificial distinction between fine art and decorative art, and the best master builder was also the best sculptor.

A Roman pavement has been discovered in the course of excavations for the foundations of new premises at Gloucester. The president of the Bristol and Gloucestershire Archæological Society (Canon W. Bazeley) has declared it to be one of the finest pieces of Roman pavement in this country for size, richness of colouring, and excellence of preservation. With the exception of a corner which appeared to have been destroyed many years ago for the purpose of installing a smelting furnace the pattern of the pavement has only been defaced in a few small patches. The pavement is pronounced to be the work of the second or third century, for the reason that it bears the stamp of the highest perfection in this particular form of art, which marked a decline in the fourth century. The pattern is worked in mosaic, blue lias, white flint, and red brick being used, and the colouring, especially the rose-red tones, are said to excel even those in the famous Woodchester pavement. There is a wide border comprising five lines of alternate blue and white stones, each band being six stones wide. Inside this is a rope-work border in three colours, and the centre is made up of a large variety of geometrical designs in varied angular frames. Upon the pavement were found some pieces of the walls of a Roman villa, which still retain the original colourings of green, red, and white plaster facings. A large quantity of human bones have also been dug out near the site of the discovery.

We learn that Messrs. Batsford will publish on April 23 Mr. A. E. Richardson's folio volume entitled "Monumental Classic Architecture in Great Britain and Ireland during the Eighteenth and Nineteenth Centuries." The purpose of this book is to direct attention to the monumental qualities and academic aspect of English Neo-Classic architecture, which from the period of its inception, at the beginning of the seventeenth century, until a comparatively recent date, shows a record of continuous development. It is profusely illustrated by examples from all parts of the kingdom. From the specimen illustrations that accompany the prospectus Mr. Richardson's book seems to us to promise an exceptionally valuable addition to the records of our national architecture.

Attention is drawn to a slight change in the programme of the R.I.B.A. sessional meetings. The paper by Mr. W. R. Davidge (A.), on "London's Bygone Building Acts and the Development of London," will be read on April 6, instead of April 20, and the Practice Committee's paper will be read on April 20. The subject of the latter paper will be "Professional Practice," to be read by Mr. Max Clarke (F.), Vice-Chairman of the Practice Standing Committee.


THE TOWER
CROYLAND ABBEY
SKETCH FROM. N.E.
MAY. 13. 1913. W C Young.

FROM DRAWINGS SUBMITTED FOR THE PUGIN STUDENTSHIP, 1914.—By Mr. W. CECIL YOUNG (*Holder*).

LONDON COUNTY COUNCIL.

BUILDING LOCK-OUT.

THE effect of the building lock-out on the London County Council's building contracts was responsible for a great deal of discussion at the County Hall on Tuesday last. The subject was opened by a question addressed to the Chairman of the Establishment Committee by Mr. J. D. Gilbert, who asked what effect the lock-out was having on the construction of the new County Hall, during how many weeks the work had been stopped, and what action the committee proposed to take in order to endeavour to get the work advanced?

Mr. Debenham (Chairman of the Committee) replied that the present labour disturbance had reduced the number of men employed on the building from 555 to 76. The work had been stopped for nine weeks, and until a normal condition of things had again been reached the delay in the completion of the work could not be estimated. The committee were considering the question of expediting the execution of the contract.

Mr. Phillimore asked the Chairman of the Education

Committee whether he would inquire into an allegation that a contractor for the enlargement of a Council school had brought in workmen from outside the county, and was feeding and lodging them on the school premises?

Mr. John W. Gilbert stated, in reply, that inquiries had been made of the contractor and the clerk of works on the site, and the allegation was said to be unfounded.

Replying to a further question as to the arrangements being made for overcoming the difficulty in connection with painters' wages, Mr. Gilbert said he must ask for notice of the question.

Later in the Council's proceedings the Education Committee recommended the acceptance of a tender amounting to £17,167 for the remodelling of one of the Council's schools. On this Mr. George Dew took the opportunity of raising a general discussion on the whole question of the building lock-out as it affected the Council. He objected to the committee's recommendation, and moved that the report be referred back to the committee, with instructions to readvertise for tenders from firms who had not locked out their workmen. The committee's recommendation was farcical, asserted Mr. Dew, because it was obvious that the firm to whom it was proposed to allot the contract was not in a position to proceed with the work at all.

A suggestion was ultimately made that the Chairman of the Council might perhaps succeed in bringing the opposing parties together, and securing a settlement of the difficulty so far as the Council's work was concerned, without in any sense intervening on the question of the lock-out as it affected the trade generally.

The Chairman intimated his willingness to act in that direction if it were desired by the Council, but as a result of further discussion it was finally decided that the committee's report should remain inoperative for one week, the Chairman undertaking in the interval to prosecute inquiries as to whether or not the work could be entrusted to a firm who were in a position to proceed at once.

COMPETITION NEWS.

Brighton.—In the competition for the proposed clock tower, Queen's Park, the Town Council have accepted the design of Mr. Llewellyn E. Williams, A.R.I.B.A., 4 Coleman Street, London, E.C. The design of Mr. Charles H. Rose, A.R.I.B.A., of No. 61 Pepys Road, Wimbledon, London, S.W., has been placed second in order of merit. Sixty designs were sent in, and the six selected designs can be seen at the Town Hall, Brighton, during the week commencing April 6 next.

Durham.—The Board of Guardians have appointed Mr. Segar Owen, Warrington, assessor in a proposed competition to obtain plans for a new hospital. The following six firms will be invited to submit designs: Messrs. H. T. Gradon, Durham; J. G. Burrell, Durham; J. H. Morton, South Shields; W. & T. R. Milburn, South Shields; Newcombe & Newcombe, Newcastle-on-Tyne; and J. W. F. Phillipson, Newcastle-on-Tyne.

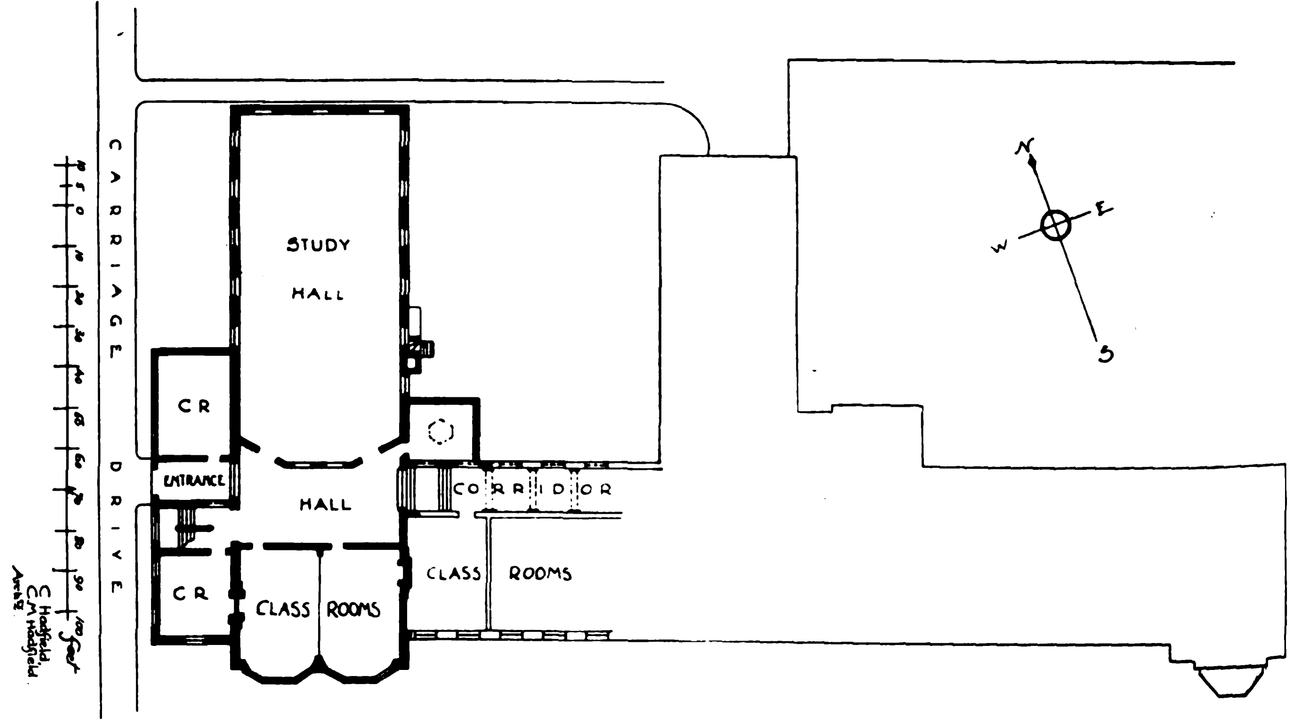
Manchester.—The Sanitary Committee having been denied the authority to obtain competitive plans for fifty semi-detached cottages, suitable for erection on the Corporation Blackley estate, have resolved (subject to the City Council's approval) that designs be invited by public advertisement from architects for two pairs of semi-detached cottages, to be constructed of either brickwork or concrete, to let at a rental of 5*s.* 6*d.* and 7*s.* 6*d.* per week respectively, suitable for erection on the Blackley estate, and that prizes be offered as follows—viz., £50 for the best designs and £25 for the second-best designs, each design to be accompanied by a specification and estimate of the cost, and the prizes to be withheld unless a bona-fide tender can be obtained for the carrying out of the work at a cost within 10 per cent. of the estimate of the architect.

Newcastle-on-Tyne.—The New Town Hall Committee of the Corporation on Tuesday again discussed the question of a site for new municipal buildings. It was decided to recommend the City Council to agree to the Eldon Square site, and to offer a premium of £500 to architects for plans for the laying out of the grounds for a town hall and municipal offices.

ILLUSTRATIONS.

MOUNT ST. MARY'S COLLEGE, CHESTERFIELD.

These illustrations show the extensions recently made to the above college, and comprise a new study hall 85 feet by 40 feet, class-rooms and entrance hall, with dormitories over.


CARRIAGE DRIVE
STUDY HALL
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ENTRANCE
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CORRIDOR
CLASS ROOMS
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10 5 0 10 20 30 40 50 60 70 80 90 100 feet
C Hadfield, C M Hadfield, Archts.

Reinforced concrete construction has been made use of in the flooring, staircase, cistern tower, and mansard roofing. Additional dormitory and lavatory accommodation has been secured by raising portions of the old buildings, which were erected about forty years ago from the designs of the late Henry Clutton.

Weldon stone with thin red facing bricks on a gritstone base have been used externally, the belfry stage of the tower being in granolithic masonry. The reinforced concrete flooring and construction have been executed by Stuart's Granolithic Co., Ltd., on the Wells system.

The entrance doorway (illustrated) has a coloured faience tympanum, executed by Messrs. Doulton & Co., the subject being "Our Lady of the Mount," the patroness of the college.

Messrs. W. & A. Forsdike, Ltd., of Sheffield, have carried out the study hall block, and Messrs. Atkinson & Sons, Ltd., Leeds, the raising of the older buildings, from the designs of Messrs. C. & C. M. Hadfield, the architects.

Mr. Lewtas has acted as clerk of works.

THE ARCHITECTURAL ASSOCIATION.

The final ordinary general meeting of the present session of the Architectural Association was held at Tufton Street, Westminster, on Monday last, March 30. Mr Maurice E. Webb, M.A., Vice-President, occupied the chair.

It was announced that a special general meeting will be held on April 27 at 5 p.m., when an alteration in the by-laws will be proposed which has for its object to provide for a new class of members—viz., country members.

The Secretaries presented their report in connection with the election of officers and Council for session 1914-15.

House List.

President.—Maurice E. Webb, M.A.

Vice-Presidents.—G. Leonard Elkington, A.R.I.B.A., and H. Austen Hall, F.R.I.B.A.

Ordinary Members of Council.—Cecil C. Brewer, F.R.I.B.A.; F. Dare Clapham, F.R.I.B.A.; Edwin Gunn, A.R.I.B.A.; E. Stanley Hall, M.A., A.R.I.B.A.; Ralph Knott; P. Cart de Lafontaine; A. G. R. Mackenzie, F.R.I.B.A.; F. Winton Newman, F.R.I.B.A.; W. G. Newton, A.R.I.B.A.; and A. Gilbert Scott.

Past President.—W. Curtis Green, F.R.I.B.A.

Hon. Treasurer.—Stanley Hamp, A.R.I.B.A.

Hon. Editor "Architectural Association Journal."—J. Alan Slater, M.A., A.R.I.B.A.

Hon. Librarian.—F. C. Eden.

Hon. Secretary.—H. M. Fletcher, F.R.I.B.A.

A vote of thanks was passed to her Grace the Duchess of Sutherland for kindly granting permission for members to visit St. Serf's House, Roehampton, and to Sir Stephen and Lady Gatty for entertaining the party at Downshire House, Roehampton; also to Mr. Frank Chesterton, architect of the above houses, for arranging the visits, and to Mr. E. L. Lutyens for arranging a visit to Roehampton House on the same day.

Mr. H. M. Fletcher then proposed a vote of thanks to the retiring officers and members of the Council. He said he would like to make it quite clear that their regrettable retirement was in no sense penal, but was merely due to an effluxion of time.

Mr. G. Leonard Elkington seconded the vote, which was carried unanimously.

Two new members were elected, viz. Mr. R. Marchant (Bedford Square, W.C.), and Mr. J. S. Milner (Parson's Green).

Mr. J. Alan Slater proposed a vote of thanks to the professional Press.

Mr. Maurice E. Webb, in introducing the business of the meeting, said he believed it was the first time there had been brought together a really representative exhibition of work by Messrs. Bodley & Garner and Mr. John F. Bentley. The latter they owed to the great trouble taken by Mrs. Bentley and her son. To Mr. Garner and to Mr. Cecil Hare, Mr. Bodley's partner, their thanks were due for the collection of drawings and photographs of Messrs. Bodley & Garner's work hung round the walls. Mr. F. C. Eden would read a paper, illustrated by a large number of lantern slides, on Messrs. Bodley & Garner. A paper on Mr. Bentley's work was to have been read, but, unfortunately, Mr. Bentley's son had been prevented by pressure of other work from collecting the necessary material.

Mr. F. C. Eden's paper.

The Work of Bodley & Garner.

The accusation of copyism has been so often brought against the Gothic Revival that many believe it to be justified, in spite of the fact that the alleged fraudulent antiques could deceive none but the most ignorant. The art of these two gifted men, though it makes full and avowed use of the Gothic machinery, just as Milton and Wren made use of the classical machinery for their purposes, is in no sense open to this charge.

At this time of day I believe some apology for Gothic is expected of one. It is out of date; cusps and crockets are *demodes*, while acroteria and antefixæ are quite up to date. This is the swing of the intelligent pendulum. But one can only judge works of modern art by the standard of the time which produced them; and half a century ago it was not the fashion either to patronise Westminster Abbey or to admire St. Pancras Church.

Mr. Bodley's earliest works, St. Michael's, Brighton, and St. Martin's, Scarborough, were produced in an excusable state of reaction against the influences at work in Sir Gilbert Scott's office, where he had served his pupilage, and betray a rather stiff though not exactly immature manner. The latter church is notable for the collaboration of Rossetti, Morris, and Madox Brown in the decorative details. But his fully developed style, from which he never afterwards departed, first appears in the simple but very sumptuously fitted and decorated church of St. John, Tue Brook, Liverpool, built in the year 1866, about the time when he took Mr. Garner into partnership.

The work of these artists falls naturally into four periods—(1) before the partnership, when Mr. Bodley was working alone, and produced, in addition to the churches mentioned above, St. Salvador's, Dundee, and some small houses at Malvern Link, which are interesting as perhaps the earliest examples of revived Georgian; (2) after he was joined by Mr. Garner, when the partners were collaborating in intimate association, say, roughly, from 1866 to 1884. During this, which may be called the culminating period, the following were the chief works produced: The churches at Hoar Cross and Pendlebury; work at Christ Church, Oxford; and the School Board offices; (3) about the year 1884 the dual authorship ceased, the partners having agreed that each design must be the work of one mind; and thenceforward the share of each in the work of the firm becomes distinct and easily separate. Mr. Bodley's churches at Clumber, Epping, Danehill, Hackney Wick, and Cowley belong to this period, as do the following works of Mr. Garner: The St. Paul's reredos; St. Michael's, Camden Town; St. Swithin's Buildings at Magdalen College, Oxford; the magnificent design submitted in the first abortive competition for Liverpool Cathedral, and Lord Plymouth's great house, Hewell Grange; (4) lastly, after the definite dissolution of partnership, when Mr. Bodley carried out a large number of churches and made designs for cathedrals at Washington and San Francisco, upon which last he was working at the time of his fatal illness.

The early 'seventies are conspicuous in the annals of church building for the erection of the two most remarkable churches which have been built since the time of Wren—viz., Hoar Cross and Pendlebury. The former is a country church standing among trees on the edge of a park, built by Mrs. Meynell Ingram as a memorial to her husband. To anyone familiar only with the ordinary ruck of Gothic Revival work it comes as a revelation. It is impossible to believe that this refined and poetic creation is contemporary with the masses of figure and sterile stuff which mark the mid-Victorian era.

St. Augustine's, Pendlebury, is situated not amid trees and grass, but in a Manchester suburb. It is a simple, lofty parallelogram, dominating by sheer bulk the flat squalor of its surroundings as perhaps no more complicated building could do. It was one of the earliest buildings in which the foreign system of passage aisles through internal buttresses was adopted, and remains the most successful.

Clumber is the first church of importance which Mr. Bodley carried out after the partners had agreed to work independently. It is a small cruciform building surmounted by a lofty spire of red stone, and rises with quiet dignity out of the level turf of the Duke of Newcastle's garden.

In the time at my disposal it is only possible to indicate in the most summary fashion the peculiar qualities of Bodley & Garner's work.

First, I should place excellence of proportion, a quality in which it hardly ever fails; and next, dignity and repose. There are no signs of strife and struggle, of a desire to command attention by shouting or preaching which marks so much contemporary work; it is always gentlemanly. Further, I would note the care bestowed upon the minutest detail; their absolute indifference to changing fashions; and lastly, their signal achievement in colour decoration, the side of his work in which Mr. Bodley took the greatest delight, and in which he stood absolutely unrivalled. It was his sensitiveness to colour effects that caused him to realise early in his career, as his more prominent contemporaries never did, that bare brick is as impossible for a church interior as it would be for a drawing-room if any decorative refinement is to be obtained. He felt that such rough-and-ready colour effects as are to be got by diapering walls with stripes and zigzags of variegated brick, though suitable enough externally, are far too geometrical and coarse to be satisfactory indoors.

Another matter, perhaps a small one, in which they were in advance of their contemporaries is the following: It used to be laid down as axiomatic that the wooden and other fittings of a church must be of the same period as that to which the structure was supposed to conform. I remember a lecturer solemnly declaring, "I would not go so far as to say that if you are designing a Norman church your furniture should be strictly Norman, but short of this it must agree in the period with the building to which it belongs."

Though the bulk of their church work was based upon fourteenth-century or Decorated Gothic, Bodley & Garner saw clearly that it was not until the Perpendicular period that the mediæval craftsmen fully understood the capabilities of woodwork, and so for their stalls, screens, and other fittings they always adopted the later treatment.

If one were to attempt to assess the contribution of each of the partners to joint result, I think the following may be accepted as a fair estimate:—

The poetic ideals, the sensitive and refined perceptions of Mr. Bodley were complementary to the executive ability, the industry, and scholarly knowledge of his partner, and as a result their best works were produced during the period when they were in the closest collaboration, and when interaction and advice were most constant and intimate. Without Mr. Garner's help Mr. Bodley's works sometimes show a contented reliance on certain simple effects of which he well knew the secret, effects which did not require any specially laborious working out. Without Mr. Bodley, Mr. Garner's exhibit an occasional coarseness of detail, and a tendency to over-reliance on precedent. Each lacks the corrective criticism and suggestion of the other.

The evening concluded with an examination of the numerous photographs and drawings of the work of Messrs. Bodley & Garner and the late Mr. John Bentley—the latter included numerous models in plaster of his architectural sculpture.

ASPHALTES: THEIR ORIGIN, COMPOSITION AND MINUTE FEATURES.—II.

By James Scott.

Rock asphalte is now being mined in large quantities after the manner of coal. In this case it has been proved that the origin differs from that of the asphalte dealt with in Chapter I. For the purpose of properly investigating the subject Messrs. Briggs & Co., Ltd., of Dundee, kindly supplied me with a sample block of their estimable rock asphalte. This substance is practically black, and is very hard and glossy, but can be chipped or cut by means of a sharp knife. The exposed surface is at first greyish, but gradually darkens within a few hours until its hue matches the remainder.

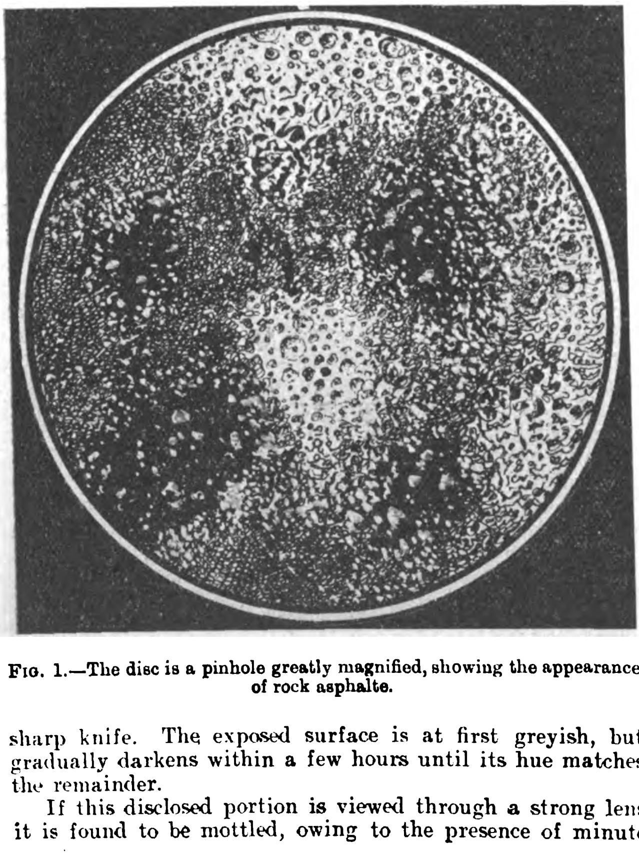

Fig. 1.—The disc is a pinhole greatly magnified, showing the appearance of rock asphalte.

If this disclosed portion is viewed through a strong lens it is found to be mottled, owing to the presence of minute specks of limestone and-sandstone, scattered among the bituminous portions. Speaking in a plain manner, the limestone, sandstone, and bitumen are so intimately blended as to constitute one substance; yet when magnified it appears as in fig. 1.

To properly understand the other information it will be necessary to say a few words about the extinct *Lepidodendra*, great trees which flourished during the carbonaceous period when the vegetation which now forms the bulk of our coal was alive.

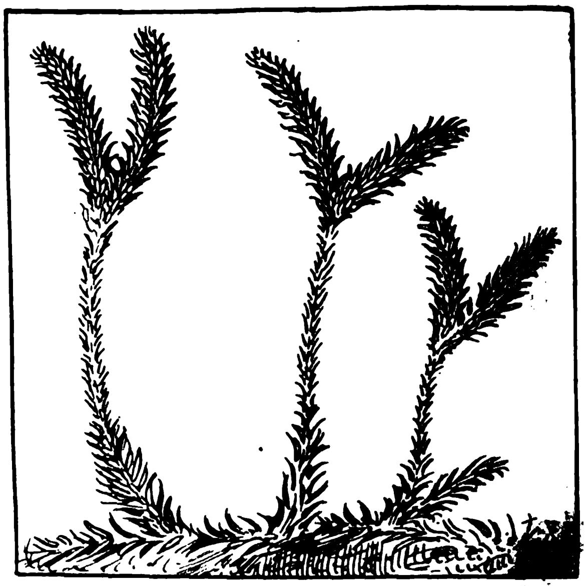

Fig. 2.—The club moss, Lycopodium clavatum, from which the powder Lycopodium is obtained. Here shown exactly life size; stems 2 inches long; fertile spore heads, 1 inch.

The *Lepidodendra* had scaly bark not unlike that of palm trees of the present day, and from each scale there grew a long, narrow blade-like leaf. The leaves, by overlapping closely in an upright direction, gave the trees a bristly appearance, resembling that of the "monkey-puzzle" tree often seen in gardens in this country. The leaves gradually fell off, leaving the trunk naked. The upper branches were bristly to a very conspicuous extent.

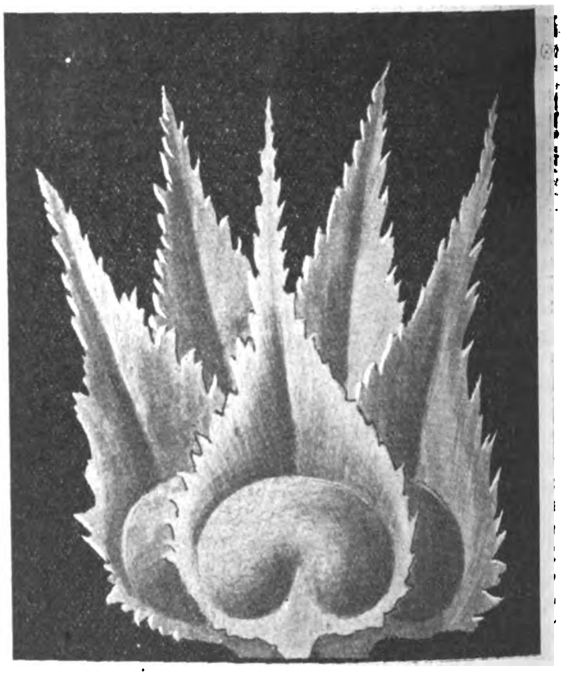

Fig. 3.—Some magnified spore cases, which form the club at the summit of a stalk of Lycopodium. The sporangium, or spore case, is the kidney shaped object, and is full of the minute spores known as Lycopodium.

The branches grew dichotomously—*i.e.* symmetrically forked. The full height of a strong, mature tree was as much as 50 to 60 feet, and the diameter 4 to 5 feet. The majority were, however, of lesser dimensions than these.

Each branch of a *Lepidodendron* terminated in the form of a swollen cone, resembling those to be seen at present on pine and fir trees. Behind each scale of a cone occurred a small pocket (*sporangium*), in which developed a quantity of pollen-like dust. Each grain of this dust was a spore or seed capable of giving rise to a huge tree. It resembled the spore dust of ferns, and it is fortunate for us that a group of plants, known as the *Lycopodaceæ*, fairly common in rocky regions, presents us with an analogous counterpart of the extinct *Lepidodendra*, although they seldom grow higher than 3 or 4 inches. They are popularly called club mosses, and are regarded as the direct descendants of the *Lepidodendra*, having gradually dwindled in size and been modified to suit altered environments and a different climate. Some of these plants are liberally branched. A specimen is depicted in fig. 2.

The club mosses have overlapping leaves (bracts), and terminate above in cone-like masses, each "scale" having behind it a pocket (see fig. 3) containing spore dust almost identical with that of the extinct *Lepidodendra*.

It is to the dust of the club mosses that I wish to draw special attention. The dust is called *Lycopodium*, or vegetable sulphur, owing to its pale yellow powdery state and its inflammability. It is used for many purposes, and particularly by pyrotechnists for their fireworks. A pinch thrown into a candle flame instantly flares up wonderfully.

Under the microscope the dust is resolved into a number of prettily shaped, meshed spores, which are the equivalents of seeds, although they are devoid of embryos. In fig. 4 some of these spores are depicted in a magnified condition.

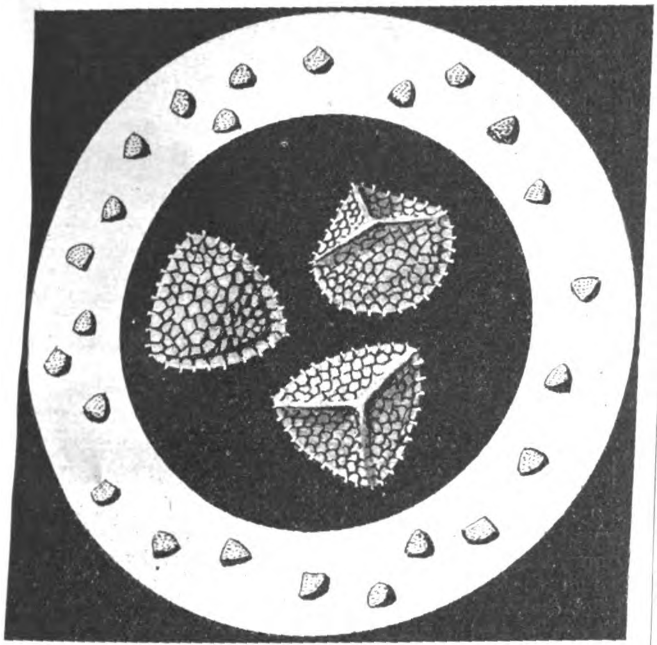

FIG. 4.—In the outer circle, which represents a magnified $\frac{1}{24}$-inch pinhole are shown some Lycopodium spores. Three of these are magnified on a larger scale in the middle circle.

Lycopodium is regarded as consisting wholly of pure bitumen, held inert and latent on account of the organised structure of the spores. It can be bought at 3*s*. per lb.

It will now be convenient to revert to the *Lepidodendra*. The spores were cast out in such tremendous amounts that a succession of great forests was ensured throughout hundreds of thousands of years. Only a few hundred spores, equally distributed, would be needed to grow a huge forest. The excess spores got blown about, and formed giant heaps, among which the *débris* of the cones fell, and in due time these have fossilised into bituminous coal.

It is a fact that nearly the whole of bituminous coal—as distinct from common coal—consists of the remains of *Lepidodendrous* spores and their crushed cones. These objects have been forced, by the various evolutions through which the crust of the earth has passed, into situations above limestone and sandstone strata, and beneath overlying matter. In the course of time the bitumen of the spores soaked down into the mineral substances, and has so thoroughly impregnated them as to become an integral part of the rocks.

The two agents needed in order to bring about these results were internal heat and pressure, simultaneously applied; and these must have been in evidence during the remote past.

In fig. 5 is depicted a section of coal in which the remains of a *Lepidodendrous* tree, associated with limestone and sandstone combined in the form of crystals, and about twenty spores are shown. Such portions as that sketched lie between the limestone, &c., strata and the layer of bituminous coal above, so that they possess the characters of both kinds.

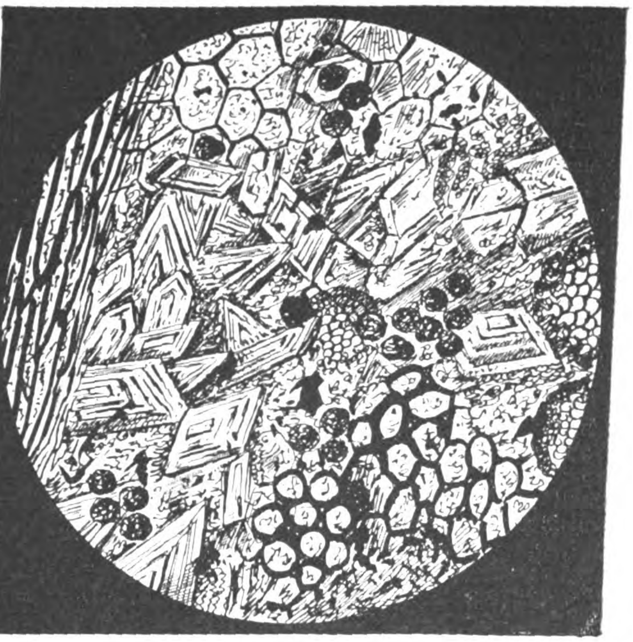

FIG. 5.—The circle equals in diameter a pinhole enormously magnified, and contains a thin section of lepidodendrous coal along with calciferous sandstone and bituminous spores, which concern asphalte.

In connection with the almost incredible amounts of this fine dust which must have been made and scattered to account for the huge masses of bituminous coal which are to be found, it may be pointed out that we have, at present, some striking analogies. Pine pollen, which in bulk resembles *Lycopodium*, is shed in such abundance that it forms great drifts in northern latitudes. Streams get choked up with it, and altogether it proves to be a formidable substance. People have generally spoken of these showers as though they consisted of sulphur discharged from some distant volcano; but the microscope has been the means of proving their source of origin. Although tons upon tons of pine pollen are annually shed, the whole mass is composed entirely of minute grains not much larger than those of *Lycopodium* and *Lepidodendra* spores.

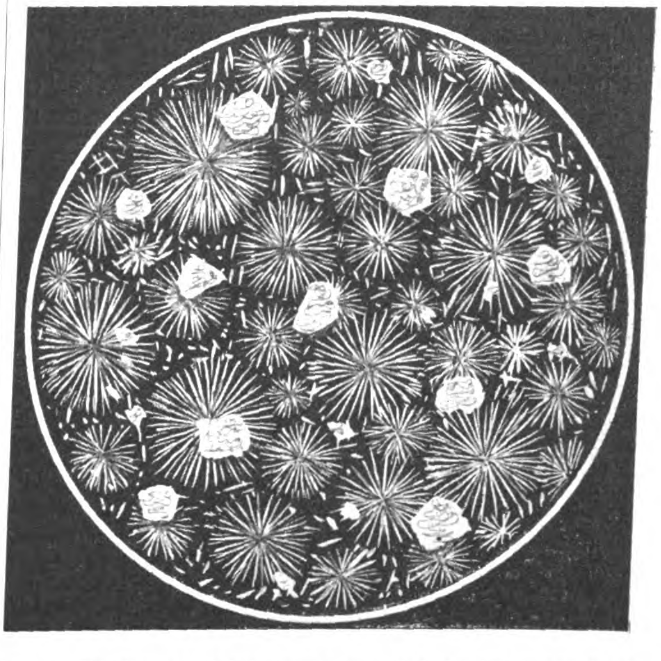

FIG. 6.—This disc is a pinhole greatly magnified, showing the result of treating the ash of asphalte with hydrochloric acid thereby producing lime chloride. The ten or so angular objects are grains of sandstone.

Limestone consists, as a rule, of the remains of corals, shells, and similar residues of organic life. It may, however, be found in a crystalline state, owing, no doubt, to complete amalgamation of the remains above referred to, and their subsequent modification. It is quite an easy matter, even in the laboratory, to convert a piece of shell, by means of an acid, into a crystalline form.

In fig. 6 is depicted the result of soaking a piece of rock asphalte in hydrochloric acid.

Sandstone is of less easily traced origin, and consists of minute grains of silica, compressed tightly together.

The mineral structure of rock asphalte is responsible for its characteristic hardness, and renders it at the same time capable of being cut with a pocket knife, thereby leaving the clean, level, yet mottled surface to which I have previously referred. The limestone and sandstone exists, as it were, in such tiny particles, with films of bitumen between them, that the knife slips through the mass and pushes the grains aside.

To anyone who possesses a microscope it will be worth while to test the asphalte in the following manner. I press the piece up beneath the stage of the instrument, so that a newly cut surface is in view. The light is then cast upon it from a table lamp, and the substance is seen plainly in excellent detail. I then carefully bring the point of a fine needle to bear upon it (the magnified point looks quite large), and gradually press it into the asphalte and tilt it over so as (*apparently*) to lift a piece out. In such circumstances the asphalte yields like putty; yet to the naked eye no movement at all is perceptible.

BRICKS AND BRICKMAKING.*

(*Concluded from last week.*)

Burning Processes.

There are, roughly speaking, five distinct processes, each with special variations according to the qualities of the goods, and with a number of different types of kilns for use.

The first and oldest process is clamp burning. Everyone is familiar with the large clamps of stock bricks to be seen in Essex and Kent. The process is characterised in these yards by the mixing of the fuel with the clay before moulding the bricks. The fuel is usually sifted house dust—that is, the contents of house dustbins freed from their old tins, cabbage leaves, and other refuse till only the cinders are left. This fuel contains about 35 per cent. of coke proper.

The huge stacks of bricks containing this fuel intimately mixed with the clay have two or three layers of large cinders at the bottom, which are fired, and serve to ignite the mass.

The bricks are stacked closely, and air gets to them so gradually that the heat is generated slowly and more or less regularly throughout. A clamp may take from six weeks to three months to burn through, and requires a great deal of expert attention to get good results. The air supply is so restricted that no more reaches the bricks than suffices to burn the fuel. None, therefore, is left over for the oxidation of the iron in the clay, so that a yellow colour instead of red results. On the Continent—in Belgium, for instance—clamps are also made, usually containing as many as a million bricks, but the fuel, there in the form of coal dust, is not mixed with the clay, but is placed in layers between the rows of bricks.

The burning of common bricks (other than stocks and including Flettons), red bricks, tiles, and firebricks is carried on in kilns of a great variety of types, either fired with coal or gas. This I call the second process. A brick structure is built to contain the goods, and firegrates are constructed below or by the side of them, on which coal is burned. A similar type of kiln is used for burning Staffordshire blue bricks and sanitary pipes, but two others of the five processes are used in them.

The stages of the process of kiln burning are as follows: Steam, raising the heat, soaking, and cooling. The first two are the same in all the types of kiln and all processes of burning. The soaking, however, is effected in two different ways. With red and most common bricks the soaking is done with a free burning fire and ample draught, so that a large volume of heated air plays on the bricks and oxidises them thoroughly. With blue Staffordshire bricks the soaking process takes another form, called smoking. An excess of coal is put on the fire, and the air supply is reduced so that smoke fills the kiln.

In this, the third process of burning, we see a reproduction of what occurs in clamps. The air supply is insufficient to burn up the smoke in the kiln, and the bricks are finished in an atmosphere that does not oxidise the goods, but, on the other hand, "reduces" the iron in them and produces a blue instead of a red colour.

The fourth process is salting. This may be used for three different effects—fuming the brick and producing a silvery grey colour, reducing the brick, and so in another way getting the blue colour, or salt-glazing the bricks or sanitary pipes. Salting is a simple operation, and is done during the last few hours of full firing by throwing common salt into the fires. It becomes volatilised, and the fumes pass over the goods in the kiln and form chemical compounds with the silica and alumina, which, in sufficient heat, fuse and form a more or less pronounced glaze.

The fifth burning process is that employed for high-class goods of various kinds, chiefly pottery and expensive tiles. They are placed in closed receptacles, either muffles or suggars, so that the flames and gases of the fuel do not come in contact with them. This process is the only one that can be called baking in the ordinary sense of the word, the muffle or saggar being a true oven with a fire playing round it. It is not used in brickmaking.

One of the remarkable features of brick burning is that though much heat is expended on the process very little is actually used. It is nearly all thrown away.

Raising the temperature of the bricks and driving off the hygroscopic and chemically combined water use heat in well-known quantities, but the process of turning clay into brick by heat uses none.

This is a physical fact hard to understand, because, as I have hinted earlier in my lecture, the coal consumed in the process is considerable in quantity.

For red bricks it is from 15 to 20 per cent. of the weight of the burned goods in intermittent kilns. The way in which the heat produced by the coal is used is mainly in keeping the bricks at a high temperature till the necessary chemical action has taken place.

Modern improvements in kilns have resulted in striking economy, so that now we can burn them with 5 per cent. to 7½ per cent. of their weight in coal. The continuous kiln, first successfully applied in 1865, to brick burning is known as the Hoffmann. It is almost universally used for common bricks, saving the brickmakers 5 or 6 cwt. of coal per 1,000, and costing less also for labour.

I was successful in inventing an important improvement in this type of kiln in 1898, by which it was made possible to burn best-class goods, such as Suffolk reds, tiles, chimney pots, &c., as well as in the old Suffolk kilns, but with 60 per cent. less coal and with less waste.

The principle of the continuous kiln is the using over again as much as practically possible of the heat wasted. Even in these the loss of heat by warm gases going up the chimney, and more notably still the loss by conduction through the massive walls of the kiln, is enormous, and cannot economically be prevented.

I cannot in the limits of this lecture go more deeply into these technical matters.

The points I have touched on so briefly, however, will perhaps have given you an unexpected insight into the wonderful amount of technical detail there is in the art.

Clay working bristles with technical difficulties, but in spite of that fact many innocent capitalists have, in booming times, been persuaded that brickmaking is easy, and that given the money and an ordinary working foreman anyone can make bricks. They have learned the lesson many a time too late, though they might easily have saved thousands of pounds by obtaining competent technical advice for a few guineas.

Types of Clay.

The clays that interest the brickmaker chiefly are the shales, marls, and surface clays.

Shale.

The Peterborough bricks or Flettons are made from an oily shale, another important centre using shale being Accrington. Shales are almost always made into bricks by the semi-dry process, although the plastic process may be used. I have already touched on this process, which is a mechanical one from first to last. In Peterborough, even the excavation of the shale is done with steam diggers on the largest works. The shale is brought straight from the bank to the machine, there to be ground to a granular condition. It is screened mechanically to the required fineness, mixed mechanically with a small amount of water if necessary, and then passed automatically into presses with rectangular cast-iron moulds for fashioning the brick.

The pressing into brick form may be completed in one operation, or the brick may be pressed a second time to improve its finish. Water in small proportion is necessary

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*** Abstract of Paper read before the Society of Architects on March 12.**

in order to obtain the cohesion of the fine particles or grains of shale. From the presses the bricks are taken straight to the kiln, in which they are dried and burned in one continuous operation. It is often stated that they are made dry and do not require drying. This is not true, but the amount of water in them is much less than in those made by plastic process, and they are sufficiently hard and strong to stack in position for burning direct from the presses. In the kiln they are dried first and burned afterwards continuously.

In contrast to this, bricks made on the plastic system are too soft to be stacked in the kiln, and must be dried first by one of the various means employed in the trade. The economy of labour in the semi-dry process over the plastic process is the chief cause of the cheapness of the brick made at Peterborough. Further causes are the price of coal and the fact that burning in the kilns is assisted by the oil contained in the shale.

MARLS.

Marls are found in several parts of the country, the chief beds being in North Wales and Leicestershire. They are so called because of the presence of carbonate of lime in varying quantity. Carbonate of lime or chalk has this peculiarity in connection with brickmaking, that when present in lumps or nodules it is exceedingly dangerous and destructive unless effectively ground up or eliminated, but when in a fine state of division it is harmless. Marls rarely contain more than 5 per cent., but they require very careful selection and treatment, even when the proportion is much less.

The carbonate of lime when not finely divided becomes converted in burning into quicklime, which slacks when the bricks absorb moisture from the air, with the result that the face becomes pitted through the lime, blowing pieces off the face. Yet clay exists containing as much as 40 per cent. of carbonate of lime that may be made into sound bricks. The white Suffolk brick clay sometimes contains this proportion, and the Cambridge gault contains 33 per cent. The London stock brick clay contains 15 per cent. It is, however, in such a fine state of division, and so intimately mixed with the clay and sand that it forms harmless chemical combinations with them when burned.

Marls are plastic clay, and, in common with the Reading, gault, and surface clays, when made into common bricks are treated by the wirecut system of brickmaking.

I can, therefore, give you a short description of this method of manufacture as applied to these types of clay without referring specially to each.

The clay is dug and conveyed in wagons usually by a suitable hoist direct to the machinery.

This may consist of a brickmaking machine only, or preferably a train of machinery which gives a thorough preparation to the clay before it is finally pugged. This machinery may consist of all or either of three types.

The grinding pan resembling a mortar mill is useful in working up a sandy non-cohesive clay to a more plastic condition than it possesses in its natural condition.

The bottom of the pan is perforated in parts, and the rollers squeeze the clay through the perforations, causing it to drop into the next machine.

Again, the clay may instead be passed through one or more pairs of rollers running at different speeds. These crush the clay, and any stones or lime contained in it, and at the same time tear it slightly by reason of their different speeds of running.

From the pan or the rollers the clay may pass to a third type of machine, the mixer.

This may be open or closed, and have one or two revolving shafts. On the shafts are knives, so inclined as to push the clay forward and mix it at the same time.

The mixer may be about 6 feet long, and horizontal in position. From the orifice at the end the clay drops into the hopper of the brickmaking machine.

If required, water is added to the clay, either in the pan or the mixer, but never in the rollers, as it would cause the clay to slip.

The brickmaking machine usually has a small pair of rollers mounted on it, through which the clay is forced into the barrel. This, again, is horizontal, and is furnished with a single shaft, and pugging knives similar to those in the mixer. These knead and compress the clay, and press it towards the mouth of the machine.

At the end of the shaft a worm is placed, which pushes the clay through the mouthpiece and die, and forms it into a continuous rectangular column of the correct cross section. The dimensions of the cross section correspond with the length and width of the brick, allowance being made for the shrinkage in drying and burning about which I have already told you.

The column of clay is now finally cut off by wires drawn transversely through it, the wires being spaced the necessary distance apart to give the correct thickness of brick.

From the cutting table the bricks are wheeled to the drying ground, shed, or other apparatus, in order to be thoroughly dried before being stacked in the kiln for burning.

This, briefly, is the routine of the mechanical plastic process. There is another intermediate process called the stiff-plastic, which is used for some common brick clays. It is not of great interest, and need not claim your attention.

HAND BRICKMAKING.

I now have, therefore, to give you finally some description of the older process of hand brickmaking, which holds its own in certain parts of this country, in spite of the great improvement of machines in the last thirty years.

It is the process used in the days of the Babylonians, Egyptians, and Romans, and was that used by the first brickmakers in England up to the middle of the nineteenth century.

It is to all intents and purposes the process used for all artistic terra-cotta making in which mechanical aids are almost useless.

Yet, strange to say, it is looked down upon with scorn by the countries far advanced in mechanical appliances, Germany and America, while it is practised almost exclusively in Belgium and Holland, and largely in France.

The hand brickmaking process is used for making stock bricks and red facings.

The clay is usually prepared for making by weathering—that is, by being spread out in layers in the open air, so that air, rain, and frost may in turn act upon it, and loosen it after its long confinement in the natural bed.

Weathering is practised, as well as what is termed resting, on other clays, and although the effects of it are apparent and the causes guessed at, no definite knowledge has been obtained as to the reason it is so efficacious.

Stoney clays for hand-making are also washed, but those found free of stones do not usually need it.

The weathered clay is pugged or ground, usually in vertical pugmills driven by horse or steam power. These mills are essentially the same as the horizontal ones previously described, and serve to mix the clay and incorporate the water, and finally expel the mass in a condition fit for moulding.

Steel or wood moulds of the required size are wetted and rolled in fine dry sand, and placed in position on the moulder's table.

A "walk" of clay, as it is called, is then made by the moulder, and rolled into a shape suitable for throwing into the mould. This walk is dexterously rolled in dry sand, and, when ready, thrown with some force into the mould. The excess of clay is then struck off, and the finished brick dropped carefully from the mould on to a pallet.

The final result and effect depends on a variety of circumstances. The surfaces of the brick may be fine and uniform, or they may be wrinkled and coarse. The brick may be true and square, or out of shape and deformed. These effects are due to the idiosyncrasies of the moulder, who requires training carefully in the way he is wanted to go. The final colour and appearance depend on the quality of the clay and sand used, the kind of kiln, the method of firing, and the final temperature and soaking, all matters requiring constant care and much technical knowledge.

The drying is an operation also requiring unremitting attention, and all the various materials, operations, and skill combine to yield the final product, which may or may not produce adequate returns according to the demand and the success of the master in supplying it.

From all of which you will gather some further confirmation of a remark I made earlier in my lecture, that the paths of the brickmaker are thorny and by no means so easily trodden by a novice as some would be disposed to think.

The processes used in hand brickmaking are such as to afford to the clay the most perfect treatment from a physical point of view.

The weathering, the slow pugging, the lengthy and complete drying all tend to assist the clay molecules to adapt themselves to the altered conditions they encounter in their drastic change of state. At the same time, the ultimate result is not only sound physically, but it is in the highest degree artistic and durable, provided the processes of manufacture are all properly carried out.

It is durable under all circumstances of environment: water, frost, sun, and fire all alike leaving it unharmed and unchanged.

That this is so, the old examples of brickwork in East Anglia and elsewhere eloquently testify.

THE INSTITUTE OF BUILDERS.

THE thirtieth annual general meeting of the Institute of Builders was held at Koh-i-Noor House, Kingsway, W.C., on Wednesday, March 25.

The audited accounts for the year ending December 31, 1913, and the annual report were received and adopted.

Officers were appointed as follows for the coming year: President, Mr. F. G. Rice; Vice-Presidents, Mr. E. J. Strange, Mr. Leonard Horner, Mr. G. Bird Godson, and Mr. Walter Lawrence, junr.; Treasurer, Mr. James S. Holliday. The following were elected on the Executive Council: Messrs. F. J. Gayer, E. J. Hill, R. J. Holliday, F. M. May, S. Smethurst, J.P., and A. W. Turnbull.

The thirtieth annual report contained the following paragraphs:—

During the past year members of the building trade have experienced many anxious moments, and it becomes a very serious matter nowadays to know how to price tenders, owing to the serious fluctuations in prices of material and cost of labour. Everything has been on the upward grade, more particularly in regard to wages. In many districts throughout the country demands have been made by the workmen for increases in rates of wages, which have almost always been granted; but it is to be regretted that these increases have not been the means of solving the problem of unrest amongst the militant sections of the employees, and the bitter defiance at which the new agreements have been set, which had been entered into between employers and employees in the London area, resulted in so serious a condition of things that a strike or lock-out in the majority of the trades concerned followed. Unless some satisfactory guarantees can be given that agreements will be kept it is not at all likely that the present dispute will end.

National Insurance Act.—It must be patent to everyone that the National Insurance Act has lived long enough to entail very heavy burdens on employers and dissatisfaction among those whom the Act was supposed to benefit. It is to be hoped that eventually it will be so modified in its terms and working as to become a real benefit to the deserving; but members of the building trade have no reason to alter their views regarding the fact that their industry was so unfairly dealt with by making the experiment of solving the unemployment difficulty apply to the building industry. It is, however, satisfactory to note that the Act is so worded that the application for unemployment benefits by the members of trade unions in London who had been locked out because of their failure to keep their agreements was refused.

Standard Form of Conditions of Contract.—Close attention has been given to the many requests from all parts of the country to bring about an improvement in the agreed form of contract. The Royal Institute of British Architects desired that certain alterations should be made in Clauses 20 and 21 of the present agreed form in order that those two clauses should be so amended as to embrace not only the enactments of recently introduced Acts of Parliament but any future Act that may be passed; your Council considered it would be waste of time to attempt to alter two of the clauses only without discussing amendments to the form of the whole contract. Ultimately the R.I.B.A. expressed its willingness to fall in with that opinion. Your Council is in hope that a conference on the subject will be held in the near future between representatives of this Institute, the R.I.B.A., and the National Federation of Building Trades' Employers.

Sub-Contract Agreement.—The new sub-contract agreement, drafted by your Council and submitted to the R.I.B.A., has been debated at several conferences between representatives of this Institute, the National Federation of Building Trades' Employers, the Builders' Merchants' Alliance, and the Confederated Sub-Contractors, and the terms of the original draft have been modified to some extent at these conferences. Your Council distinctly realises the importance of the existence of a form that shall be generally fair to building owners, architects, builders, and sub-contractors, but that builders must take the greatest care that their interests are safeguarded without imposing an injustice on others. Before the expected conference on the subject takes place with the R.I.B.A., the above-mentioned bodies will meet and discuss the various suggestions that have been put forward, so that a generally acceptable form may be discussed with the R.I.B.A.

Finance Act, 1909-10, and Builders' Profits.—This matter has received great consideration, and conferences upon it have been held with the Chancellor of the Exchequer, who, when he received a deputation from the Institute and the National Federation of Building Trades' Employers, expressed his sympathy with the views of the building trade placed before him, and he promised that an amending Bill would be introduced into the House of Commons in order to remove the disabilities such as occurred in the judgment of the Lumsden case. The Chancellor of the Exchequer invited the deputation to appoint two to co-operate with him and his Committee in drafting the amending Bill. Mr. Henry Holloway and Mr. W. T. Massey (Messrs. Sheen Roscoe & Co., solicitors) were appointed, but these gentlemen were not satisfied with the recommendations that were to be incorporated in the amending Bill promised. This Bill was drafted and laid before the House of Commons, but there was so much threatened opposition to it that it was withdrawn. Close attention will be paid to it when it is again brought before the Commons, and there will be no hesitation to remind the Chancellor of the Exchequer of his pronounced sympathy for the fair and reasonable requirements of the building trade.

Australian Commonwealth Building Contract: Aldwych.—Exception was taken by this Institute to a clause in the contract for this building to the effect that "trade unionist workmen only were to be employed in its construction." Letters were addressed to the R.I.B.A. and to the architect, and ultimately the objectionable clause was withdrawn.

Apprentices and Evening Technical Classes.—Your Council has thrown itself heartily into the movement promulgated by the L.C.C. in order to foster and encourage apprenticeships and the attendance of apprentices at evening technical classes. There is a consciousness of a great deal of money and energy being wasted on the various schemes that have been tried from time to time. This Institute has formulated suggestions on the question, and promised its hearty co-operation in seconding the efforts of the L.C.C. to secure good attendance at day and evening technical classes, but, so far, no definite schemes has been put into operation.

Timber Specification.—Your Council formulated and forwarded to the R.I.B.A. suggestions with regard to obsolete clauses in timber specification. The matter is now under consideration, and the results will be known in due course.

I.O.B. Benevolent Fund Grants.—The following grants were made during the past year, viz.:—

1. Builders' Benevolent Institution . . .	£50	0	0
2. Builders' Clerks' Benevolent Institute .	10	10	0
3. Provident Institution of Builders' Foremen and Clerks of Works	10	10	0
4. Miss C. A. Plucknett	26	5	0

Labour Exchanges.—Being invited to express its views on the utility of Labour Exchanges to the building trade, your Council considered the question carefully, and, from the experience of the members, came to the conclusion that the Labour Exchanges involved a large expenditure yearly but were of little or no use to our trade.

City and Guilds of London Institute.—This Corporation, which aims at encouraging excellence in handicraft trades throughout the country, recommended two students for the awards given by the Institute of Builders. Mr. W. F. Wallis was appointed examiner in brickwork and masonry in succession to Mr. F. Higgs, who retired from that position by rota.

War Office Contracts.—The Institute was advised officially that in War Office contracts of £2,000 and upwards bills of quantities would not be required for lump-sum contracts, except from the contractor whose offer is under consideration with a view to acceptance.

Cutting Away and Attendance on Sub-Contractors.—The Council, having communicated with the Surveyors' Institution and the Quantity Surveyors' Association on this question, was informed that neither of those bodies had much to do with the matter. To this the Council demurred, and requested the former body to receive a deputation from this Institute, when its views of this burning question might be set out clearly.

Builders Preparing Plans.—The Society of Architects requested information with regard to builders preparing plans. The Council replied that there was no allusion in the Institute articles of association to such a practice, and that it occurred too seldom for any serious notice to be taken of it.

New Members.—The following new members were elected during the past year: Mr. F. J. Gayer (Messrs. E. A. Roome & Co., London); Mr. J. Storrs, J.P. (Stalybridge); Mr. H. Willcock (Wolverhampton); Mr. W. Downs (London); and Mr. G. H. Parker (London).

FASHIONS IN ART AND ART INDUSTRY.*

By Sir Charles Waldstein, Litt.D., Ph.D.

The most efficient designer for our art industries, besides being a master of his immediate craft in design, should also be a man of the world, educated to perceive and understand the life about him in its most advanced, delicate, and refined manifestations.

Now, fashion is one of the most important and elusive elements with which he thus has to deal. Let us see whether we can discover any *rationale*, any general principles or so-called "laws" which determine and govern the origin and activity of this force in life, which, by its very nature, eludes and defies all reason and established law, is born and lives by its antagonism to the previously established rule, and puts the past, down to the very moment of its own birth, into direct opposition to the present, which it aims at fashioning to its own caprice. While thus, by its very nature, it denies the claims of precedent laws, it is most tyrannical in establishing its own laws and the exclusive dominance over the taste and customs of the social life out of which it grows and which it strives to enslave.

Fashion is the ephemeral domination of taste. In this definition the term "ephemeral" is most important, as it distinguishes fashion from custom, tradition, and similar groups of ideas; it forms what logicians call the connotation, and not only the detonation, of its essential meaning. In the special subjects with which we are dealing it thus differs from tradition in that it does not convey to us, or imply, an established school of art, an important definite region of its history or a period. Still less is it the expression of an age or a nation which is conveyed to us by the term fashion. Change is the life and soul of fashion. It is this element of change which makes it fashion and not tradition. When once it has cast off this element it may become at least a convention or be advanced to the dignity of a custom or tradition, or even be embodied among the national and historical characteristics.

Therefore, fashion is the soul of trade, because it leads the consumer to discard the things he has and to purchase new ones; and it thus enables the producer to provide and to dispose of new goods even beyond the natural requirements of a natural market. Shakespeare himself has said ("Much Ado," III. 3), "The fashion wears out more apparel than the man." It also gives the producer full play to use his ingenuity in devising novelties to attract or tempt the purchaser; it gives the greatest opportunities to his energy and inventiveness in asserting his individuality as an original producer beyond and above the average of his craft or trade as a whole, and at the same time it introduces into the earliest stages of production in trade and into art industry, through all subsequent phases and the final distribution of goods, the speculative or gambling spirit.

If change is then the essence of fashion it means that taste affected by it cannot be wholly accounted for by the laws of beauty prevailing and dominating all times the absolute laws of form. Taste is thus modified and influenced by extraneous elements, not purely æsthetic, which produce this deviation—this departure from the lasting and universal valid laws of taste, of form, of beauty, and of harmony. Now, we can distinguish several among the more general causes which affect and direct our taste independently of pure and established beauty and harmony. So strong and effective are these causes, these tangent incursions upon the laws of form from the forceful regions of life surrounding the æsthetic domain, that even what was before rightly thought ugly and repulsive may become—at first through the action of fashion, then of convention and custom and tradition—beautiful and attractive in our eyes.

I should divide these causes into two groups, which in their turn I should again subdivide into two more groups. The first I would call physiological; the second, associative. The two qualities of the mind that I would group under the physiological modifications of our æsthetic faculty are the influence of habituation, the desire for undisturbed rest which even our senses crave for and, on the other hand, our longing for novelty and contrast, which is equally efficient in directing the activity of our senses and of our whole mind, as it corresponds to the essence of life which the ancient Heracleitus considered the principle of the world's existence. The side influence of association in its bearing upon our pure feeling for form again falls into two main groups—the one the sexual, the other the social associations—which may and do directly modify our æsthetic cravings, and, according to the strength of their influence, may even at times permeate the æsthetic currents to such a degree that their ultimate action on taste and art may be directly opposed to the primary impulse and demand for beauty and harmony.

1. Habituation and novelty mean harmony and contrast, and are directly opposed to one another. The struggle between the two, the supreme need and desire to give due proportion to the claims of each through correlation, is one of the fundamental problems of life, individual and communal. They are the night and the day of life, the rest and the activity, the passive and the active, the conservative and the radical. I am not overstating the case when I maintain that in every department of human life—perhaps even of nature—we can ultimately reduce the problems and questions with which the inquirer has to struggle to the reconciliation of these two forces and of these two mental aspects. We do not like what is new, and our senses experience a primary revolt against its perception.

So powerful is this conservative element of habituation in directing and modifying our taste that it will often override, not only the immediate action of the æsthetic instinct and feeling for form, but even the most powerful influence of the associative forces, both sexual and social. I have, for instance, heard young women of the present day say that they could not marry a man with a beard, however much they admired and cared for him otherwise. Not many years ago, and in some countries even at the present moment, one may find that the natural difference between the strong and robust masculine, hirsute sex and the delicate, softer, and more tender feminine appearance was clearly expressed and emphasised by the growth of the beard in man, and that it attracted instead of repelling women. This contrast, moreover, underlies sexual attraction.

In art this element is accountable for the dominance of conventions in style. We find, for instance, that the unduly long survival of manifest stiffness in composition and in detailed modelling during the Archaic period of Greek sculpture was due to the fact that the early temple statues, or xoana, had accustomed the Greek people to this style of art, and that their eye and their æsthetic sense craved for it. To come down to our own days, we have a still more forcible instance of this influence of habituation in the case of the eikons of the Eastern, the Greek, and Russian churches, which are repeated now in almost the same form as in the Byzantine period when they originated. It is also well known that the type of the Black Madonna, which still survives, arose out of its establishment either in some country with predominant dark inhabitants or was due to the accident of an eikon turning black. The entire history of art from one point of view means the struggle of the new school, the new technique, and the new appreciation of life to overcome the persistent dominance of the established older school.

The whole chapter of survivals in works of art and art industry really comes under this heading of habituation, as it shows the tribute which the workers in periods of advancing development are consciously or unconsciously bound to pay to the existing standards of the past and the habituation of taste which they have created. To give you more definite instances of this in our immediate subject, let me remind you that our railway carriages—and even, as yet, our motor-cars—manifest their earlier origin out of the long discarded stage-coach, with the intervening period between the two forms of traffic when the stage-coach was put on a flat railway truck and the passengers remained seated in it. Not only in its shape and construction do many of our railway carriages manifest the survival in form of the old stage-coach, but in the elements of ornamentation arising in the coach out of definite constructive purposes have such details of decoration survived. Take the straps, embroidered or embossed, by the sides of the seats in our railway carriages, the original purpose of which is quite unknown to most people. They go on as a meaningless element of decoration, and the eye has become accustomed to seeing them. These straps were introduced in the old coaching days because of

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*** Abstract of a Paper read before the Royal Society of Arts on March 25.**

the bad roads and the speed with which the coach travelled over them, so that the traveller might put his arms into them to retain some stability in his seat as he swung and jolted along.

2. When we turn to the element of novelty and change, I need not trouble you with a long exposition of the potent influences of this moving spirit of life in all its aspects. It stands for the very opposite tendency of the force we have just been considering. On the one hand, people soon get tired of the repercussion of identical impressions—in fact, we are informed that it is one of the subtlest devices of torture in the Far East to kill by the constant irritation of one of our senses. The moving, active, bold, and adventurous instinct and impulse, moreover, produces a revolt against the old and established, and finds satisfaction and distinction in the manifestation of courage in exploring distant regions and carrying their produce back to the commonplace home, fearless of doubt and derision or even of the charge of eccentricity and insanity. In art and in art industry we shall always, therefore, have those who respond to this fundamental need of human nature for change and variety and novelty; we shall always have the *frondeurs* and *révoltés*, the *jeunes féroces*, the new art, even the post-impressionists and futurists; and among the public we always have the lovers of new things and the fighters against the old, the lovers of the conspicuous, the assertors of their individuality, the leaders of fashion, and the eccentrics. These are extreme growths and products of life and art; but there are also the original workers bent upon the normal growth and change of life in every department of human activity, who are not satisfied with the monotonous repetition of things done before, and who delight the senses and the imagination and the taste of the world with new things and new creations, which respond to and satisfy man's love of variety. The ideal will always be found in Aristotle's golden mean between the two extremes—the *via media*, which combines life and movement with change and repose and avoids exaggerated and cringing regard to the claims of either alone. As Pope has put it—

> In arts, as fashions, the same rule will hold;
> Alike fantastic, if too new or old.

The best taste in dress, as well as in every other manifestation of life, is that which neither leads nor lags behind. In terms of decorative art it means composition or decoration by sympathy or by contrast. When a change of fashion is called for or imminent, the question for the trade always is whether the new fashions will be based upon sympathy or contrast; whether it will be wise to develop the fashions in the main on the lines of those pertaining, ensure novelty and change by carrying them still farther in the direction already indicated, or whether it is wiser to strike out on quite new lines and to appeal to the desire for novelty by completely discarding the old, and thus favouring not a reform, but a revolution against what has become monotonous or common.

Suggestion plays an extremely active part in all this process of fashion-making. The designer may thus hypnotise the manufacturer into believing that an ugly thing is beautiful (he will do this still more potently if he can convince him that it will pay); the manufacturer practises this suggestion on the merchant, who again passes it on to the dressmaker, the dressmaker to her customers, until the wives and daughters hypnotise their fathers and brothers and friends, and the whole world bows down to the golden calf of an eccentric fashion. But the most active form of suggestion is to be found in the associative groups of influence which direct the course of fashion, perhaps even more potently and directly than do the physiological causes.

3. The action of sexual association in directing and modifying the course of art and art industry is most manifest in all climes and in all times. In the first instance it means that man naturally and rightly admires manly men and womanly women. But these natural and dominant feelings are not only restricted in their effect to the presentation of man and woman in art, but re-echo in various direct or remote forms throughout the whole world of sensory perceptions and feelings. By a rapid transition let me take but one instance in architecture and internal decoration. The boudoir, or lady's private withdrawing room, in a château or country house would be constructed and decorated on quite a different principle from the keep or hall in a mediæval castle, or the smoking-room or study in a modern house. The one would rightly demand all the grace and daintiness and refinement which hitherto we have associated, not without charm and justification I hope, with woman; yet this would be quite inappropriate in the construction of the hall or smoking-room, where strength and virility and the rougher and ruder aspects of man's active life ought to form the keynote. You can work this suggestion out for yourselves, not only as regards the shape and construction and general colour-scheme of these respective rooms, but in the furniture and detailed ornamentation, in the adornment with pictures and works of plastic art, and every item which goes to the making of a well-furnished apartment.

The question, so far, is comparatively simple, and would remain so if man always retained one conception of what is manly and what is womanly, and if the changing conditions of complicated civilised—and even of savage—life did not enter into our existence and essentially modify even these fundamentally natural forces in human life.

The influence of the sexual aspect of life is especially important when we consider that aspect of art—or, rather, of industrial art—which is concerned with the fashions in dresses and personal ornament. But of all the formative forces in art thus affecting and modifying the purely æsthetic impulses and needs which we have hitherto examined, that of social association is the most potent and important, and becomes especially so in the case of industrial art, which so directly responds to the varying needs and tastes of the actual life of social groups.

4. Ever since Aristotle defined man as a social animal it has been recognised that social requirements and interests, as well as social instincts, considerations, and ambitions, have formed, and will always form, the most powerful element in directing human conduct, human desires, and human tastes. Man's craving, even in the earliest phases of civilisation, for the regard and esteem—and even the approval and admiration—of his fellow-men is, after the satisfaction of his immediate instinct for self-preservation and procreation, the strongest power moving him to action and regulating his activity. In those phases of civilisation, however, where the primary instinct of self-preservation is satisfied without much effort, and especially in those classes of civilised society where the production of sufficient food, of adequate housing and protection against the elements, so that the needs of physical existence are secured, is taken for granted or readily procured without much effort, the satisfaction of the social instinct is the most potent of all. Ultimately it will be found that most of his ambitions and efforts can be traced back to its satisfaction. Furthermore, in these phases of civilisation and with these groups of civilised society the procreative instinct, as either affecting the direct choice or indirectly modifying sexual preference, is so much mixed up with social standards of preference as hardly to be discernible from it. Now, by the natural action of mental association, the outwardly manifest characteristics of social distinction will always evoke the admiration of all groups of society and will urge them to acquire these, to follow them and to imitate them. Social distinction will create the fashion. Such fashion may then originate with an individual or a social group or class. In following up in the remote by-ways of its elusive activity the workings of fashion in our own time, I have been able to trace the origin of the long shapelessly wrinkled evening glove for ladies to its use by a noted actress, most prominent some years ago, who happened to have thin and ill-shaped arms which she covered by means of these gloves.

So long as society as a whole naturally becomes disintegrated into groups and classes, from at least a social point of view, it will be through classes that its gross action becomes mainly effective in the regions with which we are dealing, namely, art and art industry. The most striking and classic instance of this is the well-known change in the formative process of the English language, as we use it, as affected by the Norman Conquest. You all know, for instance, that the words designating the raw material of human food remained Saxon—ox, sheep, hen, &c.; while after the Conquest, when cooked, they became Norman-French—beef, mutton, pullet, &c. The history of the word "buxom" is, to my mind, most illustrative and significant. Originally from *buogan*, the modern German *biegsam* when applied to woman meant (as it does when Piers Plowman says "Buxomly kneeling on their knees"), pliant, *svelte*, and graceful. But this characteristic commendation of female beauty when the Norman came in was annexed by him for his womankind whom he called pliant and graceful, and buxom was applied to the characteristics of the bucolic women, and its meaning became the very opposite from what it had been originally, and this later meaning prevails to our day.

The influence of social association on fashion works through classes, and in these classes the upper or most distinguished classes will most naturally lead, while the others follow. This is of great assistance to those industries which cater for the public; for it gives them time gradually to establish the fashion in goods of higher quality and greater expense for a more limited class, and of diffusing this fashion widely in cheaper materials and infinitely larger markets, while it also enables them to get rid of their surplus stock.

The chief lines of social association in fashion are thus dependent upon the dominant classes, and the spread of fashion depends upon the fact that the other classes follow their leaders, while the leading classes are assiduously, if not religiously, engaged in fleeing from the contamination of those they consider their social inferiors. This bloodless, and not necessarily noble, warfare is to a great extent accountable for the movement and change in fashion in industry. I have been told that year by year the fashionable place for sitting in the park on summer afternoons changes. Apparently it has, within our memory, by very gradual steps migrated from the lower regions of Rotten Row further and further northwards to the approach to the Marble Arch. The reason for this apparently is that the leading groups have established themselves in one part to meet their friends, the others follow them, and this causes the continuous flight and pursuit. This is what happens with regard to styles in dressing the hair, fashions in headgear, coats, skirts, dresses and blouses, gloves, sunshades, boots, stockings, and —I think I must end there. But it also is the case in the building of houses and the locality in which they are built; the furnishing of them, and even the length of the dinners; the wallpapers and chintzes, every detail of ornament, not omitting even the noblest works of art. I have, in a previous lecture and in another connection, impressed upon you the fact that there is such fashion in the highest art, and I instanced to you the depreciation in the market value of such great artists as Murillo and the smaller Dutch pictures from the days of our fathers to the present day. At present the two rightly esteemed giants in art, Rembrandt and Velasquez, are most fashionable, and the other giants, whose artistic qualities, technique, subject, and spirit differ from these or are contrasted with these, are repressed low down in the market. This is, no doubt, to a great extent due to the "social" prominence of those who buy the works, coupled with a considerable amount of advertising; but it is also due to the skill and obtrusive enterprise of the art dealers, who, conversant with the workings of the subject with which we are dealing in all its aspects, manipulate the market and often create prices to suit their purpose. Let me give you but one more instance from my own experience. A friend of mine who is in moderate circumstances possesses a portrait by Romney of a man showing all the attributes of manly beauty and painted in the very best style and period of that artist. Not long ago on my admiring it he said to me, "I am glad it is not a woman; for, if it were, it would be worth so much money that I should not feel justified in keeping it, considering the yearly interest it would reap on the capital which it would fetch in a sale."

I would not, however, lead you to believe that the æsthetic forces, the purely artistic elements, are not, and wlll not, after all, always be dominant in designing for every form of art-industry. The eccentricities, the fortuitous and adventitious influences in the making of fashions to which I have referred are, after all, side issues, and but tend to show the struggle for beauty which underlies every effort at decoration and embellishment in our personal adornment and in our surroundings. The more eccentric they are the more ephemeral they are bound to be; and as in art we have always had Renaissances—which mean revivals of the naturalistic ideals of the ancient Greeks in their desire to express beauty and harmony based upon nature—so in fashions these elements of pure beauty will always return, and will assert their ruling power over all that man fashions to please his fellow-men. Still, the designer must study the facts and the laws which we have cursorily examined hitherto; and in so far, I repeat, he ought to be in touch with the life of the social world in which he lives.

It will be manifest to you that in all industrial art in which artistic design is the dominant feature—such as architectural decoration, stained glass, tapestry, wallpapers, furniture, gold and silversmith's work, printing and bookbinding, pottery, metal work, wood carving, &c.—the artistic element in the design, the real function of the designer as such, will be paramount, and it is more likely that fashion will follow his lead and be established by him than that he will be subject to the influence of fashion coming from the general public without. However, even in those most fortuitous regions where irrational fashion, independent of artistic principles, exercises the greatest power—such, for instance, as all departments of ladies' dress goods—the action of the artistic designer plays a prominent part.

But pray remember that, besides the creation of purely novel and original styles or fashions in art-industry, the established styles and schools of the past always hold their own, and will always supply a great demand in our age and in future ages in which the historical feeling is so integral a part of our civilisation and the mentality of our people. Though on the one hand this need may call upon the designer to be almost archæologically accurate in his strict reproduction of a bygone style, on the other hand, an intrinsic quality and a distinctive charm may rightly be given to the reflection of such a past style as it passes through the artistic personality and the individual spirit of the designer himself, who may thus blend, in response to an historical feeling for former styles, the actual spirit and taste of the present with the past.

So strong is this historical attitude of mind on the part of the public that we meet with a most interesting phenomenon in its effect as regards public taste concerning past fashions. For I would have you note that a discarded style only becomes tolerable or attractive when it has become historical. The immediate fashion when once discarded and replaced by a new fashion evokes a strong revulsion, a mixture of contempt allied with feelings of repugnance and horror almost comic. The reasons for this revulsion are manifest. I would have you recall your attitude towards the fashions of eight or ten years ago. Still better, those who can recall the dress of twenty or thirty years ago must remember the contemptuous laughter evoked by early or mid-Victorian fashions. Yet that despised period is now gradually becoming "historical"; we can regard it with the self-detachment afforded by distance, and can see in it the expression of a bygone age, with the charm and perfume of an historical period remote from our own. We are now thus witnessing revivals of early-Victorian and mid-Victorian taste, which is beginning to hold its own as a style on the same level and sphere with Empire, late Georgian, Louis XVI., and the Rococo period. Again this proves, what I insisted upon with all the emphasis I could give to it, how important it is for the industrial designer to have developed in him the general historical sense, and more directly the feeling for the great styles of the past.

In spite of all the vagaries from the broad paths of art in the fashioning of taste and styles, we must always remember and realise that art as such dominates, though life in all its intricate manifestations will have to be considered, and may, in a way, run counter to it. The designer will thus have to be trained as an artist before all things; he will have to be infused with the historical spirit; and, at the same time, he will have to be a man of the world, a man of sensitive thought in his realisation of all phases of life, so that he may succeed as an efficient designer. His great task will always be to bring pure art in touch with daily life, and to infuse the actual daily life of his time into pure art.

REFLECTIONS UPON THE SALON DES INDEPENDANTS.

Introduction.—Paris, the metropolis of modern art, has a voice alike for the authentic and the rebel, the decorator and the dilettante. The opening of the Salon des Indépendants reminds one that spring is upon us, and that shortly the artistic world of Paris will be plunged into a whirlpool of exhibitions.

Visiting these salons is a weary business, and makes one reflect as to their ultimate purpose.

Are the objects exposed meant for the salon or for some other place? Are they useful if beautiful? Are they still-born, or do they help to adorn life? In short, are they decorative?

The question, Is the salon for the élite of art, or is it for the benefit of humanity is obviously answered by stating that the salon is for the artist as an end in itself. Architecture, which was the "Mother of the Arts" before and during early Renaissance times, found a use for the arts; the salon, the "Mistress of the Arts," seeks art for art's sake. Architecture vitalised the arts; the salon fatigues them and its visitors.

Paris.—Paris, destined to acclaim the goddess of beauty, was also destined to become the ruin of his country; and the city which bears his name has always been an apparent contradiction, for no city is better decorated, yet no city has so many useless exhibitions.

All exhibitions may be said to be of use, if the means are not mistaken for the ends; but this age, refreshingly full of promise for the future, is yet suffering from the expression of the personal rather than the universal, with the result that we get the ugly in art, anarchy in organisation, a sanction of vulgarity, and people who imagine themselves Indépendants.

The history of the French proves their great logic. No country ever had such a well-organised and highly-centralised Monarchy, and no country ever so successfully revolted against the corruptions of that Monarchy. And so in art; no modern State is better embellished than France, and no country offers better opportunities for personal expression of the highest and lowest description. In consequence, probably, France will again be the first country to value the universal in preference to the personal, because the desire for the personal sanctions hordes of people to seek experiences for their own sakes and then to prostitute them as an end in itself instead of a means. Art for art's sake; in short, Indépendants.

Fashions.—Fashions are generally born in drawing-rooms and die in the gutter. The first official exhibition of the Royal Academy of France took place in 1673 in the galleries of the Palais Royal, at a fête given to Le Roi-Soleil, and also as a remembrance to the efficient intervention of Colbert in the organisation of the first academic exhibition, the minister charged with the direction of the fine arts, and always cited as the official promoter of the Salon.

The Salon.—The salons of the eighteenth century took place, with few exceptions, in the big salon of the Salon Carré, whence the name *Salon*.

The Revolution opened the exhibition to all artists, when the space of the Salon Carré became insufficient, and from that time they were housed in different buildings until the Palais des Champs Elysées was demolished before 1900 to make place for the two palaces of our day. Since then art, not having a decorative purpose, has other motives, notably useless pleasure or commercial profit. The craze or fad started by the élite of society is continued by means of snobbery, and permeates the idle rich and bourgeoisie until salons of all descriptions abound; but most things, if sufficiently heated, will melt, and so, perhaps, we may hope that not before long art will be made to decorate life, in the same way as architecture was and should be.

The Logic of Personal Expression.—How is it possible to maintain a universally high standard of art when personal expression is the rage? For while the rage lasts, which by its nature denies the decorative aim, it is logical to say that any irresponsible personal expression is unanimously hailed; and anyone, without distinction, who produces his expression is an artist if he finds one admirer. And society, having no aim in art, consequently has no standard of criticism; therefore, every rebel, sensuous brute, or commercial adventurer is unavoidably acclaimed into the fold, and is bound to be asked to exhibit his personal expressions for the good or otherwise of society, which, not understanding decoration, has lost its universal, is composed of incoherent individuals; dissension arises, and revolutionary salons are opened.

Ecole des Beaux-Arts.—The Ecole des Beaux-Arts remains faithful to its traditions, but is sadly marred in its source of inspiration; consequently, the Salon des Artistes Français, which represents the Ecole, becomes academic and lifeless. Many artists feel that many pictures are received that, though technically well done, lack in idea, and that many pictures are refused that, though lacking in academic finish, yet contain considerable idea. Thus other salons are organised, unity and strength are severed, and no great epoch-making painter exists; and all this is due to the growth of a wrong interpretation of the Renaissance, divorcement of the arts. Painting for painting's sake, beauty for beauty's sake, while our streets are dull and our clothes ugly.

Specialisation.—Specialisation cuts life into art on the one hand and unadornment on the other. Individualism for the sake of being separate, culminating in glorying in being an Indépendant.

Salon des Indépendants.—The Vernissage of the thirtieth exhibition of the Salon des Indépendants took place on February 28 in their new temporary premises in the Champ de Mars, close to the Ecole Militaire, where 3,626 exhibits are to be seen. Some works there are of considerable interest and good workmanship, but they are lost in the multitude of badly-drawn, dull-coloured, and eccentric bluffs. The Society of the Artistes Indépendants, based on the suppression of admission juries, has for purpose facilities to artists to freely exhibit their works to the judgment of the public, which means that admission is a question of hiring space. Decorative work is conspicuous by its absence except for a few trifling trinkets. Sculpture is limited to a few oddly conceived plasters. Cubism and Futurism is, perhaps, the most interesting feature of this barbaric show. The exhibition is of no national moment or of cosmopolitan importance. It is merely a money-making concern, and to decry it would be as useless as the exhibits. It is a financial success, and may be extremely useful in helping to bring about the death of mere eccentricity, which after a few years' repetition ceases even to raise a smile, and so this may act as a valuable example of the danger of one aspect of the modern mentality, namely, specialisation, the craze for expression for the sake of expression resulting in a colourless life.

Use of Extremes.—As the French have given us this, they may be the first to realise its extreme, for extremes are good to bring about improvement.

The Salon d'Automne.—The Salon d'Automne of last year, which only gave its eleventh exhibition, showed, with its forty ensembles of decorative art, a decided tendency towards collaboration and the application of the arts, decoration being the keynote. In this wise it is losing its salon characteristics, from which it seems reasonable to conclude that the most vital of the plastic arts was, should, and will be architecture, which is the most comprehensive of all, the least personal, and the most social, the most expressive of the national mood, the least salon-like, and, consequently, the most decorative.

ARCHITECTS' FEES.

In the King's Bench Division on Friday, March 27, before Mr. Justice Darling, a settlement was announced in an action in which Messrs. Mewes & Davis, of Maddox Street, London, sued Mr. S. J. Waring, of Oxford Street, W., to recover fees, as architects, alleged to be due in respect of work done in connection with the proposed erection of an hotel at The Hague, Holland.

Mr. Holman Gregory, K.C. (for the plaintiffs), said he was glad to announce that the parties had been able to arrange terms of settlement. These would be endorsed on counsels' briefs, and there would be a Judge's order if necessary.

Mr. Schiller, K.C. (for the defendant), mentioned that the parties had been friends for a very long time, and he hoped the friendly feelings that had existed between them would be renewed and continued. It had been suggested, he added, that Mr. Waring was promoting this scheme, and was himself going to get money out of it. That suggestion was due to an absolute misapprehension. He was simply interested in the scheme in the hope that his company would get the contract for furnishing and decorating the hotel. He had no personal interest in the matter whatever, and did not stand to make a shilling out of the whole business. On the contrary, he took on himself a personal liability. In the circumstances, he had met the plaintiffs in the manner endorsed on the briefs of counsel.

The nature of the settlement was not disclosed.

THE ECONOMICS OF THE HOME.*

A Woman's View of Domestic Architecture.

First and foremost I think I should put for consideration the unsuitability of much of our domestic architecture, if anyone but strong galley-slaves—galley-slaves chained down by force of circumstances—are to do the domestic work in our town and city houses. I shall perhaps be told that here I am at the very outset up against a brick wall, actually as well as metaphorically.

But I want to try to show you that, if only architects were on the side of the "Angels," the situation would not be so bad as it at first sight appears. I sometimes wish I could, in the interests of humanity, choose the wives, or, better still, that I had had a chance of choosing the mothers, of all our eminent and our rising architects. Failing that, I wish some woman of position and leisure, who is enthusiastic on this question of domestic needs in house planning, would follow the influential type of Frenchwoman of whom we have heard a great deal lately, and start a "Salon" for architects only.

Seriously, the matter is not so hopeless as it seems if we would only remove the ancient blinkers which blind our eyes to the enormous change that has come over the irreducible minimum needs of, say, the kitchen quarters, to take them first.

*** Extract from a Paper on "Domestic Service as a Career for Educated Women," by Mrs. M. A. Cloudesley Brereton.**

Let us, however, take heart from the fact that new houses are being built and new train services provided for all the outskirts of our great towns, and that here, at least, if the architect will help us, we can start right in a way we cannot do in houses badly designed as to labour saving and light and space for the workers, from the very foundations to the attics.

And here I would make one practical suggestion—almost an appeal I may say—to architects of modern houses and flats. Considering that not they themselves, but some unfortunate woman will have to run the house or flat they build, could they not, if it is impossible for the woman's point of view to be brought into the plans, at any rate leave a few blanks in the building for the woman who is to be the householder to fill up? May I appeal to them to have a little consideration for the mistress herself if she is her own gentlewoman servant, or is, at any rate, the chief servant in her own house with a more or less untrained maid-of-all-work, and for the same consideration for the educated woman-servant in the case of larger houses or flats, in the matter of cookers, fires, and hot-water arrangements? Why do architects go on building houses with cookers, fires, and boilers dated 1800 for the up-to-date woman who has long passed 1900?

I was talking at this Exhibition a few days ago on this point to the President of the Society of Architects, and he assured me that it was women's own fault that architects and builders felt it their bounden duty to finish off the house entirely before allowing the prospective tenant to put her nose inside it. He said that a house without a fireplace or kitchen range looked so unfinished, and that it was therefore considered better to plump down the stereotyped coal range and coal fireplace, because if the future tenant wanted a gas fire it was so easy to put one in front of the coal fireplace.

With all due respect to Mr. Percy Tubbs and his learned profession, I must say that this struck me as wanting in a knowledge of womankind, and as no small reflection on their powers of imagination. As to the latter point, any woman can very well imagine what a blank fireplace recess would look like if she could place in it, or have placed in it, the particular fire, whether for coal or gas, upon which she had set her heart in case she ever moved; while to see a hopelessly out-of-date coal grate instead of a blank space simply fills her with something akin to despair, because she knows by bitter experience how much easier it is in domestic matters to get what you want if there is not something already in possession which has to be dethroned and discarded.

As to the absurd and expensive plan of putting a gas fire in front of an antiquated coal fire and attributing the blame to womankind, I can only ask you which would the modern woman be more likely to choose: the money to buy a new Paris dress, or the gift of one of last year's gowns bought at a sale with the addition of needle, cotton, and scissors, and perhaps a few yards of chiffon, so that she might pull it to pieces and make an attempt to bring it up-to-date?

I therefore appeal to architects to advise builders of modern houses, where the ultimate desires of the tenants are unknown, merely to finish off neatly with the cheapest possible cement the fireplaces in the sitting-rooms and bedrooms and the recess for the cooker in the kitchen, and to leave the incoming housewife some scope for suggestion. In this way a certain amount of money would be left to the landlord to meet the tenant as to these necessary fixtures, which would otherwise be wasted on putting in old-fashioned stoves merely for them to be covered up with modern ones at the tenant's expense.

Where a house is being built to order for some special tenant the architect's way is, of course, clearer; but even here he might be of great service to the mistress of the house if he would place his knowledge and experience at her disposal, and attempt to enter into not only the building of her house, but the service problems which are likely to arise, and which he can, if he only will, reduce to a minimum of difficulty. If a better type of servant is to be looked for in the immediate future, the gas fire, the gas cooker, and the gas water-heater will, I am sure, play a very important part in the solution of the architectural difficulty.

We come next to the question of the houses already built: those in which, in 50 per cent. of the cases of those lived in by ordinary mortals with a medium-size purse, almost every architectural fault that the mind of man or fiend could devise has been committed. The stairs are frequently narrow, dark, and steep; the passages long, winding, and full of corners introduced in the most ingenious way; the linen cupboards, larders, and all the essential places for storage that a country woman prides herself upon, and superintends so thoroughly herself, are dark, unventilated, and frequently as far away from the place they serve as ingenuity or stupidity can put them. The larder, perhaps, is at the far end of the basement from the kitchen, because an endeavour was made to put the kitchen in the front so that it might have a suspicion of daylight, if only through a chink of glass in the pavement above. Then, having planked the kitchen down there, it was found that the larder must go at the back in the most inconvenient place in relation to the kitchen, because the coal cellar was bound to come at the front of the house in order that a hole might be made in the pavement through which to shoot the necessary coal into a "black hole of Calcutta." One result of this alone is that food, which in a well-designed house would be transferred to a common plate and put straight into a cool larder, is, instead, when brought from the dining-room or brought in from the tradesmen's entrance, allowed to make a temporary sojourn on the kitchen table and in proximity to the glowing kitchen range, to be the hot-bed for flies and the breeding-ground for any obnoxious germs that happen to be about.

Owing, I suppose, to the fact that servants were considered as inferior creatures, one is frequently driven to suppose, even where there is no basement, that the architect designed the drawing-rooms, but the devil designed the kitchens.

We have heard from Dr. Meredith Young what has been the opinion of medical men and women for years: that the kitchen quarters, where your food is prepared, cooked, and stored, where your salads are washed and your fowls are trussed, are more important to the health of the house than the furnishing and decoration of the dining-room or drawing-room, or even the ventilation and the warming of the bedrooms.

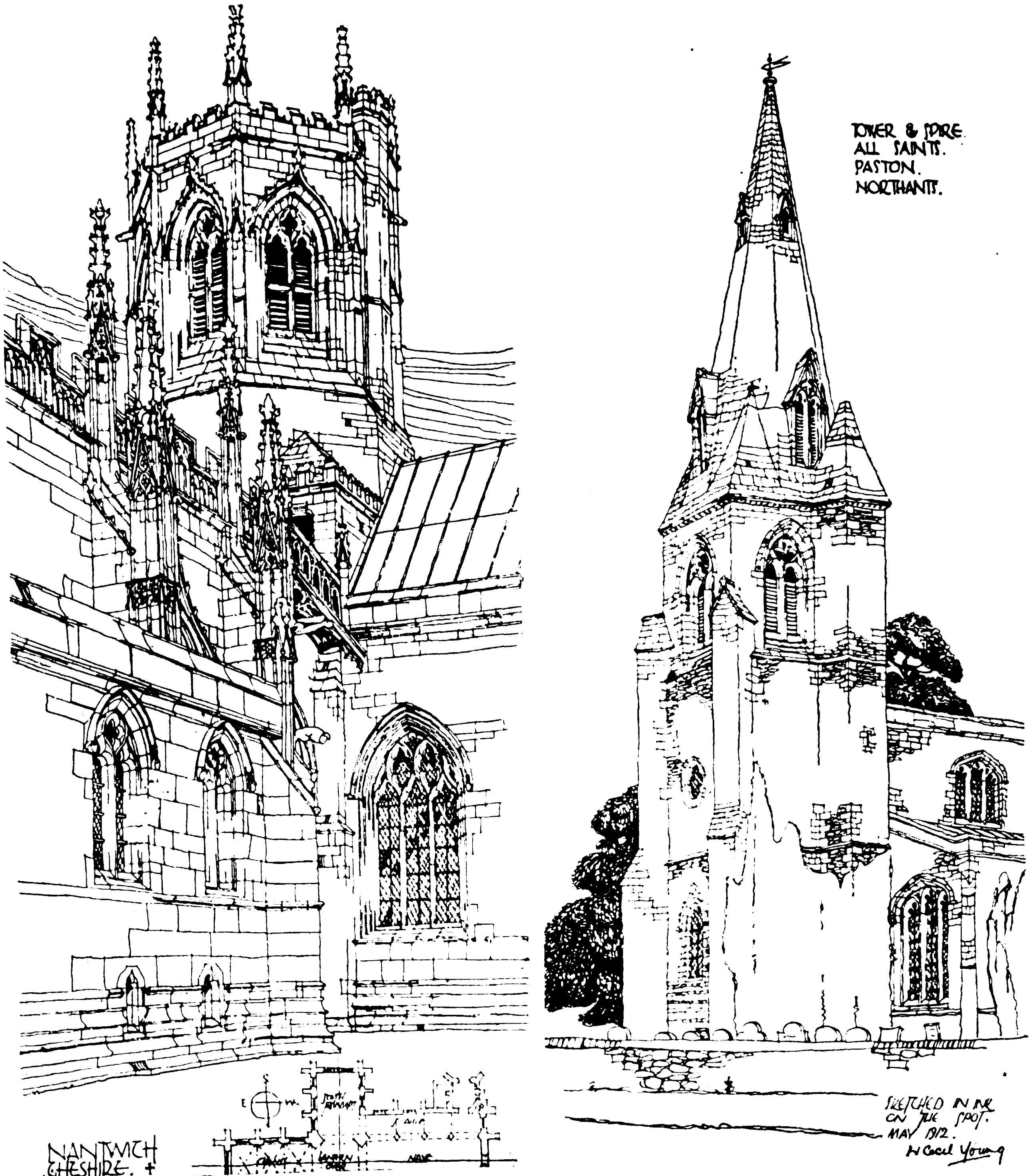
Yet even how few of us women, in spite of our efforts, would choose to take a foreign visitor with pride first and foremost to look at our kitchens, larders, pantries, storerooms and linen cupboards?

I look forward, however, to the day when the town-bred woman shall consider the pride of her household to be these departments, just as the country-bred woman would be more offended if you did not take an interest in her dairy than if you expressed but scant interest in the billiard-room.

The question of modifying these out-of-date houses is one that has got to be seriously considered before any attempt at engaging really educated women as servants can be thought of. And they are, to my mind, responsible for a very large proportion of what we call the servant problem to-day, for we have educated and given wider and loftier hopes to the girls of what used to be our servant class; we have helped them to move forward in every direction if they so desire; we have aroused in them a discontent, divine or otherwise; but we ourselves, providing we refurnish and refurbish our dining-rooms, drawing-rooms, and bedrooms to bring them up-to-date, have been content to allow our basements to remain very much what they were twenty, thirty, and forty years ago.

If women would rise in a body and protest against the basement house, I am quite sure that architects would find some way, in these days of modern engineering, of dispensing with them, even in houses too precious to be pulled down, or of at least mitigating their undoubted unsanitary influence upon the whole lives of the occupants who live above them, not to mention the servants who live and work in them. In very large houses, where they constitute practically the whole working department, much can be done by concrete flooring, white paint and varnish, natural daylight grasped from artificial sources, and systems of exhaust fans, working in connection with the ordinary heating arrangements, to keep them sweet and pure so far as may be. Lifts to mitigate the stair difficulty, and the provision somewhere higher up for a sitting-room for the servants when they are off duty but not going out, can very often be arranged by turning the basement servants' hall into a box-room or something else, so liberating a room where real sunshine and daylight can penetrate.

But the problem, perhaps, is not so acute in houses of this size, because, with a large staff, liberal outings can generally be managed, and whatever form of lighting is used in the upper regions gas is generally used for these servants' quarters, if only for the sake of its cheapness; and we know by experience that the servants who get this cheap light generally get the best of the bargain. They can have ventilating lamps, and, as they require to burn them nearly all day, they have the nearest approach to daylight which can be given. But it must not be supposed that anything can make up from a hygienic point of view for real daylight and real sunlight, and for a current of fresh air from outside passing freely through the apartments.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TOWER & SPIRE ALL SAINTS. PASTON. NORTHANTS.
SKETCHED IN INK ON THE SPOT. MAY 1912.
W Cecil Young

FROM DRAWINGS SUBMITTED FOR THE PUGIN STUDENTSHIP, 1914.—By Mr. W. CECIL YOUNG (*Holder*).

The basement problem in houses much smaller (say, from £50 a year to £200) is a much more serious one, because in these houses one of two things generally happens. In the one case the mistress and mother of the household is driven to spend a very great proportion of her own time in the nether regions with the servant, if she has one, and alone if she has not, and the husband cannot be surprised if it is generally a very worried and anæmic person who meets him night by night on his return from works or office.

The woman who does not do this runs another danger. The trying stairs and the distances from her own living-rooms to the kitchen quarters tempts her, perhaps, to keep far more away from her kitchen, scullery, pantry, and so on than is good either for health or for pocket. Yet she has to consider, besides her own inability to live on the kitchen stairs, two things: one is her peace of mind and the other the necessity for trying to keep her servants. She is not likely to do the latter if she is in and out the kitchen too much, for the simple reason that she never can go to the kitchen as a purely ordinary and natural thing except at stated times to give orders without going down definitely for some purpose, which may to servants, unless they are quite of the best type, merely seem to be "prying."

If the kitchens were near to the dining-room and on the same floor, that great gulf which gets so often fixed between mistress and servant would never exist. In the case of attempting lady servants this is a very important factor.

It seems to me to be worth while, at any rate when a large number of basement houses in one district fall empty and the landlord has to make a bit of a gamble as between turning them into unsatisfactory tenements or keeping the old-fashioned class of tenants, to consider whether he would not be able to get the same house-rent, or even more, if he took certain drastic measures with regard to the basement portion. In many cases, I believe, it would not be beyond the wit of the modern housing engineer to pull away such a portion of the middle wall of the lower rooms and of the front and back walls of the house, so as to make a kind of covered playground underneath the house, which might be asphalted, thereby sacrificing the basement floor. Above this, the drawing-room might be turned into kitchen and scullery, with a

(*Continued on page* 345.)

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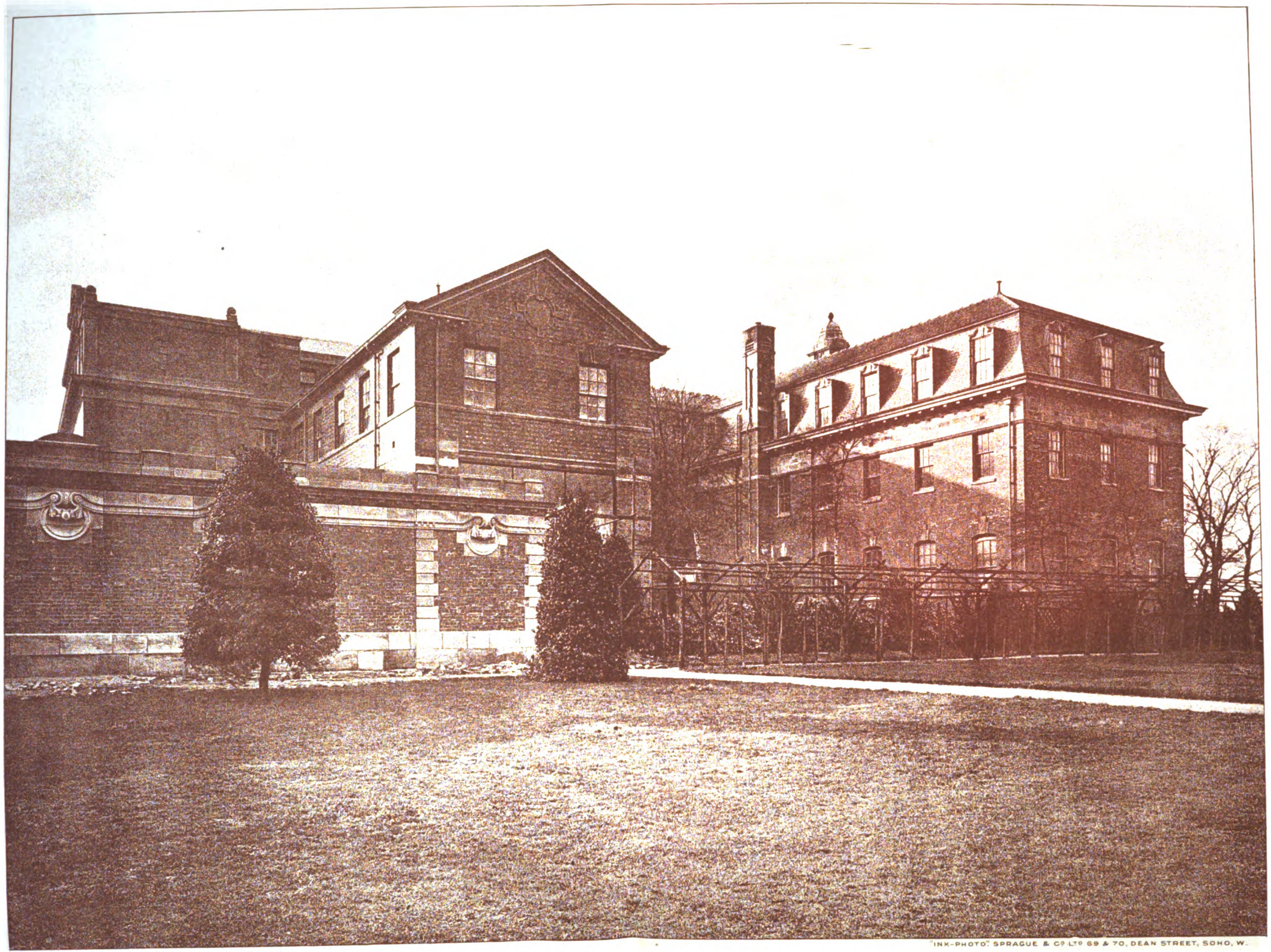

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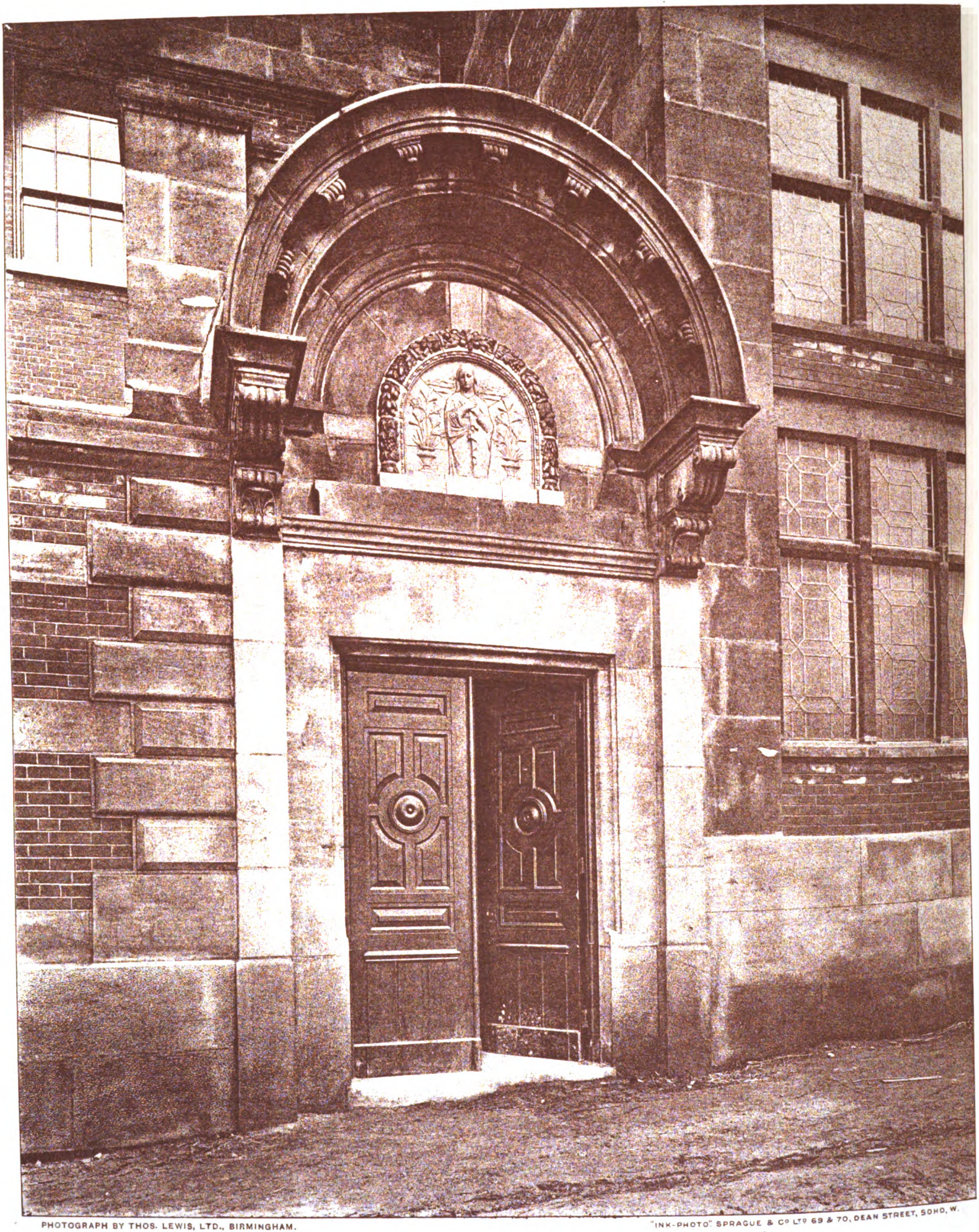

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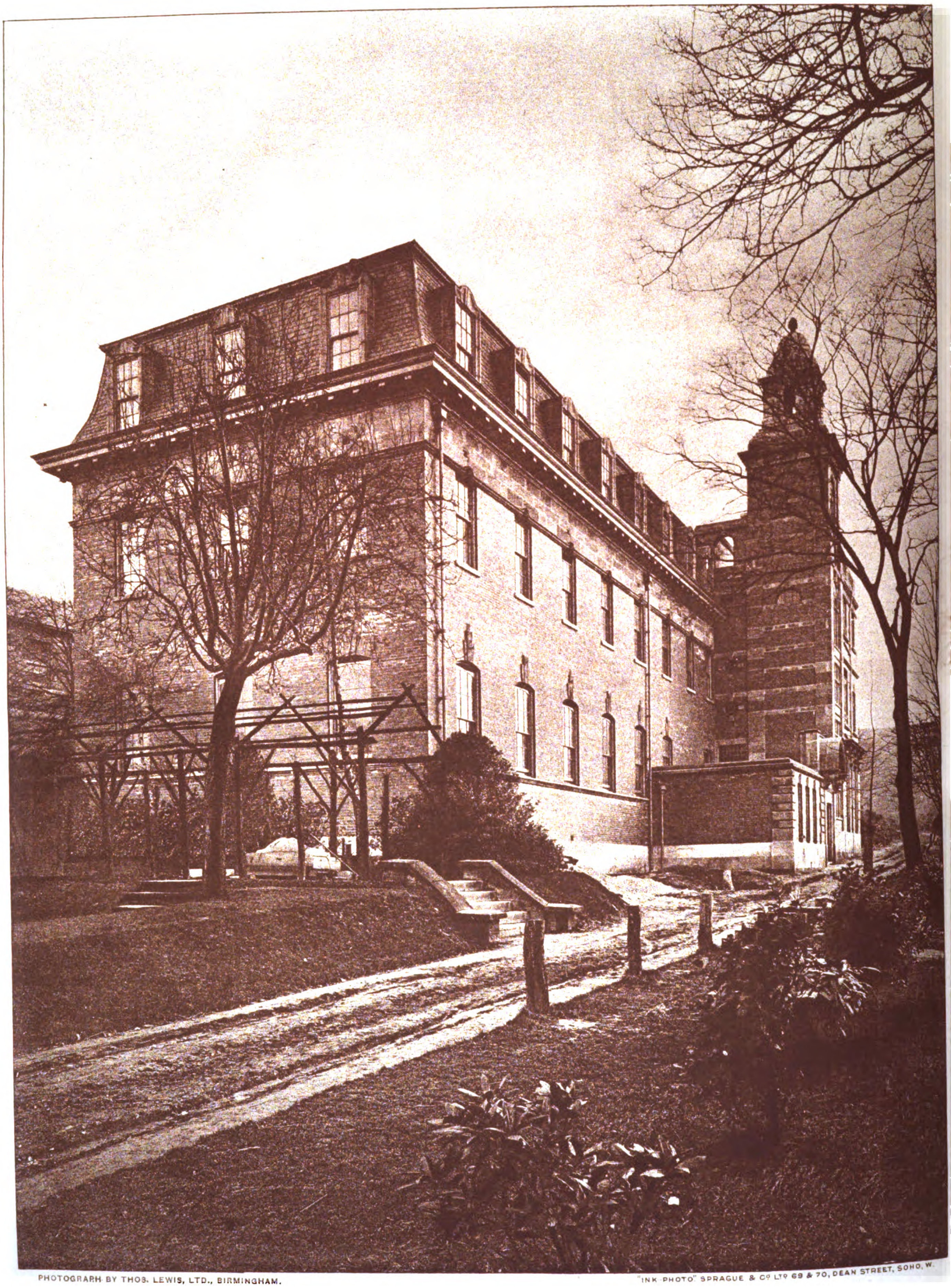

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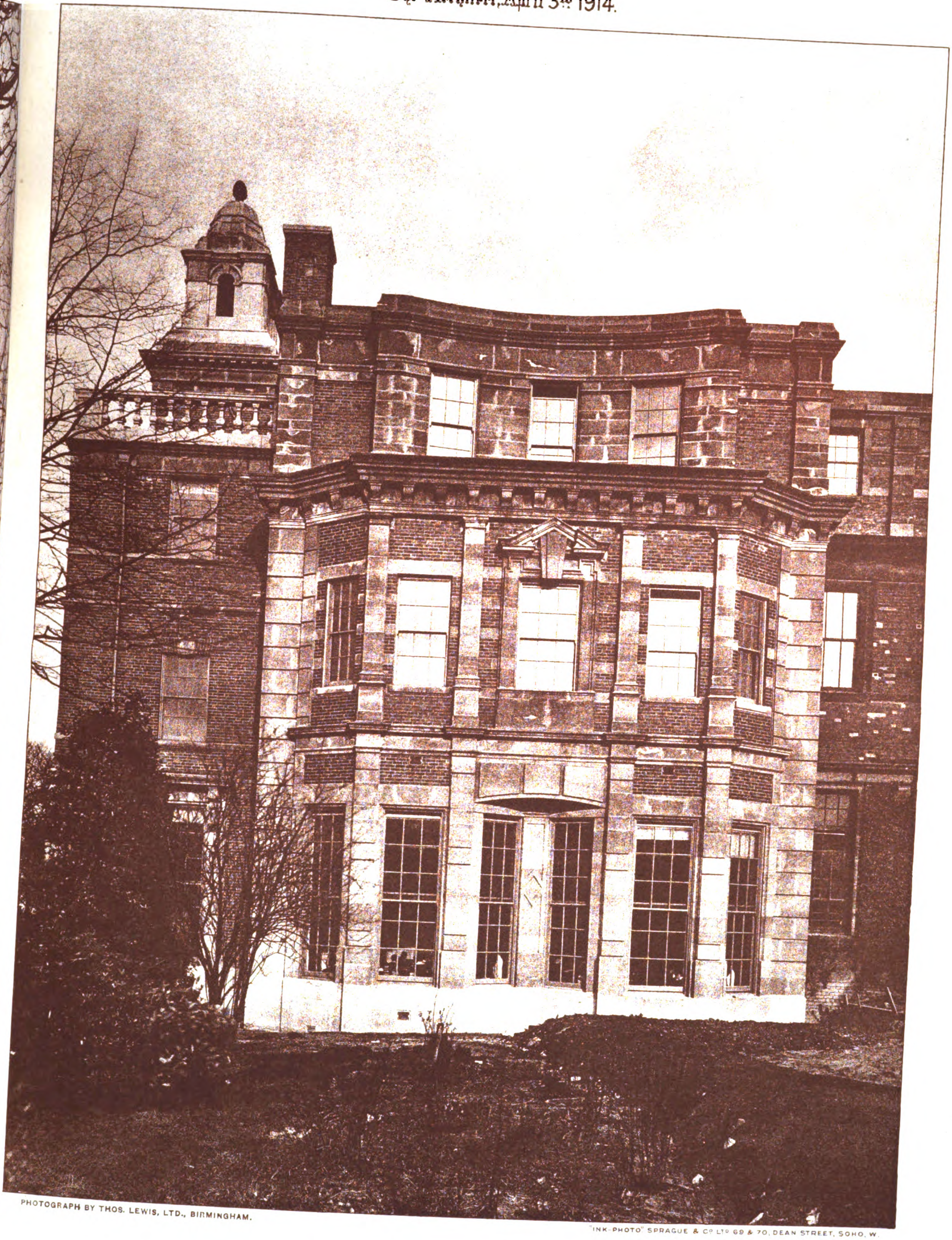

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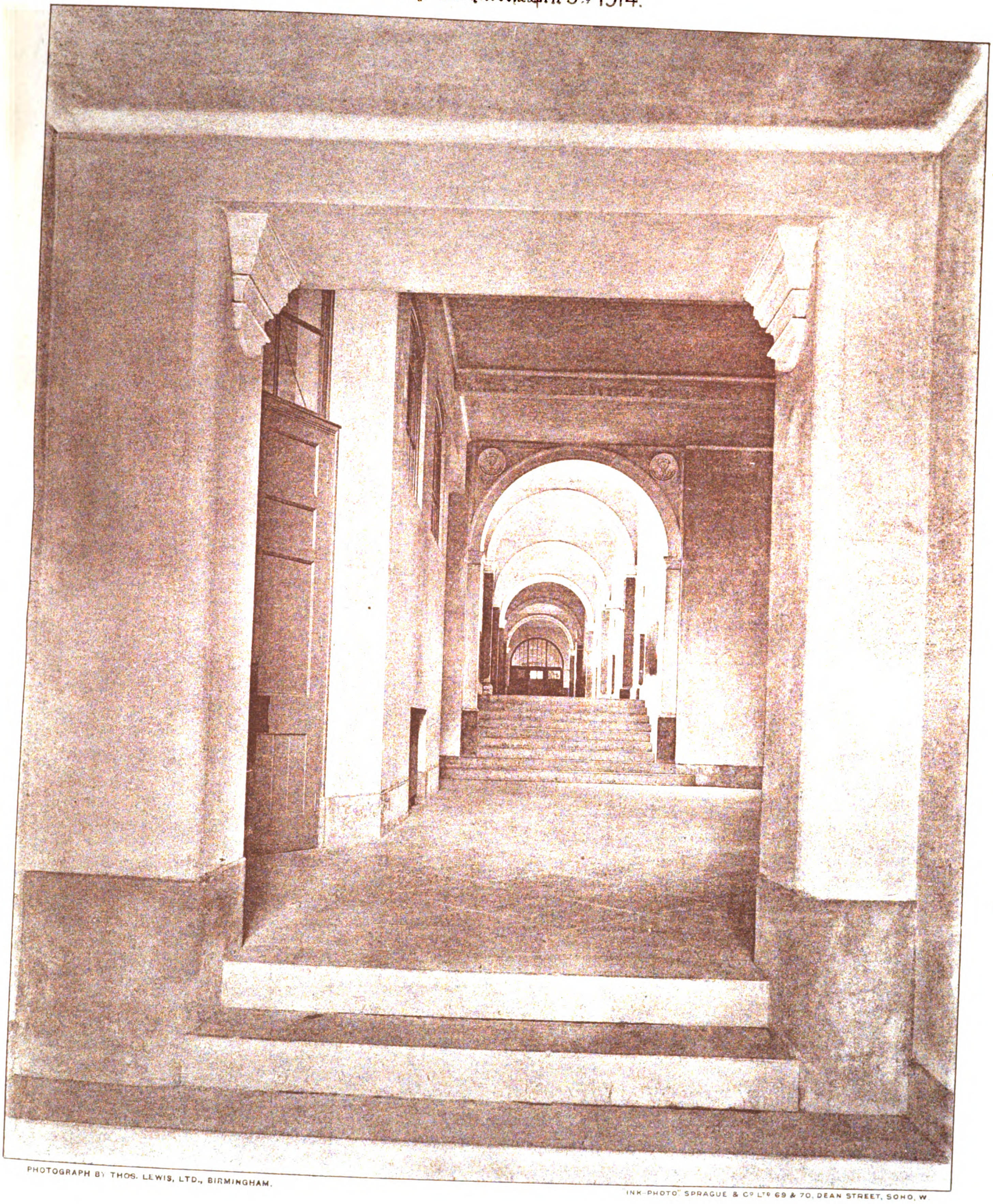

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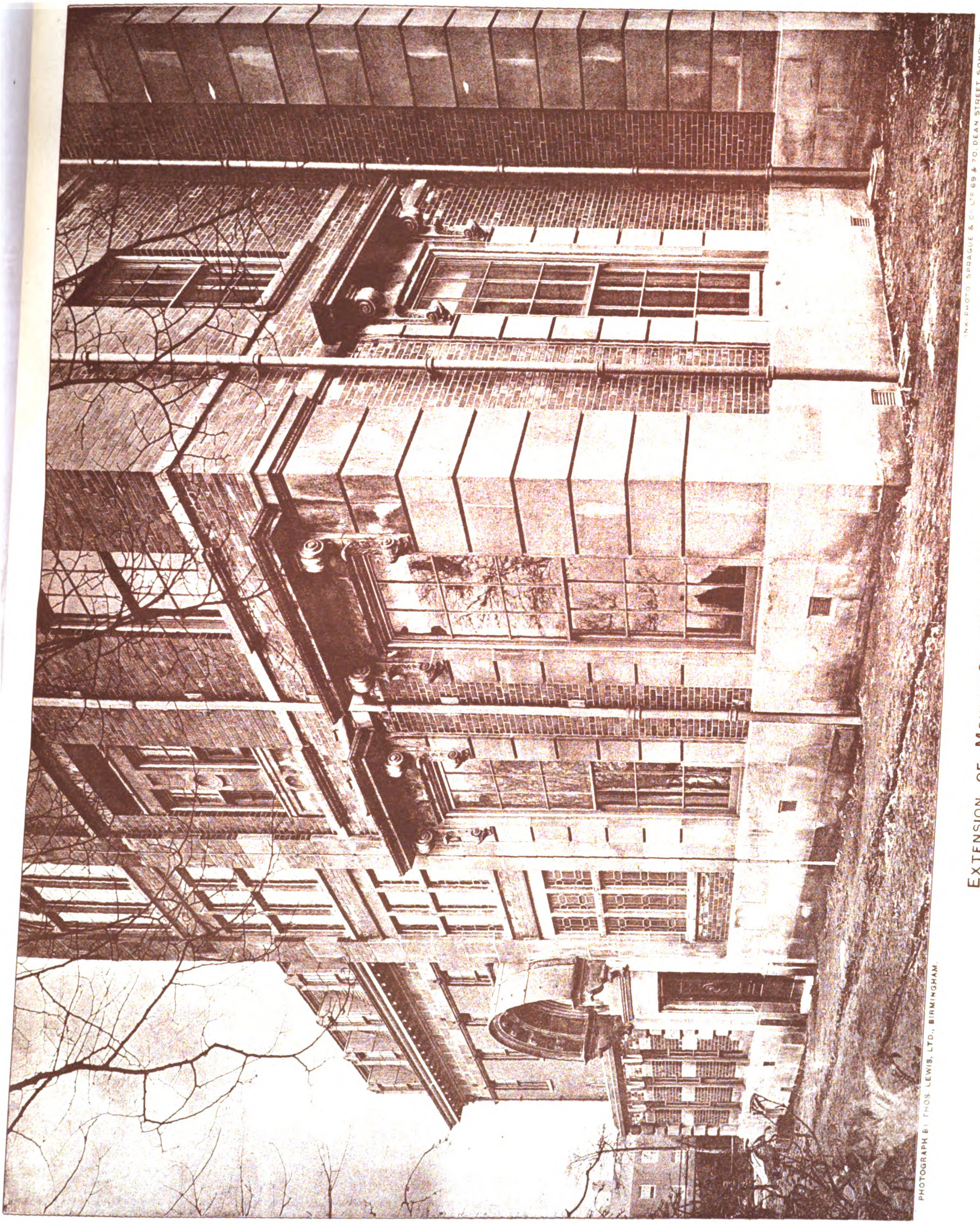

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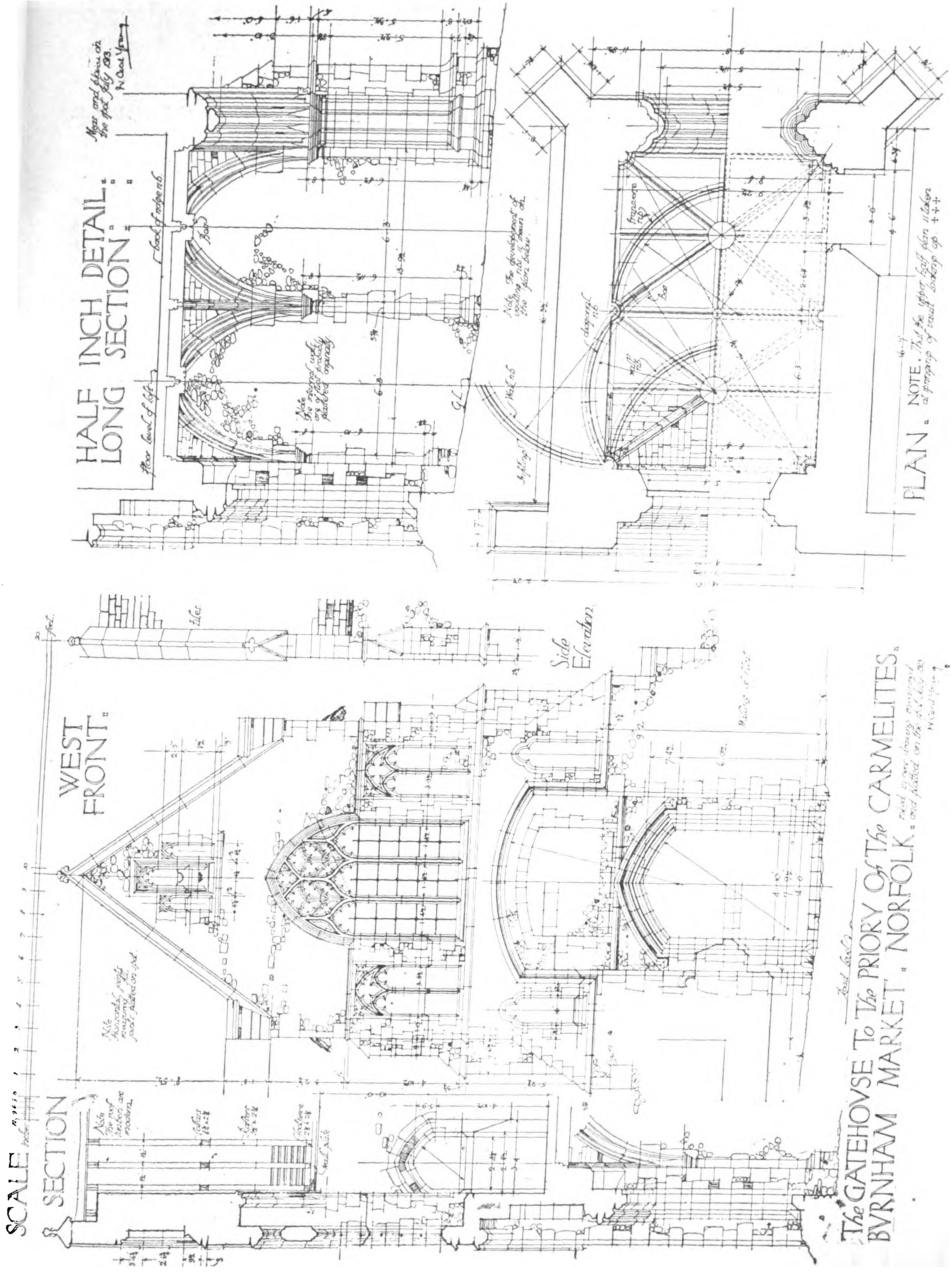
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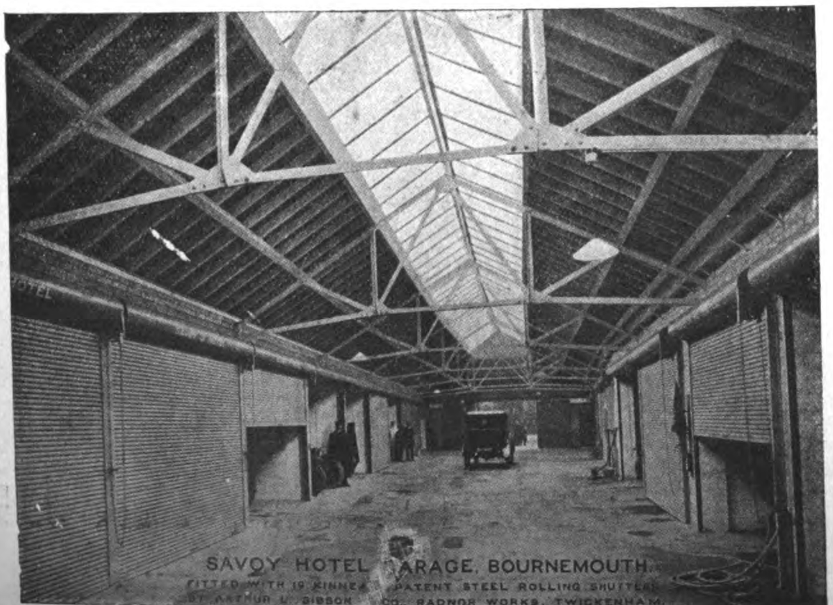
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modern gas cooker, gas water-heater, and small gas fire, and if a drawing-room were still needed this might be obtained by using what had been designed as a best bedroom.

In many cases, with our simpler home-life, which I hope is coming, a dining-room, which is also the family living-room, would be sufficient, provided the mistress, with her gas fire in her bedroom, could make it somewhat of a sitting-room for herself when she meant to be alone, and, if there were grown-up sons and daughters, they could do the same themselves in their own little bedrooms. If there were a nursery, of course the children's problem would solve itself in the same way with modern appliances; and the argument for doing away with a drawing-room would be still stronger while husband and wife were practically the only people, except outside visitors, to use the combined dining-room and drawing-room.

A house so transmogrified would, I believe, be very popular; for it would have all the advantages of the house with no basement and none of the disadvantages of houses built flat on the soil, while the removal of all coal and the transference of the kitchen to be next door to the dining-room would be a perpetual source of saving to the tenant, for one servant could certainly do the work of two under such conditions.

If women, who cannot do more than adapt their basement arrangements until their leases are up and they make up their minds to move, would firmly set their faces against going into basement houses again I am convinced that owners of house property with basements, and housing engineers between them, would find some way out of the difficulty, where the houses are in too good condition to allow of the enormous cost of razing them to the ground and rebuilding them.

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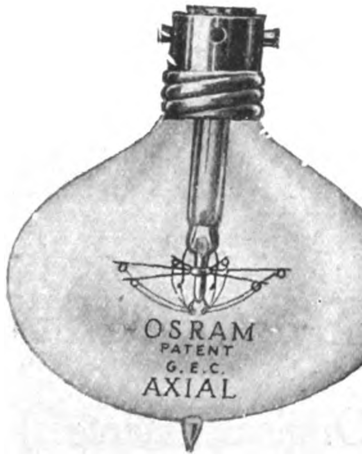

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A LIST OF WORKS PROJECTED OR COMMENCED.

(N.B.—Local Authorities, architects, and others are invited to submit full particulars for insertion in this weekly list. Where districts are not entered against names of architects and builders the address is as a rule local.)

ENGLAND.

Buckinghamshire.

Buckingham.—Extensive additions at Barton Hartshorne, for Colonel Trotter.

Chesham.—Sunday School, New Town, for Townfield Baptist Church.

Cambridgeshire.

Whittlesey.—Council School, Broad Street: infants' department, for the Isle of Ely Education Committee.

Cheshire.

Crewe.—Elementary Council School, Newdigate Street.

Macclesfield.—Garage, King Edward Street, for the Automobile Company. Messrs E. & A. Firth, contractors, Catherine Street.

Nantwich.—Grammar School.

Northwich.—Eight houses, Siddall Street, for Mr. W. Bowyer.

Two houses, Wellington Street, for Mr. F. Whitehead.

Cornwall.

Lostwithiel.—Workmen's dwellings, Rosehill and Victoria. Mr. Knight, Borough surveyor.

St. Dennis.—Cemetery Chapel (£1,000).

Cumberland.

Flimby.—Four workmen's dwellings. Mr. J. Henney, architect, 10 Fleming Square, Maryport.

Penrith.—Council School. Mr. J. Forster, architect, 13 Earl Street, Carlisle.

Satterthwaite.—Parish Church: partial reconstruction, &c. (£1,900). Mr. Carter, architect, Central Buildings, Windermere.

Derbyshire.

Chesterfield.—Penmore Hospital: tuberculosis pavilion. Messrs W. H. Ward, architects, 30 Paradise Street, Birmingham.

Earl Sterndale (near).—Cheese factory, Glutton Bridge. Messrs. G. J. Bagshaw & Son, contractors, Heath Street, Buxton.

Normanton.—Public Library. Mr. C. B. Sherwin, architect, 32 St. Peter's Street, Derby.

Shirebrook.—Fifty-six Council houses, Model Village, and forty-eight in Carter Lane. Mr. F. Cook, architect, 54 Leeming Street, Mansfield Woodhouse.

Devon.

Barnstaple.—Thirty Council cottages, Cranbourne Lane.

Chulmleigh.—Four cottages, Collaton. Mr. H. Reed, F.R.I.B.A., architect, 12 Castle Street, Exeter.

Exminster.—County Asylum: nine pairs of attendants' cottages (£5,500).

Torquay.—Theatre. Mr. F. G. Moore, architect, 9 Fleet Street.

Durham.

Annfield Plain.—Premises, Fines Terrace: alterations, for Messrs. E. & P. Reay.

Surgery, Durham Road, for Annfield Plain Medical Association.

Blackhalls Colliery.—Twenty-six houses, for Durham Estates, Ltd. Mr. J. W. Hays (of Wingate), architect; also

Wingate.—Two houses.

Essex.

Chelmsford.—Seven houses, Swiss Avenue. Mr. J. Gowers, builder, Park Road.

Eight houses, Arbour Lane, for Mr. K. Dack.

Shop and Garage, Mildmay Road, for Mr. F. Cheat.

Coggeshall.—Council School for 200 places.

Colchester.—Technical College: engineering school block (£500).

Epping.—Special Subjects Centre (£820).

Messing.—Council School (£1,620).

Southend-on-Sea.—Club and shops, Elm Road, for the Conservative and Unionist Club, Ltd.

Elton Laundry, Southchurch Road: alterations and extensions, for Mr. W. Arrol.

Gloucestershire.

Gloucester.—Theatre, Westgate Street, for Messrs. Peele.

Staple Hill.—Council School: Domestic Science Centre.

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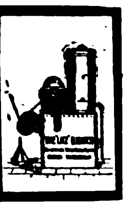

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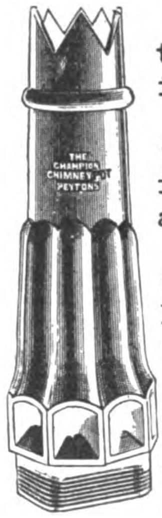
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Bishop's Waltham.—Territorial Drill Hall, Newtown, for No. 3 Company R.G.A.

Liphook.—"Royal Anchor" public house: alterations.

Petersfield.—"Royal Oak" public house: alterations.

Portsmouth.—Dockyard restaurant and dining-rooms for 1,000 men.

HERTFORDSHIRE.

Bishop's Stortford.—Sunday Schools. Messrs. Spalding & Myers, AA.R.I.B.A., architects, 36 and 37 King Street, Cheapside, London.

LANCASHIRE.

Accrington.—Carnegie Public Library, Oswaldtwistle.

Bolton.—Eastern Fever Hospital: tuberculosis pavilion.
Six houses, Hulton Lane, Deane. Mr. T. E. Smith, architect, Central Chambers, Fold Street.

Burnley.—Imperial Mill: extensions. Messrs. G. & S. Keighley, architects, 23 and 27 Nicholas Street.

Leigh.—Infirmary: extension.

Liverpool.—Proposed Picture Theatre, Scotland Road and Cavendish and Bow Streets, for Mr. E. Haigh.
Proposed Picture Theatre, James Street and Church Road, Garston, for Mr. A. Wright.
Proposed Picture Theatre, Tunnel Road and Moorgate Street, for Mr. R. D. French.

LEICESTERSHIRE.

Melton Mowbray.—Council Schools. Mr. S. P. Pick, F.R.I.B.A., County architect, 6 Millstone Lane, Leicester.

MIDDLESEX.

Hendon.—Fifty workmen's dwellings, Child's Hill (£10,000).

MONMOUTHSHIRE.

New Tredegar.—Constitutional Club. Messrs. Seaborne & Cayley, architects, Arcade Chambers, Ystrad Mynach. Mr. E. James (of Ystrad Mynach) contractor (£1,407).

NORTHAMPTONSHIRE.

Daventry.—Secondary School.

NORTHUMBERLAND.

Newburn.—Dental Clinic.
Elementary School for 350 places.

NOTTINGHAMSHIRE.

Mansfield.—Infectious Diseases Hospital.

SHROPSHIRE.

Bridgnorth.—Twelve working-class dwellings, Bacon's Croft and Cliff Road.

Oakengates.—Eighteen workmen's dwellings.

SOMERSET.

Bath.—Premises: rebuilding for Union of London and Smith's Bank, Ltd.

Langport.—Drill Hall, the Avenue.

Meare.—Working-class cottages. Messrs. Petter & Warren, R.I.B.A., architects, Church Street, Yeovil.

Taunton.—"London" Hotel: additions. Messrs. Samson & Colthurst, R.I.B.A., architects, 1 Hammet Street (also at Bridgwater).

STAFFORDSHIRE.

Cobridge.—Premises for Burslem and District Cooperative Society. Messrs. Watkin & Adams, architects, Swan Chambers, Burslem.

SUFFOLK.

Lowestoft.—Sanatorium, Rotterdam Road: ward pavilion and porter's lodge. Mr. G. H. Hamby, A.M.I.C.E., Borough surveyor.

SUSSEX.

Brighton.—Clock Tower, Queen's Park.
Elementary Council School (£20,000).

Cowfold.—Workmen's cottages.

Hastings.—East Sussex (King Edward VII. Memorial) Hospital for 102 patients (£50,000).

Haywards Heath.—Congregational Church.

Patcham.—Public Elementary School (£19,250).

WARWICKSHIRE.

Bedworth.—Five houses, Newtown Road, for Messrs. J. Magson.

Bell Green.—"Bell" Hotel: alterations for Messrs. Johnson & Mason.

Birmingham.—Northfield Free Library: rebuilding.

Foleshill.—Two houses, Windmill Road, for Mr. D. J. Wagstaffe.
Three shops, Little Heath Road, for Mr. T. Harris.

Kenilworth.—Post Office. Mr. H. Quick, architect, 35 Hertford Street, Coventry.

Marston Green.—Children's Homes: additions and alterations to farm buildings.

Walsgrave-on-Sowe.—Stores for Coventry Co-operative Society.

WILTSHIRE.

Bradford.—Council School for 150 places.

WORCESTERSHIRE.

Droitwich.—Police Station.

YORKSHIRE.

Brighouse.—Proposed Wesleyan Sunday Schools for 400 places.

Carcroft.—Miners' Institute (£1,000 to £1,500).

Leeds.—The "Market" Tavern, George Street: alterations. Mr. W. T. Lancashire, City engineer.

Rawmarsh.—Wesleyan Sunday School (£2,600).

Rotherham.—Y.M.C.A. premises.

Woodlands (near Doncaster).—Hotel for the People's Refreshment House Association, Ltd.

York.—Purey Cust Nursing Home.

WALES.

Aberayron.—Cottage Hospital. Messrs. D. Davies & Son, architects, Penrhiwllan, Henllan.

Barmouth (near).—Tuberculosis Hospital, Talybont. Mr. H. Jones, County architect.

Connah's Quay.—Town Hall (£10,450).

Denbigh.—North Wales Lunatic Asylum: alterations and improvements (£8,500).

Newtown.—Tuberculosis Hospital.

Swansea.—Royal Metal Exchange: additions and improvements (£4,000). Messrs. Lloyd Bros., contractors, Argyle Street.

SCOTLAND.

Darnley.—Fire Station, Nitshill Road (£5,000).

Dumfries.—Picture House, corner of English Street and Hood's Loaming. Mr. Gunn (of Glasgow), architect.

Dundee.—Board School, Bellfield Street.

Edinburgh.—Wash-houses, M'Leod Street (£5,500).

Falkirk.—St. Modan's Established Church, corner of the Pleasance and Hodge Street (accommodation for 750). £5,000.

Glasgow.—Coupar Institute, Cathcart: reconstruction (£17,500).

Kilsyth.—Parish Church Manse: alterations, &c. (£800).

Peebles.—Cinematograph Theatre, near Northgate. Messrs. Cowieson & Co. (of Glasgow), architects.

Portobello.—Picture House, corner of High Street and Hope Lane, for the Central Picture House, Portobello, Ltd.

IRELAND.

Brookeborough.—R.C. National School (£700).

Cashel.—Forty working-class dwellings (£5,700).

PATENT SPECIFICATIONS PUBLISHED, MARCH 26, 1914.

Selected and abridged by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

No. 114. Jan. 2, 1913.—The Hewitt Patent Kiln Co., Ltd., 21 Charterhouse Street, E.C., and W. W. Hewitt, Knockhall Lodge, Greenhithe, Kent. Process and apparatus for making bricks, cement, and the like.

2,197. Jan. 27, 1913.—Dr. Fenaroli, 38 Via San Vincenzo, Milan, and Soc. Anon. "Saces," 3 Via Caffaro, Genoa. Glazing natural and artificial stones and plastic materials.

4,892. Feb. 26, 1913.—O. B. Rattenbury, of H.M. Dockyard, Devonport. System of reinforcing concrete by means of bars of ordinary type combined with links of special form.

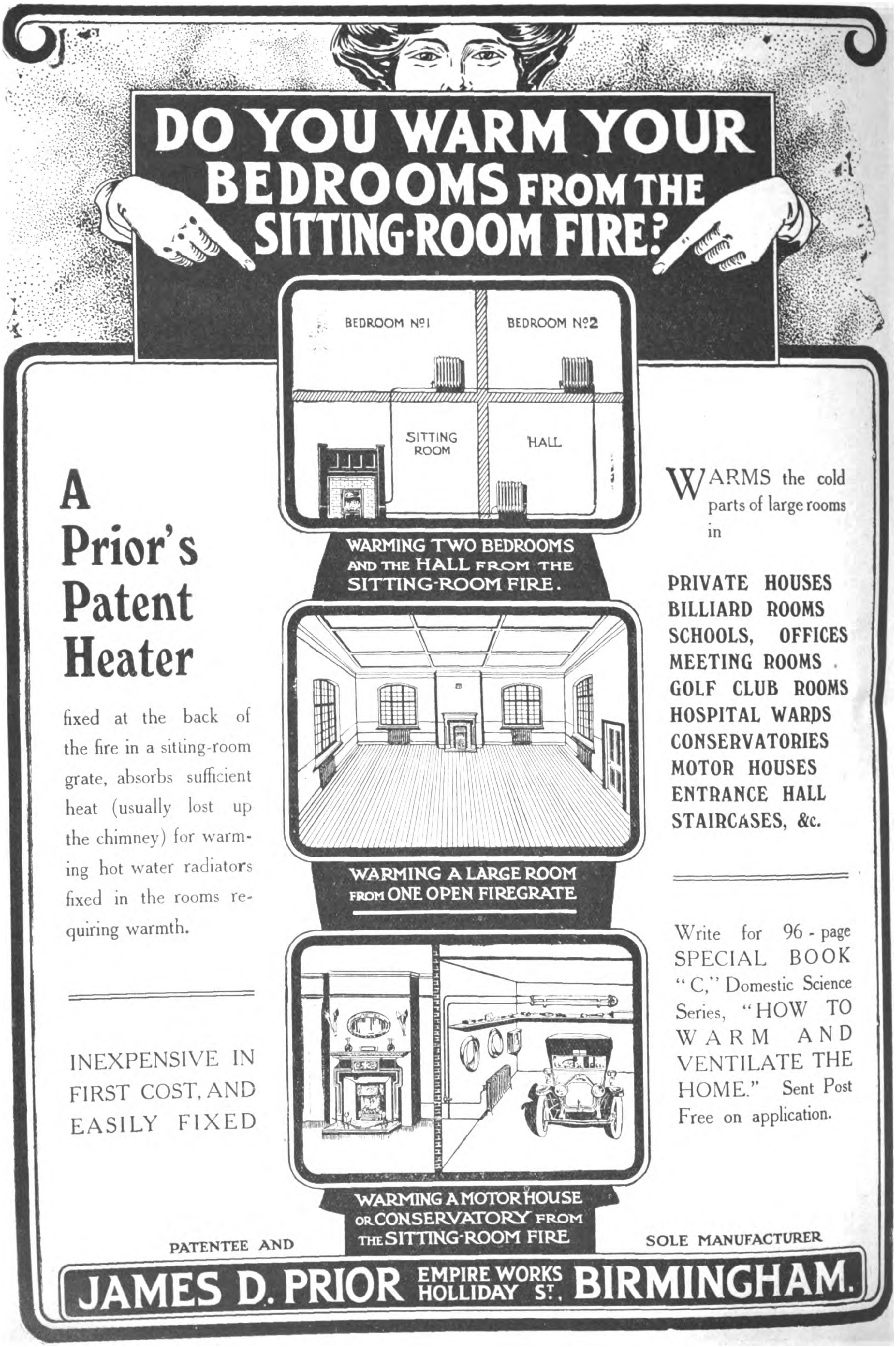
13,390. June 10, 1913.—Thos. Boyter, 373 Oldham Road, Failsworth, Manchester, architect. Means and method of ascertaining the superficial areas of maps, plans, diagrams, and other scale drawings.

18,272. Aug. 11, 1913.—H. R. Wing & Ed. Webb, 15 St. James Square, Wolverhampton. Ventilators.

18,504. Aug. 14, 1913.—Otto Zumkeller, 16 Alte Strasse, Leipzig-Plagwitz, Germany. Locks and bolting devices for doors.

21,093. Sept. 18, 1913.—Alfred Cooksley and Oscar Schlegel, 21-25 Tabernacle Street, E.C. Mortising machines.

22,058. Sept. 30, 1913.—E. O. F. Viola, Fashion Street, Spitalfields. Pipe couplings.



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22,924. Oct. 10, 1913.—Dated under International Convention April 14, 1913. Fritz Neumerkel, 53 Margitrakpart, Budapest 11, Hungary. Processes for the production of lime in block form.

23,011. Oct. 11, 1913.—Dated under International Convention Nov. 29, 1912. Arthur Hardoncourt, 279 Henry Street, New York. Wall constructions and tools or blocks therefor.

24,420. Oct. 28, 1913.—Dated under International Convention Aug. 11, 1913. S. W. Flesheim, 10624 Grantwood Avenue, Cleveland, Ohio, U.S.A. Processes of hardening concrete structures.

5,720. March 7, 1913.—R. R. Reeves, Walton Mills, Walton-on-Naze, Essex. Apparatus for ventilating sewers, drains and the like, and preventing the formation of sewer gas; applicable also for ventilating and deodorising rooms.

7,266. March 27, 1913.—Arthur Drew, Burlington House, Bickley Road, Leyton, Essex. Extension of ordinary ladders and the like.

25,416. Nov. 6, 1913.—Alfred Leroi, Konigsteinerstrasse 22, and the Firm Bamberger Leroi & Co., Mainzerlandstr. 142, Frankfurt-am-Main, Germany. Waste pipe valves for earthenware baths.

25,603. Nov. 8, 1913.—Dated under International Convention April 24, 1913. Ernst Heinrich, 41 Heilmannstr., Planegg, near Munich. Tip-up roof and skylight.

25,922. Nov. 12, 1913.—F. J. Watkinson, Strathroy, Ontario. Window sashes.

Any of the above specifications may be obtained from J. D. Roots & Co.

Correspondence

[The Editor will not be responsible for the opinions expressed by Correspondents.]

Registration by "Charter" or by "Bill."

SIR,—Plots and their discoveries are in the air even in architectural politics, if I may judge from communications which are reaching me containing copies of a letter (see enclosure) sent on March 13 by the President of the R.I.B.A. to the provincial architectural societies, on the above subject.

In that letter it is stated that a resolution was "unanimously" passed at a special general meeting of the R.I.B.A. on January 5 last, committing the Institute to a new policy of "Registration by Charter" instead of "Registration by Bill," which policy is to be pursued by the R.I.B.A. Council, relying upon that mandate.

It goes on to say that the Council of the Institute have decided to oppose the Society of Architects' Registration Bill when it is presented to Parliament on the ground that, if carried, it will be in the highest degree injurious to the interests of the Royal Institute and conflict fundamentally with the policy to which that body is now committed.

As the text of this Bill has been published, architects can form their own opinion on this statement, which in my judgment is contrary to fact. In regard to the resolution referred to, the printed minutes of that meeting state that it was carried *nem con*, and that the meeting was attended by 179 members, 15 per cent. of whom were members of the Council. If this is a correct record, then the vote was not unanimous. In any case, it does not necessarily represent the views of the general body.

Presumably the present decision of the Council of the R.I.B.A. to oppose the Society's Registration Bill has been arrived at because they are aware that the alleged constitutional disability which it is understood in their opinion prevents the Institute as a body from promoting a Registration Bill also prevents them as a body from opposing one. Such opposition as is suggested is limited under these circumstances to the persons concerned, and does not necessarily represent the feeling of the general body or even of all the members of the Council of the R.I.B.A., much less the wishes of the majority of the profession. It will therefore be possible to discount such opposition should occasion arise.

It was a foregone conclusion that the Council of the R.I.B.A. would, owing to their change of policy, oppose the Society's Registration Bill (though I perhaps might mention *en passant* that they have forgotten to directly notify the Society of their intention); but it has not been clear hitherto on what grounds they would endeavour to justify such opposition. It is a great thing to have secured a definite statement on this point, and the admission that action will be taken only in the interests of the Institute, and therefore, by inference, not because the Council consider the Society's proposals to be inimical to the interests of the profession or of the community.—Yours faithfully,

C. MCARTHUR BUTLER,
Secretary of the Society.

March 30, 1914.

(COPY.)

March 13, 1914.

Dear Sir,—Your Council will have observed in the report of the special general meeting of the R.I.B.A., on January 5, 1914, that a resolution was unanimously passed on the motion of Sir Aston Webb, which committed the Royal Institute of British Architects to a new policy which may be briefly defined as "Registration by Charter" instead of "Registration by Bill."

This policy is the outcome of years of deliberation by successive committees representing both the Royal Institute and its Allied Societies throughout the country, and it will now be energetically pursued by the Council, relying upon the mandate expressed by a unanimous vote of the general body, and they are confident they will have the support of all the Allied Societies in the work that lies before them.

You are no doubt aware that the Society of Architects propose to introduce into Parliament at an early date a Registration Bill, which, if carried, would be in the highest degree injurious to the interests of the Royal Institute, and would conflict fundamentally with the policy to which the Royal Institute is now committed. My Council have decided to oppose this Bill when it is presented, and they trust they will have the loyal support of your Society in the course which they have decided to take.—Yours very truly,

(Signed) REGINALD BLOMFIELD,
President.

The Royal Institute of British Architects,
9 Conduit Street, London, W.

Pudlo Used on 18,000,000-Gallon Winnipeg Reservoir.

SIR,—With reference to the recent correspondence in your valued paper regarding the City of Winnipeg reservoir, and the large quantity of "Pudlo" used thereon and the testing of same, we beg to inform you that we have just had a letter from our Canadian agents, which gives us the following information:—

The city engineer and Laboratory Department decided to conduct the experiments themselves. The engineer-in-charge was D. Russell Willson, graduate of Toronto University in engineering, and assistant engineer to the City of Winnipeg, together with Alexander Blackie, City of Winnipeg Laboratory Department.

We have had a very interesting photo from our agents, showing the testing apparatus for waterproofing materials. There were eleven others tested besides "Pudlo," and all failed to stand the severe tests excepting our material. We understand that the concrete was a 4.2.1, and that only 2 per cent. of "Pudlo" was added to the cement.

Our agents further reported that it was found "Pudlo" gave a very close and smooth surface to the work, which was much appreciated, being contrasted favourably with the work on the columns where no "Pudlo" was used. They add, in conclusion, that the authorities have found the work quite satisfactory.

In view of Professor Brydone Jack's letter, this communication is of interest.—Yours faithfully,

KERNER-GREENWOOD & CO.

March 31, 1914.

Patent and Designs Act.

SIR,—As your readers are aware, the amendment of the Patent and Designs Act is now under consideration in Parliament.

We have already received a number of valuable suggestions from our Fellows on the subject, but as the Institute represents inventors generally, we shall be obliged if you will afford us the opportunity of appealing to all those interested who have not yet communicated their views to us.—Yours faithfully,

WALTER F. REID,
Chairman.

The Institute of Inventors,
20 High Holborn, London, W.C.

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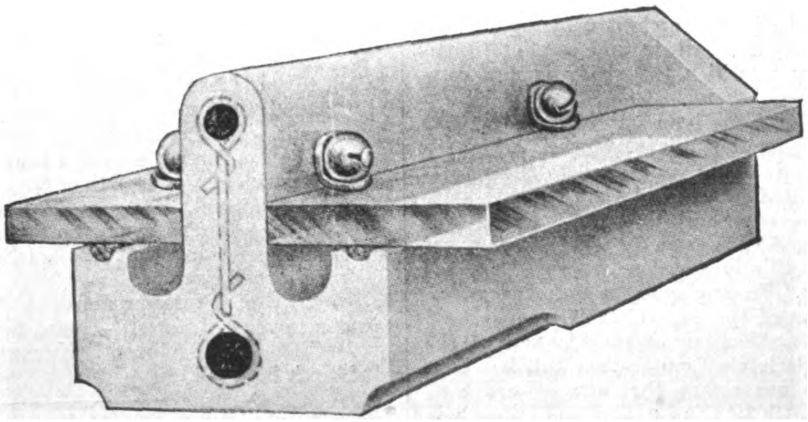

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THE ARCHITECT

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FORTHCOMING EVENTS.

Friday, April 10.

Architectural Association Camera, Sketch, and Debate Club excursion to Long Melford, Kentwell Hall, and Melford Place.

Saturday, April 11.

Architectural Association Camera, Sketch, and Debate Club excursion to Long Melford and Lavenham.

Monday, April 13.

Architectural Association Camera, Sketch, and Debate Club excursion to Cavendish, Clare, Stoke by Clare, and Moyns Park.

Thursday, April 16.

Society of Architects : Paper entitled "The Arbitration Clause," by Mr. W. Valentine Ball, Barrister-at-Law, at 8 P.M.

Concrete Institute : Paper entitled "The Design of Steel and Reinforced Concrete Pillars, with special reference to Secondary and Accidental Stresses," by Mr. Oscar Faber, B.Sc., &c., at 7.30 P.M.

LAWS OF SIGHT.

In an interesting article under the above heading Mr. March Phillipps discourses at considerable length on some only of the phenomena of vision that are included in what he describes as the code of laws and regulations which are inherent in the sense of sight. The first point that he makes is the law that the course of the eye is not a smooth and even motion, which accepts equally all that comes in its way, as a revolving searchlight illumines impartially all that lies in its path, but is composed of a series of leaps from one object to another, the gaps being, as he says, passed over unvisited and unseen. In this last statement Mr. Phillipps is not quite right. In the making of photographic lenses it is recognised that there are two opposed qualities to which any particular lens may approximate, long-focus or wide-angle. The lens of the human eye is rather of the long-focus character than wide-angle, though variably so according as the subject is short-sighted or long-sighted. The photographic long-focus lens only defines clearly upon the plate an angle of limited extent, and the human optical lens is bound by the same limitation, and defines clearly upon the retina only objects within a comparatively small angle. In the preparation of perspective drawings this fact is recognised, and one of the first things a pupil is taught is that he must so fix his station point that his perspective will be included within an angle of 60 degrees, otherwise it will look wrong, just as photographs often do in which a wide-angle lens has been used too extravagantly. The eye being a long-focus lens and rendering clearly only those objects within a limited field of small angle, passes to the next field, and hence the impression of a leap; but the second field is contiguous to the first, and though their centres are distinctly apart the whole field is visited and seen between each. There may be nothing of sufficient interest to cause a halt, and a number of fields may be traversed before such an arresting point is reached, but the whole distance is in every point successively central to the focus, and sub-consciously, it may be, the image of every point is projected on the retina—that is, it is seen. We commend to Mr. March Phillipps, in his cogitations on the physical and psychic bases of art, a recognition of sub-conscious mental activity, which although it cannot of its very essence be demonstrated as a scientific fact, must be postulated as a legitimate speculation. In the matter of seeing, it cannot be doubted that in passing from one arresting point to another the human lens is still active and projects pictures whether these are consciously recognised and heeded or not.

The disposition of the eye to glide along firm lines Mr. Phillipps points out as one of the laws of sight. This is a fact very thoroughly recognised in all forms of visible art, although Mr. Phillipps implies that, in common with other "certain fixed and permanent laws of sight," in the conscious practice of art little or no heed is paid to the subject. He has, apparently, forgotten his Ruskin and that critic's exposition of the use of the line in composition.

One dogma that Mr. Phillipps has been airing lately, not for the first time in the particular article with which we are at present concerned, is "the fact that the eye will readily run up a line but on no account run down it." This dogma is founded on imperfect observation, and requires qualification. It is true that if the eye brings into central focus a point on a line it will rather run up than down, but if the first observation of the line is at a point at which it is arrested it will run down; and if the arrest is by a horizontal line of equal value it will follow the vertical line downwards rather than the horizontal. Mr. Phillipps is guilty of special pleading when after stating his dogma he proceeds, "there is, therefore, no reason in decorating the base of a column, as the only race which has ever studied the laws of sight for their own sake very well knew, and, in fact, the Doric column enters the pavement without even a moulding to make the junction." This may do for the Philistine, but honesty demands from Mr. Phillipps an explanation of the fact that the same "only race" always put a base to Ionic and Corinthian columns.

Another ingenious rather than ingenuous fitting of effect to theory may be seen in the explanation that Mr. Phillipps gives of the use of carved finials to the label of Decorated arches. He tells his reader that if he "will examine some illustrations of Early English arches he cannot fail to notice how swiftly his eye is carried up the steep sides of the arch to the point in which they culminate." So far, good, but he goes on to suggest that an acute observer will suspect that something at this point will have to happen, and he affirms that the "sort of stone plume" did happen "a half century or so" later. Our observation of Early English arches is that what happens—without waiting for a half century or so—is that there is a load to carry. In the rare instances, chiefly modern work, where the load is absent, the result is not only æsthetically displeasing but constructively bad, because the arch cracks. Mr. Phillipps probably has never worked out the stresses of a pointed vault, but if he had done so he would know that without the weight of the boss-stone the pointed groin-arches would burst. It is a pretty theory that the finial, or "sort of stone plume," is an æsthetic counterpoise to the "steep sides of the arch," but has Mr. Phillipps ever seen such a feature, æsthetically satisfying, without accompanying crockets? We do not like to suggest that he has omitted mention of these because to do so would rather spoil the force of his argument. Rather, as on many other occasions, our critic is too apt to reason from the particular to the general, and having discovered from an isolated instance what he imagines to be a law selects his facts to fit his theory.

We are glad that Mr. Phillipps has included amongst his laws of sight the restfulness of unbroken spaces, because, if he discovers a few more such fundamental and, by the professional artist, well-recognised principles, he will ere long be on the way to really understand architecture. But he has not yet fully comprehended the value in design of such spaces, because he wants us to break them up by sprinkling them with certain central points of decoration to shine out like stars in a clear sky. He had already forgotten before he came to the end of his discourse the value of firm lines as leading to points of interest. Art is a matter of many apparently conflicting principles, and it is only by letting each play its proper part in harmony with the rest that a real work of art can be produced.

DOORWAY TO HOUSE, NO. 40 LOWER DOMINICK STREET, DUBLIN.

This doorway is the main entrance to a typical eighteenth-century house which forms part of a thoroughly Georgian street. It is said that this house was the first to be built in the street early in the eighteenth century. However, its date must be later than 1756, as a map of Dublin of that date (Rocque's map of Dublin) does not show this house in the street. It was built by the Fownes family. Sir William Fownes at his death in 1788 left it to Sarah, his daughter, from whom it passed by marriage into the family of the present owner.

The doorway is the chief feature of interest about the house. It is rather quaint in conception, consisting of door opening proper in the centre, with a narrow light at each side. The door is enclosed by Ionic columns, which carry an entablature and pediment. The frieze has been excessively deepened to allow of a semi-circular fanlight being placed above the door. The fanlight is of plain design, with two bars radiating from the centre. It is protected by wrought-iron bars with scrolls, one at the back of each of the three lights. The caps to the columns are interesting, as showing the use of a foliated motive in a rather original manner. Above the side lights the architrave is dispensed with, and a swag of richly carved flowers and fruit fills up the window head.

Set in a street of interesting doorways this one attracts attention by a certain originality in its treatment. The drawing was submitted by "Ebor" in the monthly competition of "The Architect" Students' Sketching and Measuring Club.

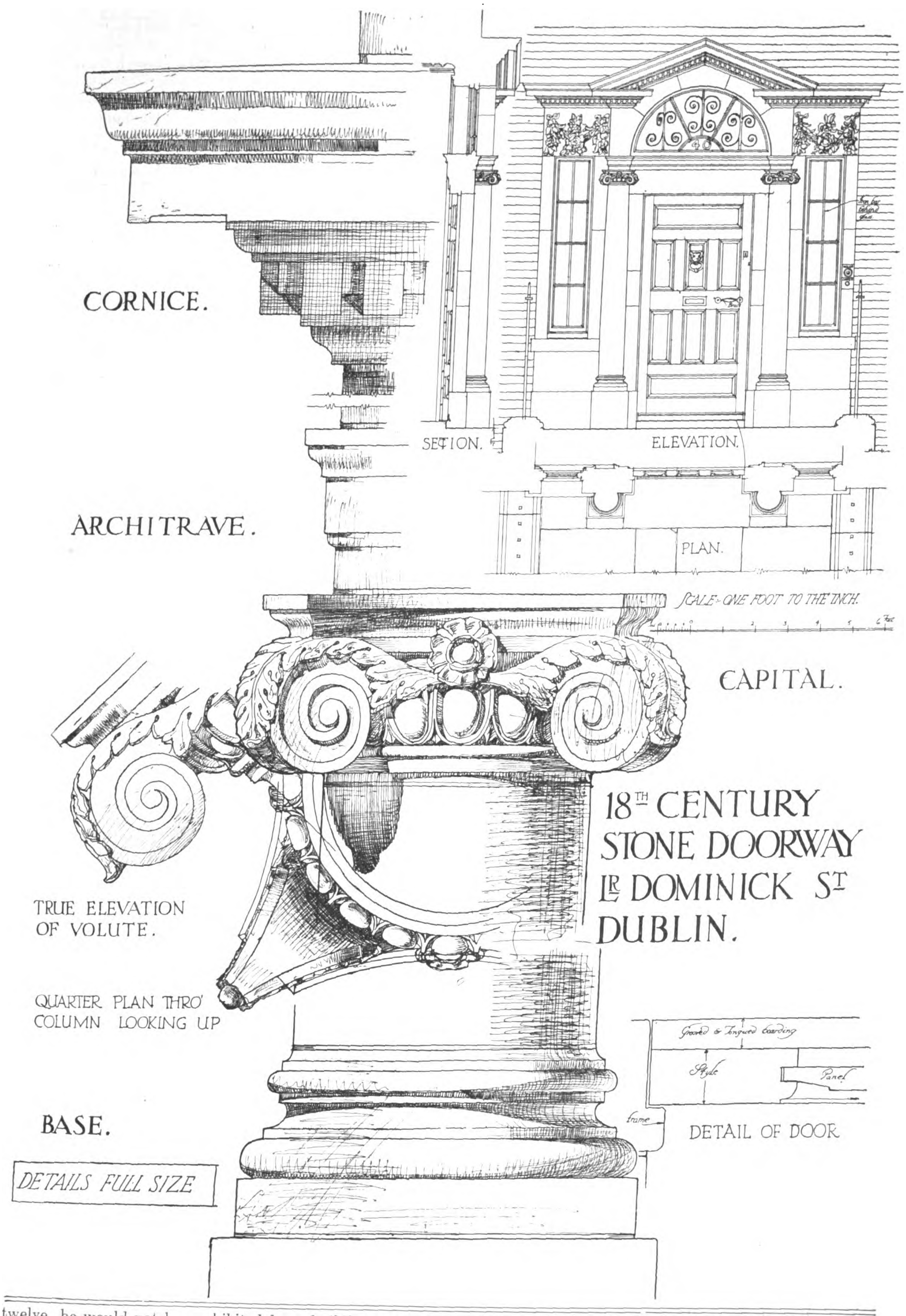
NOTES AND COMMENTS.

We are glad to know that Mr. March Phillipps approves of the design of the new Middlesex Guildhall, even though he makes certain reservations. For it would not do for the critic who preaches that all modern architecture is bad, more or less and generally more than less, to unreservedly praise anything erected in the twentieth century. Of course Mr. Phillipps must attempt to find a label for the style of the building, and he tells his readers that it "is more after the Tudor manner than any other": which dictum will raise a smile in those who have studied architecture.

In the *Journal* of the Imperial Arts League there is a short article on the interesting question of artificial daylight—of artificial light, that is, which answers for painters in their use of colours as well as daylight. The great difficulty which manufacturers have to overcome in order to please the painters who are their customers appears to us to arise from the usually unrecognised fact that daylight is not always of the same colour. The light from a bright white cloud, for example, is distinctly different from that given by a bright blue sky. Artificial daylight will accordingly never probably be entirely satisfactory to the painter, but its consideration does raise the question whether picture galleries should not always be illuminated by artificial daylight only. The manufacturer can provide a lamp which will give light of very close approximation to a definite coloured daylight, but not one which will change its tint capriciously from hour to hour.

Our cathedrals, like all other buildings, require maintenance, and if this is neglected there comes a time when heroic restoration is imperative. So at Winchester. For some months past the reparation of the exterior of the east end of the choir has been carried on, and has now been successfully completed. It was discovered that Bishop Fox rebuilt the east end of the choir with Caen stone, and the weather had played such havoc with it that many of the details of the octagonal turrets had perished. These and other parts had been patched with hard Portland stone, which had added to the mischief. It was also found that the finials were not ancient, but only seventy or eighty years old. The whole of the decayed stone has been cut out and replaced with Combe Down (Bath) stone, and new finials carved and erected in place of the old ones. The ancient figure in the canopy on the apex of the great gable, believed to be an effigy of Bishop Fox, has been strengthened and replaced, the stone tracery of some of the side windows of the choir has been restored, and the ancient glass re-leaded. This work concludes the whole of the reparation of the Cathedral. The building has been thoroughly tested, and no single suggestion of movement has been detected since the underpinning process was completed. The Cathedral is reported to be in an excellent state of preservation. The work has been done by local builders and stonemasons, the carvings by Mr. E. Bradford, and Mr. N. C. H. Nisbett, Architectural Surveyor to the Dean and Chapter, has supervised it.

At a conference of representatives of the urban and rural district councils of Greater London, held at the Westminster Palace Hotel, for the purpose of considering the practical administration of the Town Planning clauses of the Housing and Town Planning Act of 1909, the Ruislip-Northwood Town Planning scheme was dealt with. Mr. F. N. Elgood, chairman of the Ruislip-Northwood Town Planning Committee, and Mr. E. R. Abbott, clerk of the Ruislip-Northwood Urban District Council, explained the purpose and provisions embodied in the Ruislip-Northwood scheme. The land unit was five acres, to which certain building limitations applied according to the classification of the land unit. On land within one classification the buildings should not number more than an average of four to the acre; under another classification the number of buildings might average six to the acre, and so on up to an average of twelve. These restrictions might, however, be modified for certain reasons. For instance, if the owner of the block of five acres upon which the building limitation was an average of twelve to the acre, or a total of sixty houses for the five acres, gave the public two acres as an open space, he might be permitted to erect the whole sixty houses on the remaining three acres. On the other hand, if a man owned, say, only a fifteenth part of an acre in an area in which the average number of buildings was limited to


CORNICE.
ARCHITRAVE.
SECTION.
ELEVATION.
PLAN.
SCALE = ONE FOOT TO THE INCH.
CAPITAL.
18TH CENTURY STONE DOORWAY Lr DOMINICK St DUBLIN.
TRUE ELEVATION OF VOLUTE.
QUARTER PLAN THRO' COLUMN LOOKING UP
BASE.
DETAILS FULL SIZE
Grooved & Tongued boarding
Style
Panel
frame
DETAIL OF DOOR

twelve, he would not be prohibited from building on that allotment because it did not amount to a twelfth of an acre. There were other areas marked out for shops and warehouses to which these restrictions as to the number of buildings did not apply, but there were restrictions as to height and the districts to which business premises must be confined.

Discussing the question of arterial roads, Mr. H. R. Aldridge said it had been recognised that the best way of dealing with arterial roads was through town planning schemes, of which they had two examples in Ruislip-Northwood and Birmingham. In connection with the former scheme it was interesting to note that in respect of any new street to be made of a greater width than forty feet no owner was required to bear any greater expense in the cost of construction than that of the width of forty feet, the cost of the balance of the work on sixty feet roads being borne by the council. At Birmingham the local authority had secured streets up to 100 feet in width, in connection with which the landowners bore the cost of construction up to sixty feet, and the balance was borne by the Council.

At a meeting of members of the Royal Institution some interesting particulars were given of so-called elastic houses, which are being erected on the Duchy of Cornwall Estate, at Kennington. The idea, which the King has approved, was suggested by Mr. Peacock, the Secretary of the Duchy, and Professor Adshead has worked it out. It was said to be the first instance in which a mechanical thing like a house had been made in some degree capable of meeting the changing size of a family. There would be two types of elastic houses, one consisting of cottages of one storey, and the other of two-storey buildings. The elastic principle would apply to both. Two cottages would form a block with six bedrooms, all adjacent, between them, and the families occupying them would be so selected that while one with children approaching the age when they would leave home would tend to grow smaller, the other would be a family which had barely begun to grow. By an ingenious arrangement, as the one family dwindled it would give its unused bedroom, or bedrooms, to its neighbours, who by reason of new arrivals might be pressed for room. This would be effected by means of movable partitions in each bedroom, so that by sliding them along they would cut off a room from one house and add it to the next. In this way there could be a combination of four rooms to two, or of three to three, or of five to one.

At a meeting of the Royal Archæological Institute held last week an interesting short paper was read by Dr. A. C. Fryer, F.S.A., on the subject of the effigies in English churches which can be attributed to Bernini. That famous artist never visited this country, and he executed but little work for Englishmen. However, he made a bust of Charles I. from three portraits despatched by the King to Rome which so pleased the monarch that he sent the sculptor a diamond ring worth 6,000 crowns from his own hand. To ascribe any other English work to Bernini is more or less conjecture. Dr. Fryer considered weight of evidence was in favour of the suggestion that the monument to Lady Berkeley in Cranford Church, Middlesex, might be by Bernini, and that it was executed during the time two sons of Nicholas Stone, the celebrated English sculptor, were studying in Rome under the Italian master. This remarkable monument has been hitherto credited to the eldest son, Nicholas, on the strength of a misinterpreted reference to it in the young man's diary (preserved in the British Museum) which he kept during his residence in Rome. It is now suggested that the commission might have been given to Bernini by Lady Berkeley's son in the course of one of his Italian journeys. The family still hold a tradition that this effigy was the work of Bernini. It possesses, said Dr. Fryer, the feeling of Italian workmanship, and the beautiful execution of the face and hands leads one to conjecture that Bernini was alone responsible for its production, for few other sculptors could impart to marble the look and texture of skin. Another monument ascribed to the Italian is that to the memory of Sir Thomas and Lady Lucy in the Lucy Chapel, Charlecote Church, Warwickshire. According to a history of the family, portraits of the knight and his wife were despatched to Bernini with an order for him to execute the finest monument he could sculpture in marble of full-length figures of them both. The monument cost Lady Lucy 1,500 guineas. Dr. Fryer thought the figure of Sir Thomas Lucy was undoubtedly by John Schurman, one of Nicholas Stone's students, as also, probably, the structural portions of the monument. But he maintained that the beautiful effigy of Lady Lucy, a real work of art, indicated the hand of Bernini, especially in the flesh-like appearance of the face and hands.

COMPETITION NEWS.

Ireland.—The competition for the prize of £500, offered by the Lord Lieutenant for the best plan for the improvement of Dublin, is likely to be international in character, as already several inquiries have been received from abroad. The conditions of the competition are ready.

London.—A list of names purporting to give the architects selected for the second stage of the competition for the proposed Board of Trade offices in Whitehall has appeared in certain newspapers. This list is both inaccurate and has been published contrary to the express wish of the promoters, who desire that anonymity should continue until the final award has been made.

Mill Hill.—Members and Licentiates of the Royal Institute of British Architects are warned that they must not take part in the Mill Hill school competition, because the conditions are not in accordance with the published regulations of the Royal Institute for architectural competitions.

Newcastle-on-Tyne.—The City Council decided last week to invite plans from architects practising in Newcastle for the erection of business premises, with residential flats above, on their Singleton House Estate in Northumberland Street. It is proposed that the first premium should be £50.

ILLUSTRATIONS.

REFERENCE LIBRARY, BATTERSEA POLYTECHNIC.

This addition to the Polytechnic building has been erected at the south-west corner of the site facing Battersea Park Road and adjoining the present reading room.

The whole cost of the building and its equipment has been defrayed by Mr. Edwin Tate, the first chairman of the governing body.

The Library is 30 feet wide, 57 feet long, and 23 feet high from floor to ceiling.

Externally the building is faced by Lawrence's red hand-made bricks, with stone dressings, and the roof is covered with tiles.

Internally the whole of the panelling and finishings are in oak, and the floor is laid with teak blocks. The gallery runs three sides of the room, and accommodation has been made for 15,000 volumes.

The whole of the external and internal carving was executed by Mr. Gilbert Seale.

The stained-glass window at the west end of the room was the work of Shrigley & Hunt, of Lancaster, and the design shows a seated figure symbolical of literature.

The electroliers were made by Mr. Omar R. Albrow, and the grilles to the radiators were executed by Messrs. Spital & Clark. The contractors were Messrs. Holloway Bros. (London), Ltd. The architect was Mr. F. Dare Clapham, F.R.I.B.A.

MIRROR FRAME IN PINE.

This frame, 5 feet 4 inches by 3 feet 9 inches, is the joint work of the late Mark Rogers, who carved the foliage in the upper part, and his son, Mr. Mark Rogers, R.B.S.

CORNER CABINET IN OAK.

"A hindrance, all that we employ not,
A burden, all that we enjoy not."
"Faust": opening soliloquy, Anster's translation.

The centre panel, an old Society of Arts prize work, by Mr. Mark Rogers, R.B.S., is an amended version of a Flemish panel at South Kensington Museum. The cabinet was made twenty years after, and the couplet above was carved round panels for that reason. The figure on the top is a life study in terra cotta, which was awarded a silver medal in National Competition.

ARCADING IN LADY CHAPEL, ELY.

The Lady chapel at Ely is in an unusual position north of the choir, entered from a vestibule east of the north transept. It was commenced in 1321, and took twenty-eight years to build.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

A GENERAL meeting of the Royal Institute was held on Monday last, the 6th inst., at Conduit Street, W. Mr. H. V. Lanchester, F.R.I.B.A. (Vice-President), occupied the chair.

The decease was announced of Mr. J. H. Jones, Associate, and Mr. T. McMillan, Licentiate.

Mr. W. R. Davidge then read a paper on

LONDON'S BYGONE BUILDING ACTS AND THE DEVELOPMENT OF LONDON.

Sometimes one hears suggestions as to the inconsistency of various sections and regulations. It may be so. Is it any wonder, when we consider that perhaps one section, in its essence at least, has stood the test of seven hundred years of argument between the building owner and his neighbour, another perhaps is reminiscent of the days when the only fire protection was the parish "squirt," and yet another comes white-hot from the neo-modern theories of the structural engineer?

Roman and Mediæval London.

The site of the first Roman city and the lines of its general lay-out have undoubtedly greatly influenced the development of London through the ages. Of the many things we may know with certainty, one is undoubtedly that the Roman building laws were enforced in Londonium Augusta as elsewhere in the empire, and some of these too may even have had their influence in shaping or modifying later ideals. The streets within the comparatively restricted area of the first settlement were apparently laid out in the regular rectangular fashion, and there is no reason to doubt that the general rectangular arrangement of the walls and streets was extended considerably during the 400 years of the Roman occupation.

Professor Haverfield thinks that in London no street to-day follows the course of any Roman street.

Early Attempts at Fire Prevention.

For seven centuries London building was at a standstill, but with the election of her first Lord Mayor, in 1189, the second chapter of London's building history begins. Like many another authority since, FitzAlwyne, the new Mayor, saw the need for regulating the buildings. The London Assize of 1189, the first year of Richard I., although it dates back before the formation of our parliamentary system, had all the force of a modern Act of Parliament, and in its details it affords a most valuable insight into the conditions of the times. Stow tells us that it remained in force for upwards of 200 years.

FitzAlwyne's Assize of 1189, although aimed against the spread of fire, was not intended to be compulsory but rather permissive in character, and to facilitate the erection of stone party walls to separate premises belonging to different owners, and "especially for appeasing contentions which sometimes arise among neighbours." Up to this date the greater part of the city had been built of wood, roofed with straw, reeds, and similar materials, and the great fire in the first year of King Stephen (1136), which destroyed practically the whole city, was still in painful remembrance. It appears from the opening statements that after this widespread fire the more wealthy citizens rebuilt their houses with stone party walls and covered the roofs with thick tiles, but that wood and thatch were still in general use.

When two neighbours agreed to build between themselves a stone party wall, each had to give a foot and a half of land, and a wall 3 ft. thick and 16 ft. high was built at their joint cost, and provision was also made for a party gutter. It is somewhat remarkable that this height of 16 ft. occurs in the present day Building Acts in connection with requirements as to open space, and is also a limit frequently imposed on projecting shops.

It is evident that "ancient lights" did not worry architects seriously in those days. The height of buildings seems to have been a matter of sentiment.

Modern methods of procedure and those of mediæval times do not greatly differ, for in the very next reign we find an Amendment Act or Further Ordinance to regulate London building (Ordinance of King John, 1212). This second series of regulations was to some extent "panic legislation," brought about in consequence of the serious fire of July 11, 1212. All alehouses, except by special licence, were forbidden unless of stone. Bakehouses and brewhouses were not to use reeds or straws, but wood fuel. Cookshops, bakehouses, and other trade premises were to be whitewashed and plastered inside and out as a preventive from fire, and all superfluous woodwork removed. Even nowadays limewhiting of timber is a common enough requirement.

A general admonition was given to whoever wished to build "to take care as he loveth himself and his goods, that he roof not with reed nor rush, but with tile only or shingle or boards or lead." All thatched houses were to be plastered over within eight days, under pain of being demolished. All wooden houses in Cheapside were to be pulled down or amended to the satisfaction of the Mayor and Sheriffs.

Regulations as to Projections.

Still further regulations were made dealing with projections from buildings. All penthouses and "jettees" (a general name for projections) of houses were required to be at least 9 ft. high, so that folk on horseback might ride beneath them. Irregular structures of this description were required to be removed or altered within forty days under a penalty of 40*s*. The amount of the penalty has not altered during the last 700 years! No stall was to project from the house to which it belonged more than 2½ ft., a dimension which to the present day is retained to limit projecting cornices.

Early Labour Troubles and Regulation of Wages of Workmen.

Strikes and labour troubles are not altogether of recent creation. So long ago as the reign of Edward III. (1350) legislation was passed with the idea of keeping down wages, and the interesting Act of Henry VIII. concerning artificers and labourers was only one among a series of similar enactments. The following extracts will show how the workmen fared:—

"No artificer nor labourer hereafter named shall take no more nor greater wages than as under . . . a freemason, master carpenter, roughmason, bricklayer, master tiler, plumber, glazier, carver, or joiner:—

"*From Easter to Michaelmas*:—6*d*. by the day without meat and drink, or 4*d*. by the day with meat and drink.

"*From Michaelmas to Easter*:—5*d*. a day without meat and drink, or 3*d*. a day with meat and drink. . . . And furthermore, where divers artificers and labourers waste most part of the day and do not deserve their wages, sometimes in late coming to their work, early departing therefrom, long sitting at their breakfast, at their dinner and at their noonmeat, and long time at sleeping at afternoon, to the loss and hurt of such persons as they be retained with in service.

"It is therefore established, enacted, and ordained that every artificer and labourer be at work between the middle of March and the middle of September before 5 of the clock in the morning, and that he have but half an hour for his breakfast and an hour and half for his dinner at such time as he hath season for sleep to him appointed by the statute.

"And at such time appointed that he shall not sleep, then he is to have but an hour for his dinner and half an hour for his noonmeat, and that he depart not from his work (in summer) till between 7 and 8 of the clock in the evening . . . and (in winter) they be at their work in the springing of the day and depart not till night of the same day."

The following paragraph, too, shows that the men in the building trade of those days occasionally combined for other objects than raising wages:—

"If any artificer or labourer retained in service with any person for building or reparation do assault or make or cause to be made any assembly to assault, harm, or hurt any person assigned to control and oversee them in their working—he or they so offending shall have imprisonment for a year without bail."

In spite of this, the London men seem to have found means to bring pressure to bear, for the next year the Act was altered for their benefit.

Tudor Activities.

After the Wars of the Roses were satisfactorily over the population continued to flow towards London, and throughout the Acts of Parliament from Henry VIII. onwards we find repeated attempts to get the people back to the country.

Attempts to Restrict Building.

The famous Act of Queen Elizabeth in 1592 (35 Eliz., cap. 6) forbidding any new building within three miles of the City of London is, of course, well known. Its opening words give a striking description of the overcrowded and insanitary state of London at a time when its outward appearance, as shown in Wyngaerde's map, was so attractive and picturesque. The effect was considerably spoilt, however, by limiting the Act to seven years, and by allowing an exemption for larger houses assessed at anything above £5 per annum.

The modern idea of the healthfulness of an open belt of country was evidently beginning to make itself felt, for we find a strong prohibition against any further enclosure or encroachment on the numerous commons and open land within three miles of the city, such open spaces, having been for many years "heretofore used for training and mustering of soldiers, and for recreation, comfort, and health of the people."

Elizabeth's attempt to stop the growth of London was as futile as Canute's to stop the rolling waves, but she and her successor, James I., persevered in the idea of stopping all building *except on old foundations.*

Under the Commonwealth Parliament, in 1656, still another Act was passed with the express intention of preventing "the multiplicity of Buildings in and about the Suburbs of London and within 10 miles thereof." The method of stopping unnecessary buildings was to impose a fine of one year's rent for every new dwelling-house, outhouse, or other building upon a new foundation unless it had at least four acres of ground.

The Act for Rebuilding the City.

The Act for rebuilding the City of London after the Great Fire of 1666 (18 & 19 Charles II., cap. 8) provided the first complete code of building regulations. Although, no doubt, in its inception, it had some of the vices of panic legislation, the great City being described as "now lying buried in its own ruins," it is remarkable for its statesmanlike grasp of the situation. The Act early states that "building with brick is not only more comely and durable, but also more safe against future perils of fire," and the outside walls of all buildings in and about the City were henceforth to be of brick or stone.

For the better regulation, uniformity, *and gracefulness* of all new buildings they were to be divided into four classes, working upwards in quality:—

First and least sort: fronting by-lanes.

Second sort: fronting streets and lanes of note.

Third sort: fronting high and principal streets.

The roofs of all these classes were required to be uniform, and this restriction seems to have applied to all buildings, except the halls of the various companies and similar buildings.

Fourth and largest sort: Mansion houses for citizens or other persons of extraordinary quality not fronting either of the three former ways.

The object of the first three classes was to provide for varying thicknesses of wall and heights of storey.

In the fourth class, which consisted of mansion-houses "of the greatest bigness," the number and height of storeys were left to the discretion of the builder, but not in any case to exceed four storeys (in addition to cellar and garret).

The Lord Mayor, Aldermen, and Common Council were empowered to appoint "one or more discreet and intelligent person or persons in the art of building to be the surveyors to see the said rules and scantlings well and truly observed," and the surveyors or supervisors were "to take oath upon the Holy Evangelists for the true and impartial execution of their office" within their several precincts or districts.

The setting out of the party walls equally on each owner's land appears to have been one of the first duties of the newly appointed surveyors.

The raising of prices of building materials by means of "rings" or combinations was evidently not unknown, for we find a provision enabling two Judges of the King's Bench to fix the prices of brick, tiles, and lime. A similar method was to be adopted in case of combinations or exactions by workmen.

The streets as a general rule were to be 24 feet wide, and the Act of 1670 states that many builders advanced their foundations further than formerly to secure regularity for the new streets. Payment was to be made for land taken, the price to be assessed by a jury. A "betterment" clause also existed giving power to charge the owners of houses improved by the opening out of streets.

Queen Anne, 1707-1708.

Fires still continued frequent, and further attempts at fire prevention were felt to be useless without proper appliances. In the reign of Queen Anne two Acts (6 Anne, cap. 58 [1707] and 7 Anne, cap. 17 [1708]), were passed, making it compulsory on each parish to provide two fire-engines—viz., one large engine and also a hand engine, and the prompt attendance of the fire-engines was secured by offering rewards of 30*s.*, 20*s.*, and 10*s.* for the first, second, and third parish engines to reach the scene of a fire, "provided they arrived complete and in good order."

Party walls were required by the Act of 1708 to be of the following thickness, somewhat simplifying the code previously in force: Two bricks thick in cellar (half on each man's ground); one and a half bricks thick up to garret floor; one brick thick in gable ends (under penalty of £50).

Parapets to gable ends to be 18 inches above the roof. Front and rear parapets to be 2 feet 6 inches above the garret floor and coped with stone or brick (1707 Act). This is the first introduction of the idea of carrying the party wall above the roof, which has been one of the bugbears of architects ever since.

For the first time a right was given to the building owner to pull down and rebuild a party wall, charging the adjoining owner at the rate of £5 per rod.

Dangerous trades, such as turpentine distilling, were to be at least 50 feet away from any other building. The distance laid down in the present-day Act has therefore lasted over 200 years. An important point, too, is the setting back of all door frames and window frames in all houses, which were now for the first time to be set in reveals 4 inches deep—not for a protection from fire, but as a shelter from the weather.

Georgian Period.

Discontent and dissatisfaction seem to have been felt by many with the previous Act of Queen Anne's reign, and an attempt was made to set things right. In 1724 a new Building Act (11 Geo. I., cap. 28) came in, which introduced the necessity for three months' notice to be given to the adjoining owner where it was desired to rebuild a party wall in connection with any new building. Brickwork was to be paid for at £5 per rod. No timber was to be allowed in party walls. Party wall openings uniting buildings were only allowed so long as the premises were used as one house only, and provision was made for party pipes to take off water from roofs.

The Act goes on to show us what was wrong with the Act of Queen Anne. "A very great increase of buildings" had taken place, and many of the houses so built were admittedly not in accordance with the Act. The owners and head builders were accordingly liable to the heavy statutory penalty of £50, but there was no means of making them put the work right.

Window Tax.

Windows were first taxed in this country by 6 and 7 Wm. III., cap. 18 (1695).

Typical examples of the tax at different dates are given below:—

In 1762.—Eight windows, 11*s.*; eleven windows, 14*s.*; twelve windows, £1 1*s.*; sixteen windows, £1 7*s.*; eighteen windows, £1 10*s.*; nineteen windows, £1 11*s.* 6*d.*; twenty windows and upwards the same as before, viz. 1*s.* 6*d.* per window and 3*s.* the house.

In 1833.—Eight windows, 16*s.* 6*d.*; eleven windows, £1 16*s.* 3*d.*; twelve windows, £2 4*s.* 9*d.*; sixteen windows, £3 18*s.* 6*d.*; eighteen windows, £4 15*s.* 3*d.*; nineteen windows, £5 3*s.* 9*d.*

Tax on Bricks.

Bricks were first taxed in 1784, at the rate of 2*s.* 6*d.* per 1,000. This duty was several times increased, until by 1839 it was fixed at 5*s.* 10*d.* per 1,000 for ordinary sized bricks and 10*s.* for the larger size. It was repealed in 1850.

Laws as to Bricks and Tile Making and Size of Bricks.

In the time of Edward IV. directions were given for the proper making of plain tiles, roof tiles, and gutter tiles.

The Tilers and Bricklayers Company, incorporated in the reign of Queen Elizabeth, had been given power to supervise brick and tile making within fifteen miles of London, but it was found necessary in 1725 to again legislate on the subject.

In 1730 it was found necessary to forbid combinations of manufacturers to advance the price of these materials, and in 1769 the statutory size of bricks within fifteen miles of London was reduced to 8½ inches by 4 inches by 2½ inches, another clue to the date in buildings of this period.

Mr. Davidge then proceeded to deal with the various enactments from the middle of the eighteenth century up to the present day. He considered that the Acts in force and the by-laws, although somewhat complex and in need of amplification, were by no means too stringent. In some respects possibly the requirements were too lenient. In less than fifty years the population will be double what it is to-day; the present generation has before it the task not only of improving our present-day London but of building an immense city as large again, which shall encircle it north, south, east, and west. We must prepare, and prepare at once, for so gigantic a task. We can see ahead but a little way, but that little way is lighted by the illumination which comes to us from the past.

DISCUSSION.

Lord Peel, Chairman of the London County Council, in proposing a vote of thanks, confessed that he had never heard a paper on that subject which had interested him more. It was not only delightful pictorially, but in its matter was most interesting. As one of London's administrators at the present time, he had to say the paper made one feel modest as to the improvements and changes they were now trying to introduce. For all their building schemes were evidently but a pale reflection of some of the schemes of their ancestors. Naturally, one had felt rather inclined to believe that nothing existed before Agamemnon. Whereas, really, the London County Council's schemes and those of the London Society were mere transcripts from the overflowings of their ancestors. For instance, in a recent report of the engineers to the London Traffic Board it was suggested that there should be provided one great road north and south, and another great road east and west. Such a proposal appeared to be a plagiarism from Rome. He might say that as a past Chairman of the L.C.C. Improvements Committee he could not help looking back without emotion at that picture of Saturnian London ringed with parks. How delightful and how unattainable. He in his effort at improvements had had to wrestle with evil spirits in the shape of the Road Board. There seemed to have been a time in the development of London when a lax period set in, when all the splendid schemes were forgotten and the fine roads built over. The London County Council were sometimes criticised because they did not start these gigantic projects, and they were told that London deserved noble streets. Yet when the Council put the rates up, as they had been put up just lately, 2½*d.* in the £, everyone looked at them with angry eyes. Conferences were at the moment going on concerning the great roads running out of London. He felt himself a bad person to speak on the London Building Act because he had always avoided sitting on that committee. But if he had only realised the romance of that Act, as portrayed by Mr. Davidge, he would have been eager to serve on that committee.

Captain Swinton said it was a painful thing to realise how woefully London's opportunities had been neglected in the past. Certain things had been done undoubtedly. But over and over again they had seen the really magnificent plans which occurred to those men who troubled to think what London could be made. To-day they had done as little as ever. One heard the difficulty was money. But though London was not unlimited, there were grand opportunities still, as, for example, on the south side of the river between Blackfriars and Westminster Bridge, where there was a chance of doing something really fine. Something to help towards this might be done by bringing pressure to bear on the authorities of Canada as to the Aldwych site. If the London County Council could be certain of that site being off their hands they would have a chance of launching forth. Outside the county boundary something was actually going on. The proposed by-pass road to Brentford he must characterise as a wretched scheme. Such things were not looked at from a big enough point of view. Personally, he considered that traffic and locomotion facilities were the two all-important factors in town planning, coming long before the building of houses. The more they did to spread London further out the better, and the greater gain to London of the future and also of the present. He could not imagine that anything more useful could be done than the publication of a series of the early maps showing the opportunities thrown away, for by that means they might arouse public feeling. Of course, one could run the ratepayer too hard. But as an Imperial city and the capital of the Empire surely London ought to get a certain amount of assistance from the Government. With regard to the subject in general, he wished the architectural profession had a rather more neighbourly feeling about the building next door. Buildings were rather like the exhibitions of the Royal Academy, where a picture might be entirely killed by its neighbour. There was, for example, the case of the Piccadilly Hotel and the premises at one corner of its Piccadilly frontage. Personally, he felt he had no words strong enough to express what he felt about the architect who spoilt that front. Another example was to be seen at the bottom of St. James' Street, where stone buildings stood unharmoniously beside the brick design of Norman Shaw's building. Why was it not possible to carry out Norman Shaw's design for a certain distance? Delhi, to which allusion had been made, was in the fortunate position of the Government owning the whole of the soil of the new city; presumably they were going to see that the class of the building put up was according to their requirements. Mr. Lutyens and Mr. Baker were highly thought of, and he hoped they would continue for the next few years to spend the winter at least in India, and to be responsible for most of the buildings in Delhi. If something was not seen worthy of British rule he would be very much surprised. There was lots of space; probably every house will stand on a site of three acres, and the streets will be from 100 feet to 200 feet wide. Delhi promised to be a real garden city. He only wished the London Building Act could be made to give such facilities as existed at Delhi.

Professor Haverfield doubted whether there was as much of the Roman line of road remaining in London as Mr. Davidge would suggest. But the question was too big a one to be discussed offhand. The real importance of the paper, of course, lay in its bearing not on the London of the past but on the London of the future.

Sir Laurence Gomme spoke of the possible continuity between the earlier period of London and the later ones as exemplified in the present Building Acts. The Building Act passed in the twelfth century which followed upon the devastating fire in the preceding century, and which had for its object the erection of stone buildings in the place of those of combustible materials, was either a direct copy from the Roman building regulation or a descendant from their ideas which had come down to that time. The continuity of London was really very remarkable. One noted it especially in the period after the Great Fire. It was nice to think that in one of the debates in the House of Commons of that time of which there was a record there was a Colonel Birch, who described his theory for the rebuilding of London, and he argued that London ought to consider iteslf as one great estate; that is, it should be rebuilt in a fine way, with magnificent streets, because those streets would raise the value of the buildings. But the selfishness of the owners of that period was nearly equal to the selfishness of the owners of this period. Charles II., however, when Wren brought to him his plan for the rebuilding of St. Paul's, said magnificently that the building must be built forthwith, and it was so built. James I. in one of his curious documents describes how the Roman emperors wanted to make Rome a great city, and that he (James) wanted to make London a great city, too. At the present day one felt that a new ideal had got to be brought about so that the ratepayer should see it is to his benefit to make still more beautiful this beautiful city of ours. Personally, he had an idea that that sort of thing may happen in the near future.

Mr. Andrew Taylor (Chairman of the London County Council Improvements Committee) described the district surveyors as an admirable body of men, though a very much abused one. As Chairman of the Improvements Committee for four years he had come much into contact with them. They were a body of men discharging a very unpleasant duty, and doing it well; they were putting their mark on London. It was the present fashion to abuse London. Against this he protested. Taking London altogether, there was no city in the world like it. Paris was often held up; but one got tired of Paris, which lacked the charm and general fascination of London. He felt tremendously optimistic in the matter. As Chairman of the Improvements Committee he intended to do what he could in the way of inaugurating new schemes. Of course, one longed for unlimited power. Probably everyone in that room had prepared plans for the improving of London—certainly he had done so. But when it came to the spending of money one took a different view. They should bear in mind when abusing the L.C.C. that the Council have to find the money. But London continued improving every day. He was sure there existed no finer improvement in any city than the Thames Embankment. Kingsway was another, and later, fine improvement. Others were coming along. So the public must not grow impatient. He had no doubt that the time would come when they would feel they had done their share in the improving of the London they loved.

Mr. A. A. Hudson said the maps made one regret that the authorities at different times had not bought up land outside their immediate surroundings while it was cheap. That was being done at the present day in Liverpool. By going outside, prohibitive prices were escaped, although, of course, it was necessary to jump ahead of time. He would suggest that the Tribunal of Appeal should be given a little more power. At present they only possess power to fix the general line of existing buildings. Many were the opportunities when by the expenditure of a few pounds at a given moment great public improvements could have been carried out. In small matters the Tribunal would be able to improve the inner parts of London.

Mr. E. C. Culpin mentioned that Mr. Davidge was shortly leaving for Australia to carry there the gospel of town planning. Messages have been received from practically every important city in Australia, saying that arrangements have been made to welcome him. It is well to know that on the other side, where there were such enormous possibilities, Mr. Davidge's advice was being looked forward to eagerly. At least three of the Dominion Governments were making grants towards the expense.

Mr. E. Fiander Etchells said that allusion had been made to the stringency of the London Building Acts. But he failed to find any stringency whatever. If they wanted to realise what was real stringency they should turn to the Babylonian regulations made to ensure good building.

Mr. H. V. Lanchester (Chairman), in putting the vote of thanks, remarked that one of the great things to make a new street look dignified was to keep the cornices level. Personally, he thought that, from an artistic point of view, if a street could not be very wide and spacious it ought to be narrow and deep. One of the most uncomfortable streets in London, in his opinion, was Northumberland Avenue. From the æsthetic standpoint, it was better to go a bit higher if one cannot go a bit lower. Circular parkways struck him as an exotic which had originated from cities with town walls. Radial strips of open land which took the people right away from the centre were better. Then there was the factor of railways to be considered. With regard to the regulations as to fire risks, it seemed to him the authorities were too stringent in some ways and not stringent enough in others. The by-law as to the limitation of cubic contents was not, to his mind, justified; the insurance people did not seem to think its absence altered the risk very much. Architects could easily have done something much better with shop blinds if the by-laws had permitted. He would suggest that the Tribunal of Appeal should sweep the by-laws away and consider each case on its merits; for it was impossible to legislate for every building by a hard and fast rule. A great feature of Mr. Davidge's paper was the proof that Wren did so much to foreshadow what London was going to be. That fact should help present-day architects to go on with their studies. It was part of his own faith that there was no one so qualified to plan an extension of a town as an architect.

The vote of thanks was then passed by acclamation.

Mr. Davidge, in returning thanks, pointed out that it was not necessary in thinking about the extension of London to spend millions immediately. What was wanted was a commonsense plan costing nothing. But they must prepare a plan for the future growth of the outskirts. He felt very strongly that they were carrying on the tradition of those who had gone before, and that their own projects would also be carried out, if not in their own time. After all, a lifetime was not much in the course of a great city like London.

The next meeting of the Institute will be held on Monday, April 20, when Mr. Max Clarke will read a paper on "Professional Practice." I have also to announce that a special general meeting will be held on Monday, April 27, to consider the proposals of the Council for a new charter and by-law empowering the Institute to register architects.

LA THANGUE EXHIBITION.

It will have been noticed that for the past two or three years the work of Mr. H. H. La Thangue, R.A., has been conspicuously absent from the Royal Academy and other public exhibitions. The reason for this is now explained by the fact that the distinguished painter of "The Man with the Scythe" in the Tate Gallery has been devoting himself entirely of late to the completion of a "one-man" show, the first which he has ever held. The exhibition will take place in April at the Leicester Galleries, and will consist of nearly fifty finished pictures occupying two rooms of the galleries.

DIEPPE.

By J. TAVENOR PERRY.

It not unfrequently happens when first visiting a museum or picture gallery that, after having spent all the time at our disposal in examining this or the other group of objects, we find by the doorway on leaving something still more interesting which escaped our notice on entering, but too late to do more than cursorily examine; and those who may have been received by the late George Godwin in his library in Cromwell Place may remember that on turning round to leave him they were confronted with his wonderful collection of historic chairs with only time to seat oneself, if so permitted, in that of Shakespeare. And thus it is with foreign travel; the capital of a country or of a province is the point generally aimed at by the tourist, and the district through which he passes to reach it is neglected until, returning, he catches sight of many a pleasing prospect or stately edifice, far surpassing what he has already seen, but which he has then no time to visit. How many of the thousands of English visitors to France, or of architectural students either for that matter, break their journey at Calais or Dieppe? And yet these towns are full of interesting and picturesque buildings, with the added charm of English historical associations.

Having regard to the importance of the existing Mediæval remains in Dieppe, it is surprising how little notice has been taken of them by French writers on architecture or archæology. Dieppe is unmentioned in any one of the three volumes of De Caumont's "Abécédaire d'Archéologie," and Viollet-le-Duc's "Dictionnaire Raisonné de l'Architecture" merely mentions S. Jacques in the list of notable French churches, and informs us that the Archbishop of Rouen possessed two sea mills there in the fourteenth century. M. L. Vitet in the first two volumes of his "La haute Normandie," gives a somewhat bald account of S. Jacques; but the best accounts of the town and its buildings are to be found in the works written or edited by M. l'Abbé Cochet, particularly his "Eglises de l'arrondissement de Dieppe," but, curiously enough, none of these books give any plans of the churches.

We have no record of the foundation of the town, though it must have existed as a settled place from a very early period, as it owes its value to natural advantages. Its port is the outlet of three rivers, the Aulne, the Béthune, and the Varenne, which, meeting at Arques, a short distance above Dieppe, form one river of sufficient volume at its mouth to produce a valuable haven; and this fact, together with the

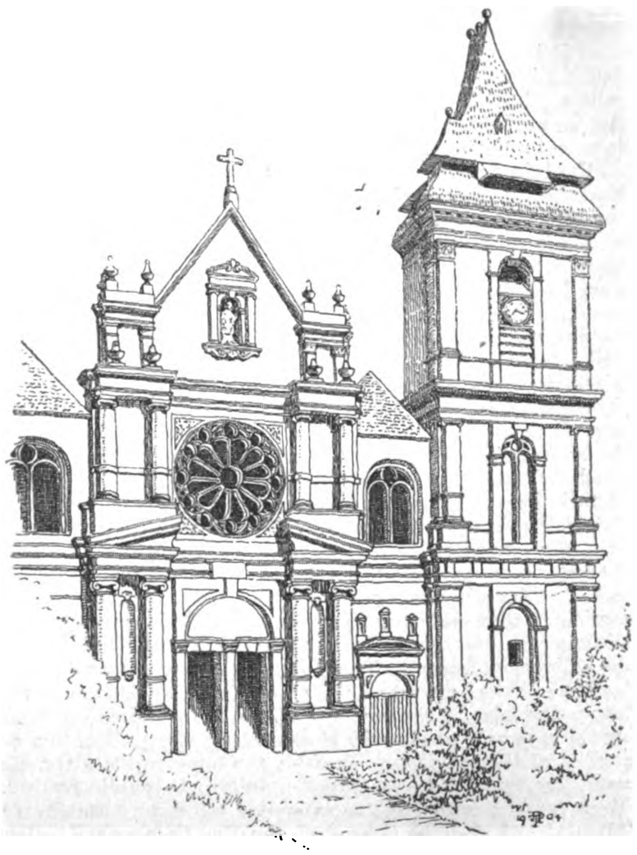


FIG. 1.—ST. REMY.—WEST FRONT.

defensible character of the place which the closely surrounding hills and cliffs give it, constituted the early and lasting importance of the position. It has been assumed that it was the Roman town of Juliobona, though of this there is no very direct evidence; but the quantity and character of the remains which are discovered from time to time in the immediate neighbourhood and in the valleys of the three rivers show that the country round was fully occupied by a Gallo-Roman population, and thus make the assumption more than probable. We have also the evidence of a number of place-names that have survived in the locality, such as that of the great forest of Bray, which stretched inland for many miles, showing that the population was of Celtic origin. But the coast was exposed to the raids of the northern barbarians, who from an early period began their attacks on the place, by which Juliobona and all traces of the Roman town were destroyed and the surrounding civilisation effaced. The importance, and at the same time the vulnerability, of the place attracted the attention of Charlemagne, and about 780 he built a fort for the protection of the harbour, and surrounded the fishing village, for it was then but little more, with a line of walls; and this may be regarded as the foundation of the modern town.

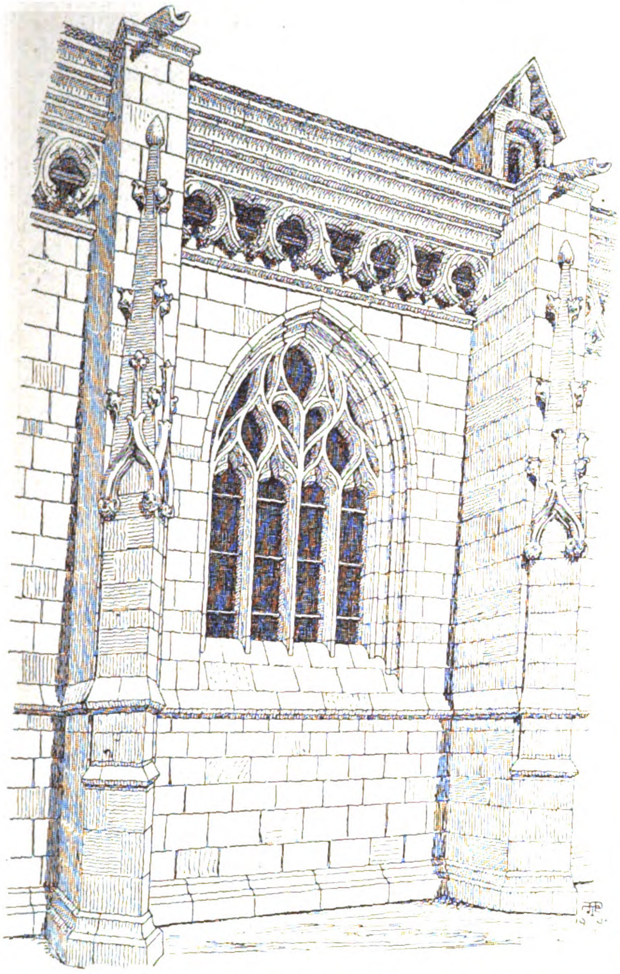


Fig. 2.—ST. REMY.—BAY OF SOUTH-EASTERN AISLE.

The place is mentioned under its present name in a charter of 1030; and no doubt during the two and a half centuries of peace which it experienced under the rule of the Norman dukes it gradually increased in importance. But as soon as the quarrels for the possession of Normandy began between the Kings of France and England, and for many centuries afterwards, it had but a turbulent existence. About 1195, for instance, Philip Augustus captured the place, carried off the inhabitants, and burnt their boats; and until in the next century it became a portion of the French dominions it suffered from the chances of war, while after that event its importance and value declined as the intercourse between England and France became less intimate. It was during the raid of 1195 that the abbey church of S. Catherine, which occupied the site of the present church of S. Jacques, was either destroyed or so ruined that it had to be rebuilt; but of the original structure, erected during the period of the Dukes of Normandy, portions may still exist in the outer walls of the transept and the lower part of the south tower.

During the peaceful times of the thirteenth century the coasting trade of the town so flourished and the prosperity of the inhabitants so increased that in 1282 Guillaume de Flavacourt, Archbishop of Rouen, divided the place into two parishes, assigning the more important part, which included the castle, to S. Remy, and the portion containing the port to SS. Catherine and Jacques, under whose invocation the church was at first placed. This rearrangement had become necessary by two circumstances, the first being the destruction at Eastertide 1250 by a hurricane of the church of S. Remy, which necessitated an entire rebuilding, and the second was the ruined condition in which S. Catherine had been left by the raid of Philip Augustus; and before we proceed further with the history of the town and its fortunes, we will give a detailed account of these two churches.

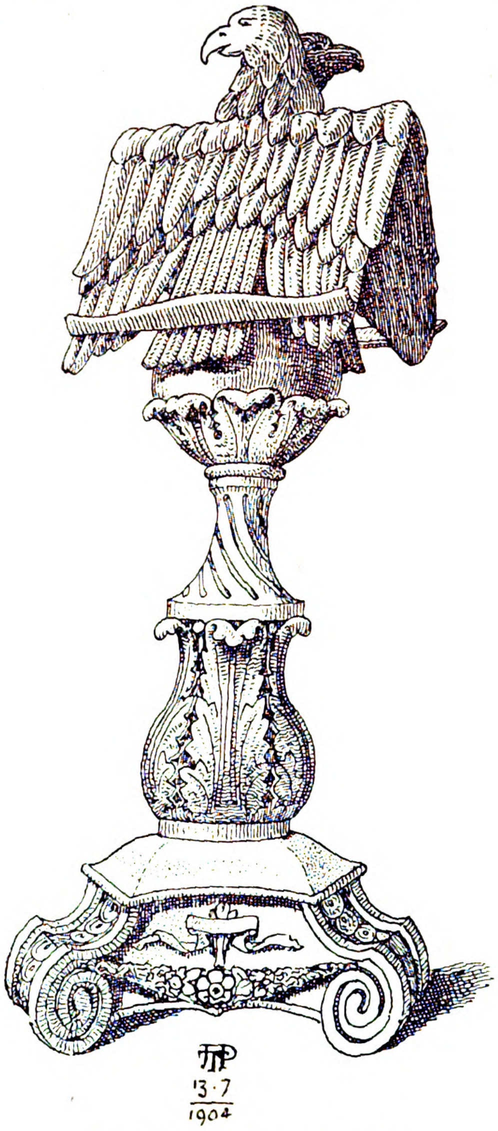


Fig. 3.—ST. REMY.—LECTERN.

The original church of S. Remy stood upon the hill now crowned by the castle, and occupied a portion of the site now included in the fortifications. The date of its first foundation is unknown, but it may have been associated with the fort built by Charlemagne and enclosed within the circuit of his walls, which included, until the destruction of 1250, a considerable portion of the town still surrounding it. The church seems to have been rebuilt after its overthrow on the same site, but the people who dwelt round it, frightened by the catastrophe and fearing its recurrence in so exposed a position, began to erect their houses at a lower level, and gradually deserted their original position. The inconvenience of ascending the hill every time they had to attend to their religious duties gradually drove the people to S. Jacques, and the clergy of S. Remy sought permission to remove their church also to the more secure and lower level; but it was not until 1522 that they were permitted to do so by Georges d'Amboise, the Archbishop of Rouen. By 1500, however, they had begun to quarry stone at Varengeville for the new building, so that in the year that they obtained permission the first stone was laid by Thomas Bouchard, a wealthy citizen of the town, and the works went on apace. The dates 1532, 1533, 1534, and 1540 are found inscribed in various parts of the works, but it was not until 1545 that the choir, with its aisles and chapels, had risen to their present height. If this portion of the work was then used we do not know, for there seems to be no record of its consecration, and the religious wars which followed, in which the Dieppois took a very active part, no doubt stopped all attempts at completion; and it was not until the reign of Louis XIII. that the works were resumed, and the nave and west front brought to their present state in 1685. Even the west front took some time to erect, as the three portals begun in 1630 were ten years in course of construction, while the works to the south tower dragged on to 1685, and the north tower and gables to the aisles were left unfinished. All the front was restored in 1862, and its present condition can be seen in our sketch (fig. 1).

The church is of very great size for a simple parish church, and consists both in the nave and choir of a lofty central aisle without triforium galleries and lighted by large clerestory windows; side aisles also lighted from a clerestory, over a range of wide chapels which altogether give it the appearance of a five-aisled church. It terminates in a polygonal apse with radiating chapels, the Lady chapel being an elaborate work of the time of Francis I. While the aspect of the interior is grand for its great size and good proportions, its details are poor, and in the nave especially meagre and incongruous; and in consequence of the treatment it underwent at the hands of the Huguenots, which deprived it of most of its fittings, it looks very bare. Some remains of the original decoration of the east end still show on the chapels of the choir in the remarkable traceried cornice, of which we give a sketch (fig. 2); while a curious piece of church furniture of the eighteenth century in the wooden double-eagle lectern stands in a north chapel of the choir (fig. 3). One relic of the older S. Remy, probably, is found in the curious granite stoup carved with cryptic letters, or numbers, which stands within the south portal (fig. 4); and from the mortice holes remaining round the basin it probably stood originally without the church, and had a cover or canopy over it.

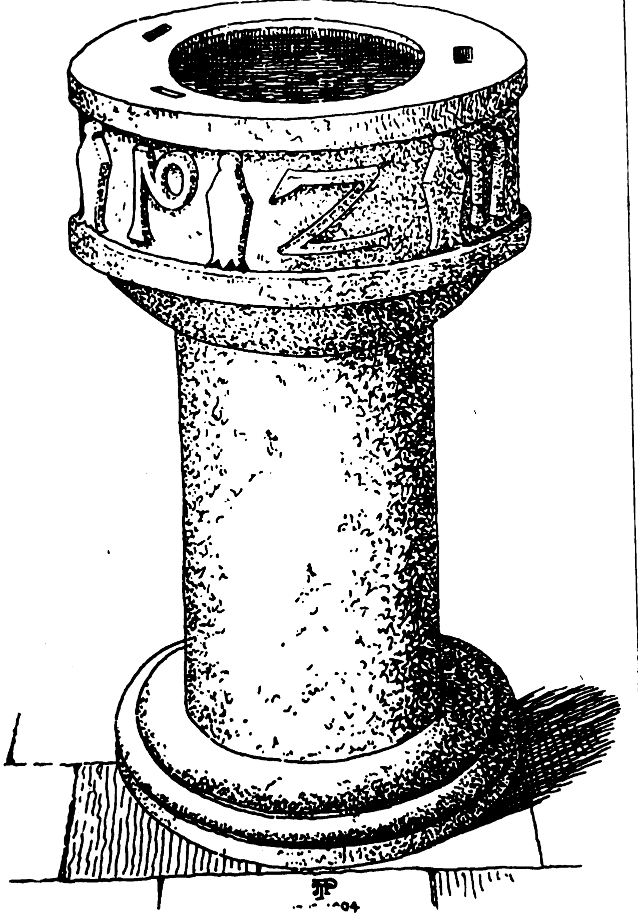


Fig. 4.—ST. REMY.—STOUP.

Although of later foundation than S. Remy, the church of S. Jacques, or SS. Catherine and Jacques, as it was originally called, contains work of a much earlier character. The rebuilding of the church ruined by Philip Augustus commenced about 1250 with the erection of the choir and, perhaps, the rebuilding of the transepts on portions of the old structure still remaining; and after the church had been made parochial in 1282 the nave was begun, so that in the latter half of the thirteenth century and the earlier part of the next the main structure was erected. The façade and great tower belong to the end of the fourteenth or beginning of the fifteenth century, and little was done for a long time afterwards. Everything stood still during the English wars and when Dieppe had again become an English possession; and it is probable that the fabric suffered considerably during the French siege of the place in 1443, which resulted in its capture. The first works undertaken may have been in reparation only, such as the building of the crossing and much of the transepts which appear to have collapsed; but the great wealth the mariners of the town were bringing into it, as a result of their successful expeditions, chief among which were those of the celebrated Jean Angot, permitted the completion of the structure in the richest style of the Renaissance.

(To be concluded.)

THE SELECTION AND DEVELOPMENT OF BUILDING ESTATES.*

By Mr. J. Seagram Richardson.

Owing to various causes there has been very little development of building estates in this country in recent years. Owing to the general cessation of building, the demand for houses already exceeds the supply in many districts. Owners of house property have been harassed of late by legislation and by the demands of the authorities, both Imperial and local. It was stated in the House of Commons two or three weeks since—and the statement was not challenged—that during the seven years of the life of the present Government the average increase in the number of new dwellings had fallen from 135,000 to 85,000, a loss of 50,000 a year, there being thus a present deficiency of 350,000 houses and cottages. To make matters worse, the shrinkage is becoming more marked, for since the passing of the Finance Act the average increase of 85,000 has fallen to 61,000, and for the year ended March last it was only 56,000. Now, so far as many suburban and even distant residential districts are concerned, there is unquestionably a shortage of houses. In the opinion of many, therefore, the time cannot be far distant when investors and speculators encouraged by the promise of the Government to introduce legislation setting aside the decision of the Courts in the celebrated Lumsden case, will once again direct their attention and energies to the development of building estates.

Dealing first with the question of selection. Let me summarise what appear to be the essential elements of a successful suburban building estate of moderate area. Any serious attempt to deal with the formation and development of estates, such as those of the Hampstead Garden Suburb or the Letchworth Garden City, would occupy the whole evening. In the first place, it is, of course, necessary that the land should be ripe for building, or that there should be every prospect of its becoming so in the near future. This is largely a question of judgment and must be determined by a knowledge of present local conditions, including the growth of population, and an intelligent anticipation of future needs. The question of price is not necessarily all important, for it may quite possibly be more profitable to develop a piece of land which is ready for the process, at a cost of, say, £3,000 an acre, than another parcel at a cost of £100 an acre, where development would be slow and uncertain. At the same time, price must always constitute a governing factor in a proposed purchase, and the question of value should therefore be first considered, for the old adage that a thing well bought is half sold applies as much to land as to articles of everyday commerce. A valuer, like a poet or policeman, is born and not made. Something more than theoretical knowledge is necessary to make a man a valuer. Experience is a good taskmaster, but, after all, sound judgment seems to be often the result of instinct. One cannot lay down general rules for determining whether land is worth £50 or £500 an acre; but before advising on a pro-

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*** Abstract of a Paper read on March 13 before the Auctioneers and Estate Agents' Institute.**

posed purchase it will be necessary to formulate a tentative building scheme with a view to a comparison of the wholesale purchase price with the expected result of development and re-sale in plots. To do this the length of existing and proposed road frontages should be ascertained (taking care to deduct the flank frontages of corner plots) and these should be valued on the basis of the price per foot which they are expected ultimately to command on re-sale, it being wise to err, if at all, on the side of moderation. It will probably be prudent to defer a considerable portion for a few years, and from the total then arrived at must be deducted the cost of sewering and road-making and, say, one-third for other expenses and developer's profit. Assuming a correct forecast of frontage prices to have been made, the resultant figure should approximate more or less closely to the wholesale value of the land. Having satisfied oneself that the price is right and that the local conditions are favourable, the next question to be considered is perhaps that of accessibility. This, contrary to considerations of price, is all important, proximity to a railway station with a good train service being in the great majority of cases a *sine quâ non.* Attempts have been made with varying success to establish building estates situated at a distance from a station and to link them with the railway by an estate omnibus, but, at best, this is a makeshift. Whilst proximity to a station is seen to be very desirable, the distance from town is not always material in the case of land suitable for a good class of residence. The city man of to-day is apt to calculate the distance of his home by time rather than by mileage. During the last twenty years people have come to prefer to live either right in town or right in the country. Places twenty, thirty, and even thirty-five miles distant from town have, by means of fast non-stopping trains, been brought within a thirty or forty minutes' journey, and one can nowadays get to the City from, say, Watford, Brentwood, or Sevenoaks, far more comfortably than, and quick as quickly as from Muswell Hill, Brondesbury, or Battersea. As an instance, take Southend-on-Sea, which, although thirty-six miles from London, is reached in fifty minutes, and which boasts of no fewer than 10,000 season-ticket holders, whilst it is said that at the present time the Corporation are passing plans every month for 130 new houses. Again, one can come up from Tunbridge Wells—the same distance from town—in forty-five minutes. Given a rapid train service and season tickets at reasonable prices, more attention will be paid in future to the development of building estates in districts where, owing to the cheapness of the land, it will be possible for a purchaser to get an acre of ground at the same cost as that of the ordinary "garden" of the suburbs.

Ranking in almost equal importance to accessibility is the question of drainage. If this is not already existent the prospective developer must satisfy himself of the possibility of providing an efficient system.

There is a strong popular prejudice in favour of main drainage. Where the sub-soil is favourable—*e.g.*, chalk, gravel, or sand—and houses are few and far between, there is little objection *per se* to the old-fashioned cesspool; but obviously drainage by such a method is impracticable in the case of an estate where, say, fifteen or twenty houses are built to the acre. Where the sub-soil is clay there is often difficulty in disposing of the overflow, costly litigation not infrequently resulting. In this connection it should be remembered that an owner of land possessing an easement in the way of a ditch or watercourse has no right to allow the overflow from a cesspool (however innocuous) to drain into it or on to adjoining lands to the detriment of his neighbour. This would be "increasing the burden" of the easement, and the Courts would grant an injunction in restraint. A developer, unless he is a hygienic reformer and prepared to pay the price usually paid by the enthusiast, will be wise to rely upon the more generally accepted method of drainage. In the selection of land, its natural fall and the levels of existing sewers (if any) must be taken into account. The ideal land in this respect has an easy fall to the sewer. Too steep a fall is not desirable, and, although it is best to rely upon gravitation wherever possible, the resources of modern civilisation provide automatic pumps for raising sewage which in actual working have been found to be inexpensive and efficient. The Finchley District Council have in use at the present time an automatic electric pump which requires little attention, an engineer simply inspecting and oiling it about once a week. By an ingenious contrivance, as the liquid in the pump rises the starting gear of the pump is released, and when it falls to its normal level the pump automatically stops working. The necessity of a pure and adequate water supply is so obvious as to need only passing reference, and the intending developer should make it one of his first cares to see that this is available. Services of gas and electricity are also very desirable, especially in these days of acute "domestic" difficulty. Both are now used extensively for heating and cooking as well as lighting, and, as you all know, the electric current is being harnessed for vacuum process cleaning, for ironing, for running a sewing machine, and for other domestic purposes. The nature of the sub-soil must not be lost sight of, for although many of us live on a clay sub-soil and seem none the worse for it, the advantages of living on a gravel or chalk sub-soil with the dry atmospheric conditions which result are becoming more widely recognised, and the existence of a gravel or sandy soil on a building estate will probably prove not the least of its attractions. At the first blush the slope of the land (if it has one) may not be regarded as of moment; but one or two building estates are "hanging fire" for no apparent reason beyond the fact that they are situated on the north slope of a hill. Another matter which requires careful consideration is the way in which the natural advantages of the land may be turned to account. The longer the existing frontages the less will be the sum to be spent upon road-making. If the sub-soil is of gravel or chalk, the cost of road-making will be materially reduced, whilst a bed of sand will later on effect an appreciable saving in the cost of building. Proximity to and convenience of sources of supply of materials must not be lost sight of, for cartage for a long distance or even to the summit of a steep hill may render the cost of building prohibitive. Inquiries should be made as to the amount of the local rates, as a low-rated district possesses at least one attraction which will appeal to everyone, and a moderate charge for gas or electricity will be of assistance. Opportunities of cheap travelling are also an advantage. Those accustomed to deal with houses which appeal to the man of moderate means know that such a matter not infrequently influences intending purchasers and tenants in coming to a favourable decision. Where it is intended to provide an estate for the working classes it will be important to see that there is a service of workmen's trains at cheap fares. The existence within a reasonable distance of particular places of worship and facilities for golf will appeal to many.

There are pitfalls to be avoided in selecting land for a building estate. It may be situated in two parishes with differing by-laws, and, more important still, different systems of drainage. Or one may have no system at all, in which case the other will not unnaturally object to take its neighbour's drainage. Again, the possibility of adjoining lands being developed in an undesirable manner may have to be taken into account. Where land is openly advertised for sale as "building land" there may be an implied warranty that it can be built upon; but even then there may still be ample grounds for a wise observance of the old maxim, "Caveat emptor." One of the first inquiries would naturally be to ascertain if the land is included or is likely to be included in a town planning scheme, the powers given to local authorities by the Housing and Town Planning Act, 1909, being of so wide and sweeping a character as to prevent development on the hitherto accepted lines. Amongst the more important of the innovations may be mentioned a voice in the general laying-out of areas, including the position of roads and the description of buildings to be erected, namely, private houses, shops, or factories. They are given control of the general character of buildings, and it is claimed, can even insist upon the adoption of a particular style of elevation. Power is also given to vary by-laws and to limit the number of houses per acre. The scheme of the Finchley District Council, for instance, restricts the number of houses to four, six, and eight per acre in one locality, and to ten, twelve, and fourteen per acre in another. It will be seen, therefore, that in the case of land comprised in a scheme under this Act it is no longer possible for an owner to do what he likes with his own. The need for legislation of the kind was admitted, and, although individual owners may suffer, the greatest good of the greatest number—and in these days it is necessary to think "Nationally" as well as "Imperially"—must follow upon a general adoption of the Act.

A copy of the local by-laws should be obtained and studied, as in some important respects, for example, width of roads and lengths permitted without cross roads, air space, &c., by-laws will be found to vary in different districts.

The question of easements is also one that requires careful investigation. Some of these, such as footpaths and watercourses, are superficial, and it is important to ascertain to what extent they will affect a scheme of development. Where it is desired to divert a public right-of-way it is well to bear in mind that the Justices must be satisfied that such diversion will be either "nearer or more commodious" than the footpath which it is desired to close. A watercourse may also be a source of difficulty and expense, especially where culverting is necessary. But there are other easements which may be latent, such as sewers and water mains, and whilst it is the duty of a vendor to place a purchaser in possession of all material facts affecting the land, he may be ignorant of the existence of an easement of this description, and in these circumstances it may be difficult for a purchaser to obtain redress. Too much caution, therefore, cannot be observed in satisfying oneself that the land is free from drawbacks of this kind. It is also of equal importance to ascertain that it is not burdened with restrictive covenants which would prevent its development upon the desired lines.

Information as to tithe and land tax (if any) should also be sought, for although these are often inconsiderable in amount the contrary is sometimes the case, as many a purchaser finds to his cost when he learns that tithe and land tax are "incidents of tenure," and that there is no legal obligation on the part of a vendor to disclose them. Then, again, it sometimes happens that in some more or less distant past sand, gravel, brick-earth, or the like may have been removed in larger or smaller quantities, the excavations being filled up with rubbish or other undesirable material, or a large pond may have been similarly treated. Failing information from the vendor, the local authorities should be consulted, and, if necessary, recourse should be had to the "oldest inhabitant." For, apart from the difficulty and expense of constructing roads and building upon "made-up" ground, it is apt to dislocate drains, whilst the decomposition of organic matter in the soil must be inimical to health.

Where a strip of "waste" exists between the property and the road, or where land abuts upon a common, the rights of interested parties should be ascertained, for it not infrequently happens that the local authority or the lord of the manor can prevent the construction of a road across a piece of common or waste land, thus largely sterilising an estate for building purposes.

Again, land within the County of London is subject to the requirements of the London Building Act, 1894, the Metropolis Management Act, 1855, the several Amending Acts, and the Public Health (London) Act, 1891, a knowledge of all of which is essential. These should, therefore, be studied, and I will content myself with reference to two only of the more important provisions of the London Building Act, namely, those entitling the Council to refuse their sanction to a proposed new road which does not afford direct communication between two streets or which has a gradient steeper than one in twenty. In the consideration of these and many other matters, the value of the Ordnance Survey is great, and a reference to it should be one of the preliminary steps. This reference should not be confined to the actual sheet or sheets showing the land in question, and the adjoining maps should also be studied. Bench marks will give the data for levels, footpaths will be shown—although it is true the Ordnance Department state that the representation of a road, track, or footpath is no evidence of the existence of a right-of-way—the site of a disused brickfield or filled-up pond may be discovered, the presence of a sewage farm or other unsuspected objectionable feature may be detected, and if the land is low lying the area (if any) which is subject to flooding will probably be shown.

No general rule can be laid down as to the most desirable area of a building estate; so much depends upon circumstances. Estates at Ilford, Hither Green, and elsewhere, having as large an area as 300 acres and upwards, have been developed by Lord Rowallan (Mr. Cameron Corbett), presumably with results which have not been unsatisfactory, whilst others of very considerable area have been dealt with by land companies, syndicates, and private owners. At the present time an interesting experiment is in course of progress at Weybridge, where an estate of no less than a thousand acres is being opened up for building. But the managing director of a large land company was of opinion that for an ordinary suburban estate the ideal area was twenty acres. This was the result of a wide experience, and others have come to a similar conclusion.

It is now time to consider the question of development, the first matter to claim attention being the scheme of development. Before formulating a scheme of development, the surveyor should make himself familiar with every detail of the estate. He should study the local by-laws to ensure compliance with them, and dispose of any outstanding questions likely to give trouble in the future. Amongst these may be included rights-of-way and boundaries. Where boundaries are formed by hedges it is a generally recognised custom that both the hedge and the ditch belong to the land where the ditch is on the outside, the theory being that the earth taken out for the ditch is used to form a bank for the hedge. But this may, of course, be rebutted by evidence to the contrary. Sometimes, however, ditches are neglected, and it becomes difficult to decide the ownership of the hedge; but when this has been ascertained the boundary is usually held to extend from 3 feet to 4 feet from the centre line of the hedge, the former distance generally applying in the home counties. Timber fences are assumed to belong to the owner of the ground upon which the posts stand, for it is usual for nails to be driven home towards the owner's land. Where a property is bounded by a stream or an occupation road, and there is no evidence to the contrary, it is customary to take the centre line as the boundary in both cases. The position of footpaths and bridle paths (if any) should be carefully noted and considered, with a view to embodying them, where possible, in new roads. An agreement should be come to with the local authority with regard to any necessary widening of existing roads which may not be of the prescribed width, for if a road is of less width than that provided for by the by-laws, and building takes place on the land fronting it, the road becomes a "new street" within the meaning of the Act, and the total cost of making up and paving falls upon and can be recovered from the owner of the land. In such cases, however, local authorities will often agree to bear such cost themselves in consideration of the land given up to widen the road. Another preliminary step should be the enfranchisement of copyhold land, and if it is desired to make it really freehold it will be necessary to include the minerals in the enfranchisement, as where this is not done the land, strictly speaking, is not freehold, but "enfranchised copyhold."

The redemption of tithe and land tax should also be effected before development, the former for convenience, as the amount is fixed and will not be affected by the development, and the latter of necessity, for, unlike tithe, land tax increases with the enhanced valued of land. Redemption of tithe is effected at twenty-five years' purchase of the commuted amount, and land tax at thirty years' purchase.

(To be concluded.)

NICHOLAS STONE'S SCHOOL OF EFFIGY MAKERS.*

It has been more than once pointed out that the force of heredity is well exemplified in the case of Nicholas Stone and his three sons; for Henry, Nicholas, and John all followed their father's profession as sculptors, although Henry's penchant lay in painting, and John had originally intended to take Holy Orders.

Henry Stone, the eldest son, went to Holland, France, and Italy to study Art, and returned in 1642. He erected the monument to his father, mother, and brother in the church of St. Martin-in-the-Fields, and carried on the statuary business with his brother John. He is chiefly known, however, as a painter, and he made excellent copies of several of the works of Vandyck and some Italian pictures. He died in 1653, and was also buried in St. Martin's Church, where a monument was erected to his memory by his brother John.

Nicholas Stone's second son bore his father's name. He showed considerable promise, and had he lived he would probably have carried on his father's work successfully, not only as a business, but as an art; for we are told that in Italy, whither he was sent in his youth with his brother Henry, he modelled after the antique so well that his works were sometimes mistaken for those of the best Italian sculptors. He came back to England in 1642, and died five years later.

John was the youngest son, and is said to have been educated at Westminster School and Oxford. He had intended to take Holy Orders; but on the outbreak of the Civil War he entered the army on the King's side, and after a defeat he narrowly escaped being hanged. For some months he was concealed in his father's house in Long Acre, and eventually escaped to France. At the time of the Restoration he went to Breda to ask the King to grant him the post of master-mason; but he was seized with illness, and a few years later (1667) died in Holy Cross Hospital, near Winchester. He was buried as "Captain Stone" with his parents and brothers in St. Martin-in-the-Fields.

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* **Abstract of a Paper by Alfred C. Fryer, Ph.D., F.S.A., read at a meeting on April 1 of the Royal Archæological Institute.**

The house in Long Acre, with the garden and yard attached, where Nicholas Stone had carried on the business, was continued by his two sons, Henry and John. Their father had kept a careful record of the work done by him, and it is now in the Soane Museum. But the sons did not keep a note-book in the same systematic manner. As far as we know, Henry Stone has not left any written record behind him of the work he carried out. His brother John gives a list in his father's note-book of the monuments executed by himself, though it was evidently not written at the time of their execution. The two sons never approached their father's output, yet as statuaries they were not altogether unsuccessful. There must remain a certain element of doubt as to the part John Stone himself took in the actual execution of the effigies. He was never brought up as a sculptor, and we imagine that he simply carried on the business after his father's death, with the assistance of others.

After the death of Nicholas Stone we hear nothing more of these journeymen statuaries who worked for him and were capable of executing excellent effigies under his personal supervision. Several names are mentioned in the note-books by Nicholas Stone. We are told that John Hargrave made an effigy of Sir Edward Coke for £15, which was placed on his tomb in Tittleshall Church, Norfolk; Humphrey Mayor "finisht the statue for Dr. Donne's monument" in old St. Paul's cathedral for £8: this most interesting monument, representing Dr. Donne in his shroud and standing on an urn, was saved from destruction in the Great Fire, and is now placed in a niche in the north choir aisle of Wren's great church.

Besides these workmen, there were pupils like John Schurman and Andrew Kearne (or Herne). Kearne was Nicholas Stone's brother-in-law, and during the lifetime of Stone his best work would be incorporated in the output of the great sculptor; but after his death we know he produced some monuments and other work. Vertue records that the River God, which formed a companion to the figure of the Nile, executed by Stone for Somerset House, was the work of Kearne, who also carved the lioness on the top of the famous York Water-gate, designed by Inigo Jones for the Duke of Buckingham. Kearne also made a Venus and Apollo of Portland stone, each 6 feet high, for the Countess of Mulgrave: for these statues he only received £7 apiece, so his fame does not appear to have ranked very high.

John Schurman, or Schorman, another of the pupils, was born in the Low Countries. After working for Stone he set up on his own account. Vertue's manuscript notes preserved in the British Museum give a list of work with the sums he received. From this it appears that he was paid from £16 to £18 for sculptured figures, while Kearne only obtained £7 for similar work.

Nicholas Stone's school of effigy-makers cannot be considered very successful, neither did it continue in existence more than some twenty years after the death of the master. The most hopeful member was his second son, who had studied under Bernini in Rome; but death cut short his activity, and he died in 1647—the same year as his father. The other two sons continued the sculptor's business in the house and yard, situated in Long Acre, which had been in the occupation of their father for so many years. We cannot imagine that their hearts were in their work, and probably they looked on it in the light of an inherited family business which was lucrative and could be kept up with the assistance of journeymen statuaries.

Nicholas Stone's workmen did good work while their master was alive; but after his death we hear nothing more of them, and we are probably correct in believing that they never rose above the position of simple journeymen-statuaries, having failed to catch the remarkable ability of their master.

The pupils of Nicholas Stone—Andrew Kearne and John Schurman—continued to work as sculptors, and, in fact, the latter had set up on his own account some years before the death of his master. As regards effigy work, we do not know that Andrew Kearne received any commissions, although he made several statues, and those effigies sculptured by John Schurman were inspired very directly by work made by Nicholas Stone at an earlier date. None of Stone's surviving sons, pupils, or workmen possessed the genius to carry on their master's work; and although his school of sculpture existed for a few years, yet in reality the art died with him.

THE GEFFRYE MUSEUM.

ON Thursday, the 2nd inst., Viscount Peel, Chairman of the London County Council, opened the Geffrye Museum, Kingsland Road.

The following account of the building is taken from the history compiled by Sir Laurence Gomme, J.P., the Clerk.

Acquisition of the Site.

Sir Robert Geffrye, who was Lord Mayor of London in 1686, by his will dated February 10, 1703-4, bequeathed to the Wardens and Commonalty of the Mystery or Art of Ironmongers of London certain real and personal estate for the erection and maintenance of almshouses for poor people. The bequest amounted to £1,534 13*s.* 9*d.* In 1712, two adjoining sites on the east side of Kingsland Road, Shoreditch, were purchased by the Company for £220. About the year 1715 the almshouses were erected at a cost of nearly £4,500.

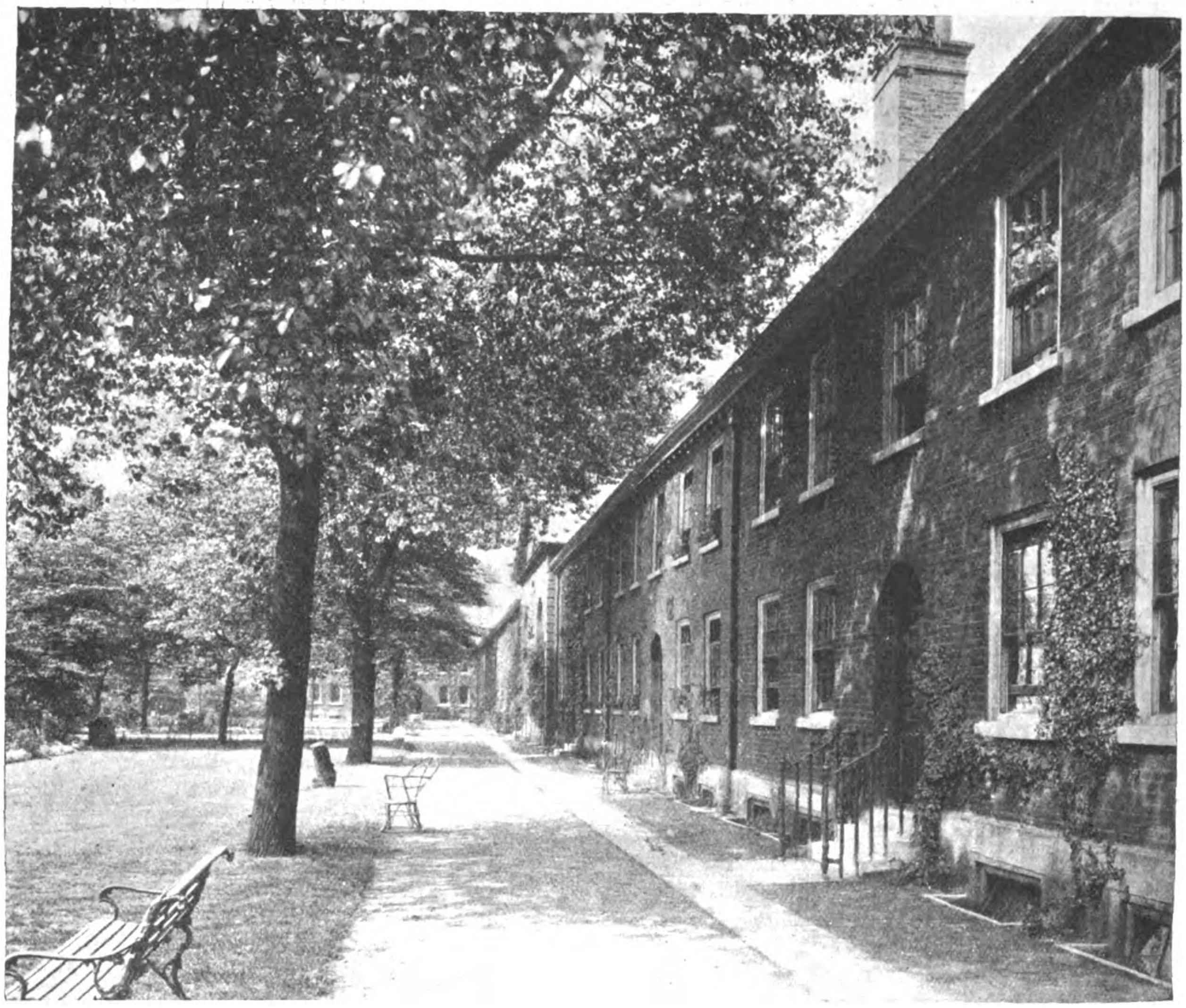
When erected the almshouses were quite in the country, but in more recent times the neighbourhood has altered beyond recognition. The Ironmongers' Company, in view of this change, decided to dispose of the property, and in 1908 an inquiry was held by the Charity Commissioners with respect to the Company's application to sell the property to the trustees of the Peabody Donation Fund, who proposed to clear the site and erect model dwellings.

The application was opposed by the National Trust for the Preservation of Places of Historic Interest, the Society for the Protection of Ancient Buildings, the Shoreditch Metropolitan Borough Council and the Metropolitan Public Gardens Association. The Charity Commissioners refused to sanction the sale, and in announcing their decision stated that they were not precluded from taking into consideration the desirability of retaining open spaces in London and of preserving ancient buildings.

The Court of Chancery, on the petition of the Ironmongers' Company, subsequently ordered a second inquiry. As a result, the Court made an order allowing the property to be sold, on the ground that the only question before it was whether the sale would benefit the Charity, and the Court referred it to Chambers to ascertain whether the offer of the Peabody Trustees (amounting to £23,500) should be accepted.

It was in these circumstances that the London County Council decided, on May 10, 1910, to make an offer to the Company in respect of the property. In doing so, the Council was greatly influenced by the fact that the district in which the property was situated was one of the most densely populated parts of London. In the Metropolitan Borough of Shoreditch there were less than eight acres of open space dedicated to public use, of which only about three acres was land other than churchyards or burial grounds, the area of the largest being one and a half acres only. The total area of the borough (exclusive of waterways) was about 643 acres, and the population in 1910 was estimated at 115,000, or about 178 persons an acre. The density of the population in the neighbourhood of the almshouses was about 250 persons an acre, while in the immediate vicinity there was an area the density of which, according to the census of 1901, was 540 an acre. The infantile mortality was the highest in London.

The cost of acquisition was estimated not to exceed £24,000, and the London County Council considered that the Shoreditch Borough Council should either contribute or obtain from other sources £8,000 towards this sum. On negotiations being opened the Company intimated that they would not entertain any conditional offer, in view of the fact that they had received an unconditional one from the Peabody Trust to purchase the property, and as the borough council was not disposed to provide the whole of the £8,000 out of rate, and required time to invite subscriptions, the Peabody Trust were asked whether, after acquiring the property (about one and a half acres in extent), they would be prepared to resell it to the Council. The Trust agreed to this, without making any profit, one of the conditions, however, being that the Council should purchase from the Trust property (about half an acre in extent) in Maria Street, which, without the almshouse property, would be of little value to them. The borough council guaranteed that £8,000 would be contributed locally towards the purchase-money, £6,000 being raised by rate and £2,000 by voluntary subscriptions. On December 13, 1910, the Council accepted the Trust's offer, the total cost of acquisition being £34,289.



By the courtesy of the London County Council.]

THE GEFFRYE MUSEUM—EXTERIOR LOOKING NORTH.

Utilisation of buildings.

The garden, after it had been adapted to its new purpose, was opened to the public in July 1912, and the Council had then to determine what use should be made of the buildings. In January 1911 a petition was received from H.R.H. the Princess Louise, Sir William Richmond, the late Mr. R. Norman Shaw, Sir George Frampton, Mr. Walter Crane, Sir Sidney Colvin and a large number of other distinguished persons, praying the London County Council, as a complement to its craft training, to establish a central museum to which students could resort.

The districts in which the almshouses are situated are the centre of the furniture and cabinet-making industry. The number of males *resident* in Shoreditch and Bethnal Green and engaged in this and allied industries at the last census amounted to 3,541 (Shoreditch) and 5,066 (Bethnal Green), forming 96 and 123 respectively a thousand of the male population over fourteen years of age. The Council decided to adapt the almshouses for use as a furniture museum.

Adaptation of buildings.

Certain alterations and renovations were necessary in order to adapt the buildings for use as a museum. These were executed under the direction of the Council's architect, Mr. W. E. Riley, F.R.I.B.A.

The buildings contained a chapel and fourteen almshouses, each of a basement and two storeys, the whole being in three blocks enclosing three sides of a garden, which on the fourth side abutted on Kingsland Road.

The chapel interior, simple and unpretentious in character, is a good example of the almshouse chapel of the early eighteenth century, particularly as nearly all of its original fittings remain.

Above ground level every house had four rooms, each with a small pantry opening from it, and in the basement were sculleries and coal cellars. In adapting the central block as a museum the outside of the old buildings has been left unaltered, but the staircases and their walls, and the upper floors have been removed. By this, eight galleries have been obtained. The four on either side of the chapel are connected by newly formed doorways in the division walls, but to avoid interference with the chapel the means of communication between the two galleries immediately against it have been obtained by forming, at the back of the building, an external corridor.

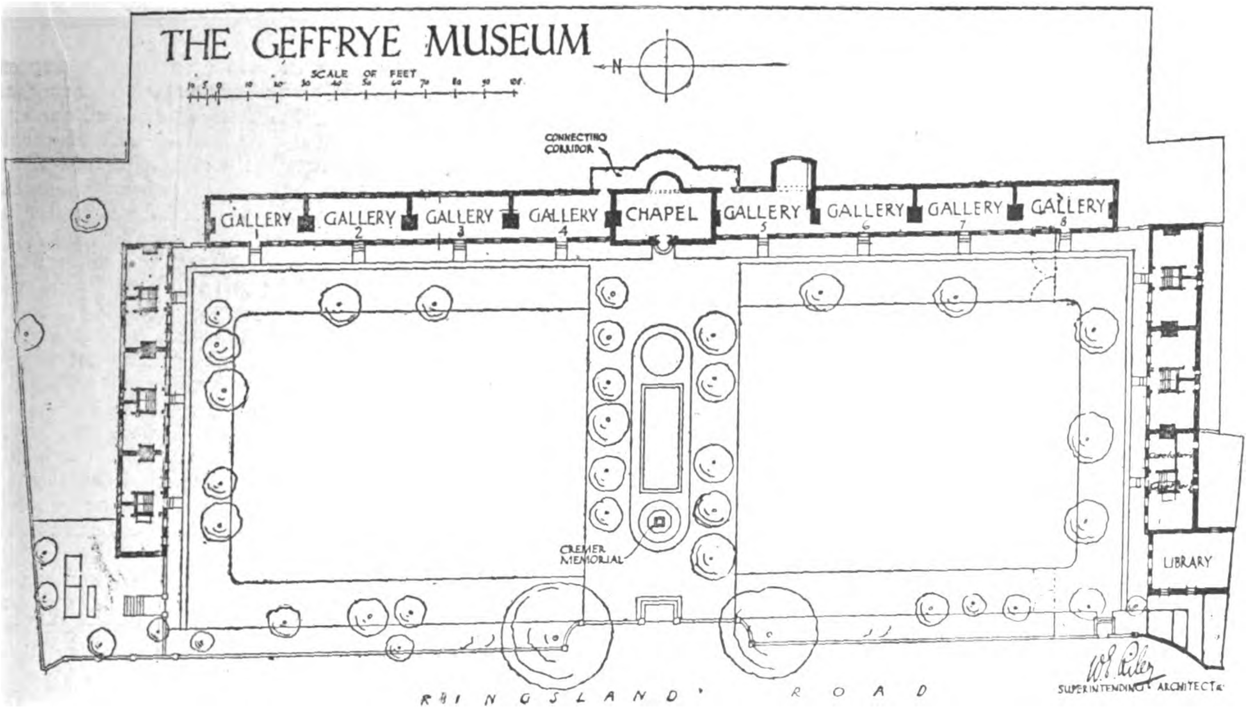
The beams in the galleries midway between floor and ceiling used to support the floor joists. They serve to uphold the front and back walls which, especially the front wall, are out of upright.

A low-pressure hot water warming system, served by a boiler in the crypt has been provided.

Houses in the two wings have been reserved for storing exhibits or for future adaptation as part of the museum, one of the almshouses in the southern wing has been adapted for caretaker's quarters, and the Victoria Hall, at the western end of this wing, is reserved for use at an early date as a library of books, &c., relating to furniture and cabinet making and design.

Exhibits.

In order to supplement its own collections, which form the nucleus of the exhibits, the Council has obtained loans from other sources. The Board of Education has lent a considerable collection from the Victoria and Albert Museum. The City of London Corporation and some private individuals have very kindly lent valuable specimens, and the tenor of certain negotiations leads the Council to hope that it will be equally successful in obtaining, on loan, specimens from other important collections. It is hoped that by varying the exhibits from time to time and presenting a succession of fine examples of different periods the interest of visitors and students will be stimulated.



By the courtesy of the London County Council.]

LONDON COUNTY COUNCIL.

Housing Estates.

In the course of his annual Budget statement, made to the London County Council on Tuesday last, Mr. R. C. Norman, Chairman of the Finance Committee, briefly alluded to the improved financial condition of the Council's Housing Estates. The estimates of the past year, said Mr. Norman, showed a surplus of £10,992, but the surplus was now expected to amount to £15,000, by reason chiefly of improved lettings. In this respect the Council had no doubt benefited from the recent check to building operations, which was causing a shortage of houses, and a consequent filling up of some of the less popular of the Council's dwellings. The estimates for 1914-15 showed a combined surplus of £11,222, and if they were realised the net charge on the rates (*i.e.* past deficiencies less surpluses) would be reduced to about £22,000 by March 1915. The Housing Committee had included £20,000 in their capital estimates for the possible purchase of more land, but at present the Council was in no way committed to the expenditure.

Painters' Wages Dispute.

Late in the Council's proceedings Mr. Ernest Gray, the Chairman of the General Purposes Committee, by special indulgence, made an important statement with reference to the result of the conference held on Monday between representatives of the Council, the master builders, master painters, and the painters' trade union, on the question of the rate of wages now payable to painters. A suggestion was made that the difficulty might be overcome by the Council entering into a separate contract for all painting work, so that there should be one contract for actual building and other work upon structures about to be undertaken, and another for the painting. The Council's representatives were assured that the master painters would willingly advise their organisation to tender under a separate contract, and the trades unionists also approved of the proposal. The master builders were prepared to recommend that members of their Federation should tender for building work under those circumstances, provided that one little difficulty could be overcome. It appeared, explained Mr. Gray, that the priming of woodwork for subsequent painting had to be undertaken in the joinery shop on the builders' premises, and the master builders were reluctant to allow another contractor to enter their workshops to do the priming. It was therefore suggested that the priming of work, so long as it was done in the joinery shop, should be paid for at the rate of 9*d.* per hour, and when the woodwork left the shop and went on to the job itself the whole of the subsequent painting should be paid for at the rate of 9½*d.* per hour. He was glad to be able to inform the Council that he had that evening received a communication from the painters' trade union indicating their willingness to accept the proposal. (Hear, hear.) The arrangement arrived at, added Mr. Gray, was only a temporary expedient, and he hoped, when the end was reached of the regrettable differences in the building trade, there would be no necessity to continue it.

Mr. Gray's announcement was received with general indications of approval on all sides of the Council.

ART IN LONDON.

A Quadruple Bill at the Fine Art Society's Galleries.

Miss Mima Nixon, Messrs. G. Spencer Watson, A. Reginald Smith, Valentine Gross, and others. Here is undoubted variety, that should serve to meet the differing tastes of art-gallery frequenters. In a few lines, let us make manifest to what extent our own proclivities are satisfied. And, first of all, let us sweep out of our path all the works portraying Nijinski and his colleagues, for while we may admit the clever pose-drawing in some instances, the whole effect of this collection of works is not that of high art—and this is at least mild criticism.

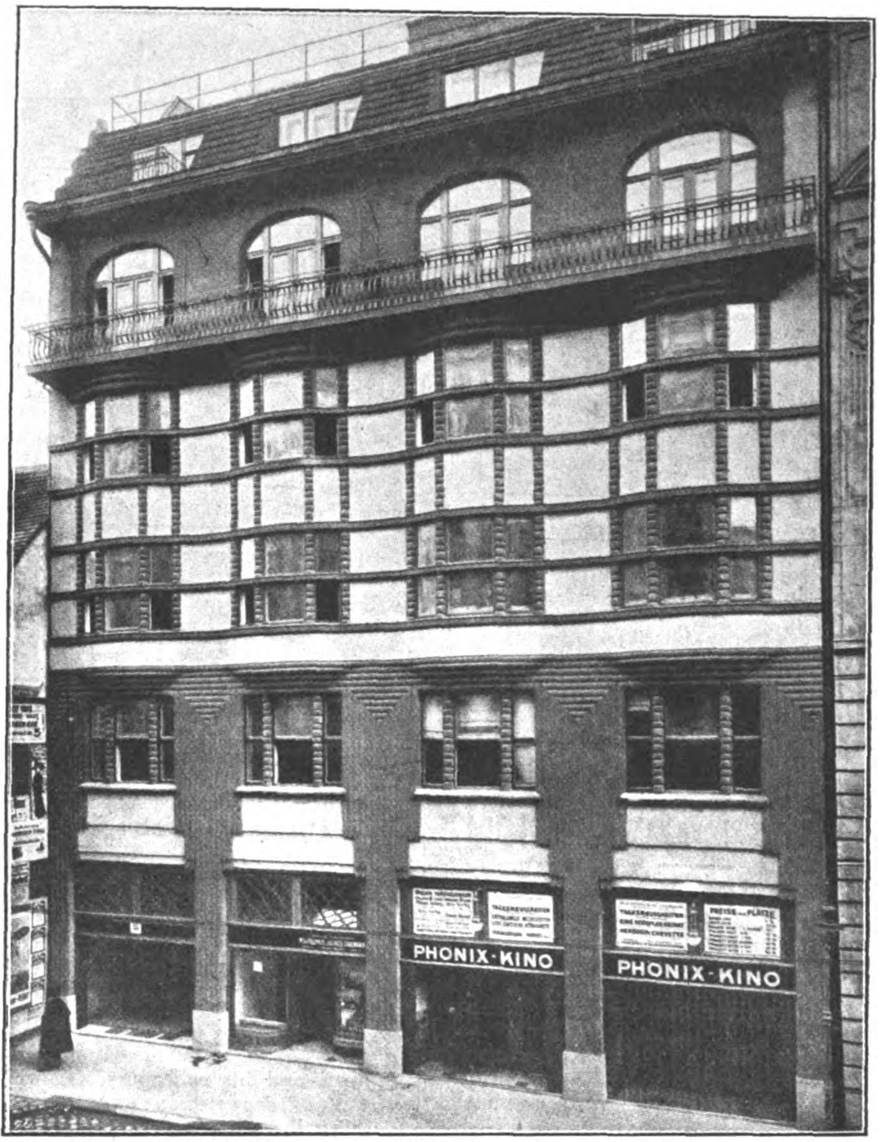
What does Miss Mima Nixon, then, hold out in order to arrest our attention? The subjects themselves, being mostly Royal palaces and gardens, are sure to attract *per se*; but the work, the technique, falls far short of that of some other artists whom we have from time to time subjected to our criticisms. Miss Nixon's flower displays are too forceful in their presentation of colour; they lack the delicate charm so prevalent in the work of Miss Du Cane, Mrs. Allingham, and Mr. Cyril Ward, for example. Regard "Cinerarias—Villa Achilleion," "Roses—Versailles," "A Madrid Donkey," and many others, where the brightness of the palette does not atone for the lack of artistic modulation. But Miss Nixon has good work on exhibit, such as "The Sunk Garden, Kensington Palace," "Maria Theresa's Gloriette—Schönbrunn," "A Corfu Donkey," "Château Sofierö," "The Mermaid, Schönbrunn," and "Sanssouci"; her drawing of architecture is very indifferent in most cases.

Nor do we care to devote even as many lines to the exhibits of Mr. G. Spencer Watson; if we say that the best of his works are "A Garden in Kensington" and "A Woman in White" we feel that justice has been satisfied, and that we may pass on to a notice of Mr. A. Reginald Smith's water-colour sketches.

What a sense of relief from eye-strain was experienced in passing from the gallery where Miss Nixon's works were hung to that decorated by the works of Mr. Reginald Smith! The cool, restful, harmonious colouring of the Buckingham Palace interiors and the equally restful series portraying Yorkshire dales affected us and our companion in similar measure. Here, too, we found the buildings well and sympathetically touched in, and the only work which we did not like out of the seventy-one on exhibit was the one portrait whose flesh-tones lacked the purity, or at any rate the propriety, of colour which we look for in female portraiture.

MODERN EUROPEAN ARCHITECTURE.

AUSTRIA.



[From *Der Architekt.*

SHOPS AND RESIDENCES IN LERCHENFELDERSTRASSE, VIENNA.—Herr Hans Prutscher, Architect.

The very best of Mr. Smith's works, where indeed practically all is good, were "Hazlewood Moor," "Kettlewell Bridge," "The Hour of Night," "Sunset Glow, Knaresborough," and "Old Cottages, Starbotton"; but let us end on the words, which really form our mental refrain—all is good.

EDINBURGH ARCHITECTURAL ASSOCIATION.

Through the generosity of one of its oldest members—Sir R. Rowand Anderson, LL.D., F.R.S.E., F.R.I.B.A.—this Association has been enabled to offer for competition amongst the younger members of the profession in Scotland two travelling studentships of £40 each for the encouragement of the study of the development of steel construction, more particularly as exemplified in the work of France and Germany, the aim of the donor being to direct attention to the manner in which steel work is being treated in the most modern buildings abroad. The successful candidates are required to expend not less than eight weeks on the Continent, during which time they will study, examine, and make detailed drawings, sketches, and, if possible, photographs of this class of work, amplified by descriptive notes, it being the intention of the Association to publish the whole in book form if of sufficient merit. Applications, accompanied by testimonies of study, have been received from various parts of Scotland, showing a high standard of merit, and these have now been considered by the committee in charge, who have, after full consideration, awarded the prizes to Mr. James M. Brown, at present assistant with Messrs. Alexander Cullen, Lochhead & Brown, Hamilton, and Mr. William Paterson, A.R.I.B.A., of Edinburgh. Both these gentlemen are to undertake the duties of the studentship in the course of the coming summer.

BUILDING PROGRESS IN THE PROVINCES AND SUBURBS.

A LIST OF WORKS PROJECTED OR COMMENCED.

(N.B.—Local Authorities, architects, and others are invited to submit full particulars for insertion in this weekly list. Where districts are not entered against names of architects and builders the address is as a rule local.)

ENGLAND.

Buckinghamshire.

Chesham.—Baptist Sunday School, New Town.

Cambridgeshire.

Cambridge.—P.M. Day Schools, Castle Street.

Cheshire.

Birkenhead.—Picturedrome, Victoria Road, Seacombe, Wallasey, for Mr. W. J. Ewbank.

Saltney.—One hundred and thirty workmen's dwellings, for Chester Town Council.

Cumberland.

Penrith.—The Alhambra Theatre: additions and alterations. Mr. P. M. Hope, architect, 11 Main Street, Cockermouth.

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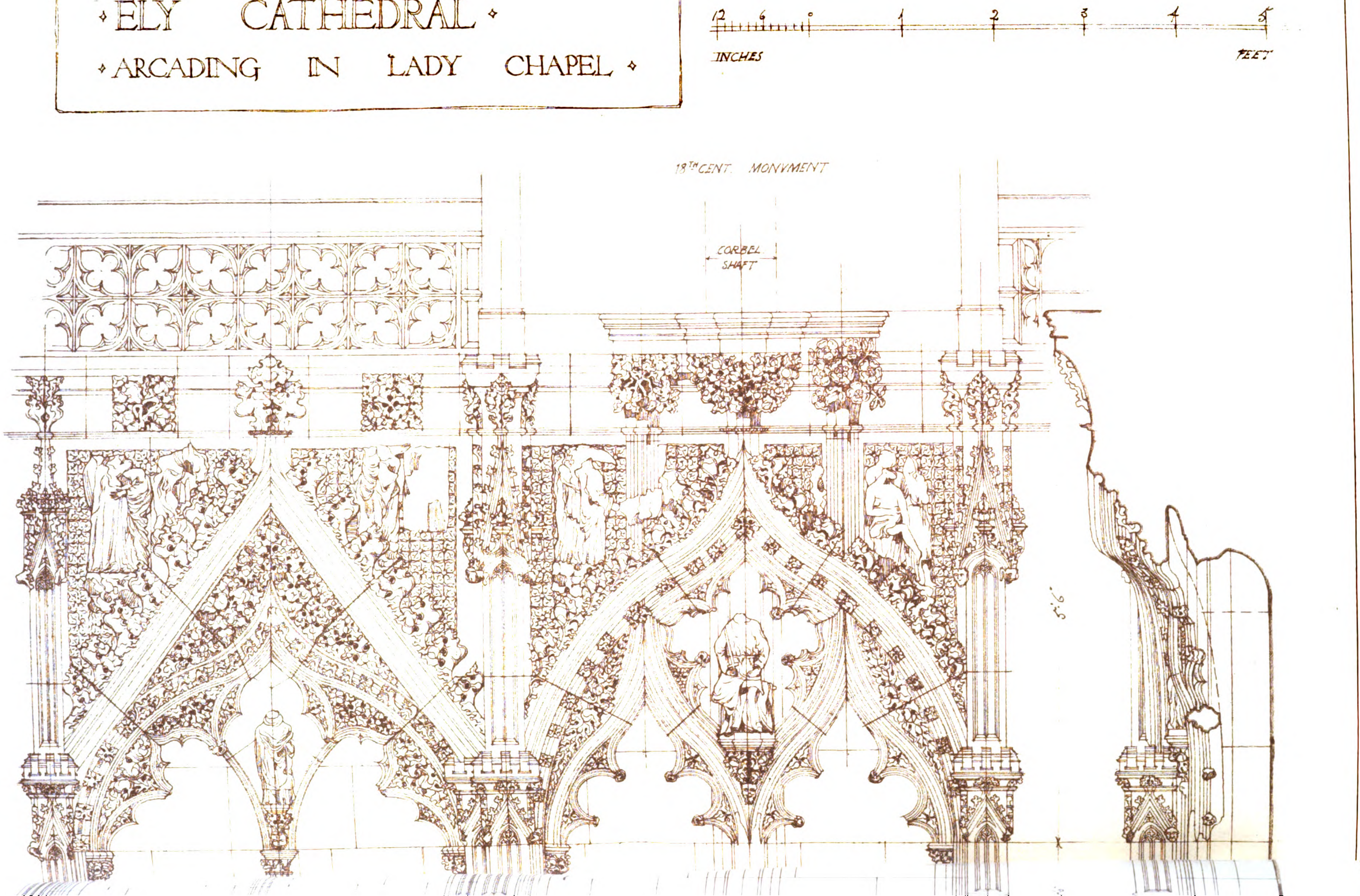
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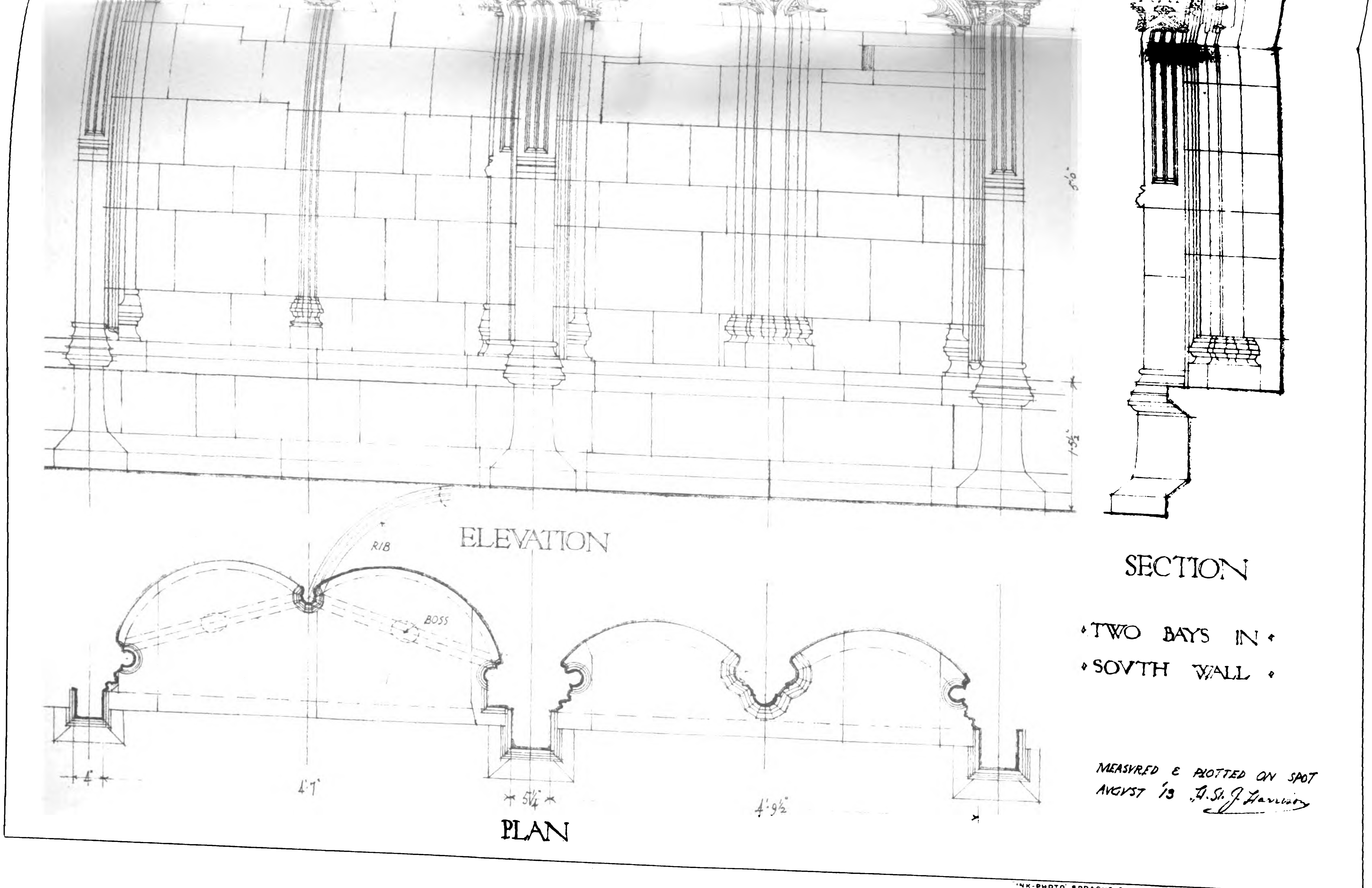
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1'5½"
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RIB
BOSS
SECTION
• TWO BAYS IN •
• SOVTH WALL •
4"
4'7"
5¼"
4'9½"
PLAN
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AVGVST '13 „H. St. J. Harrison

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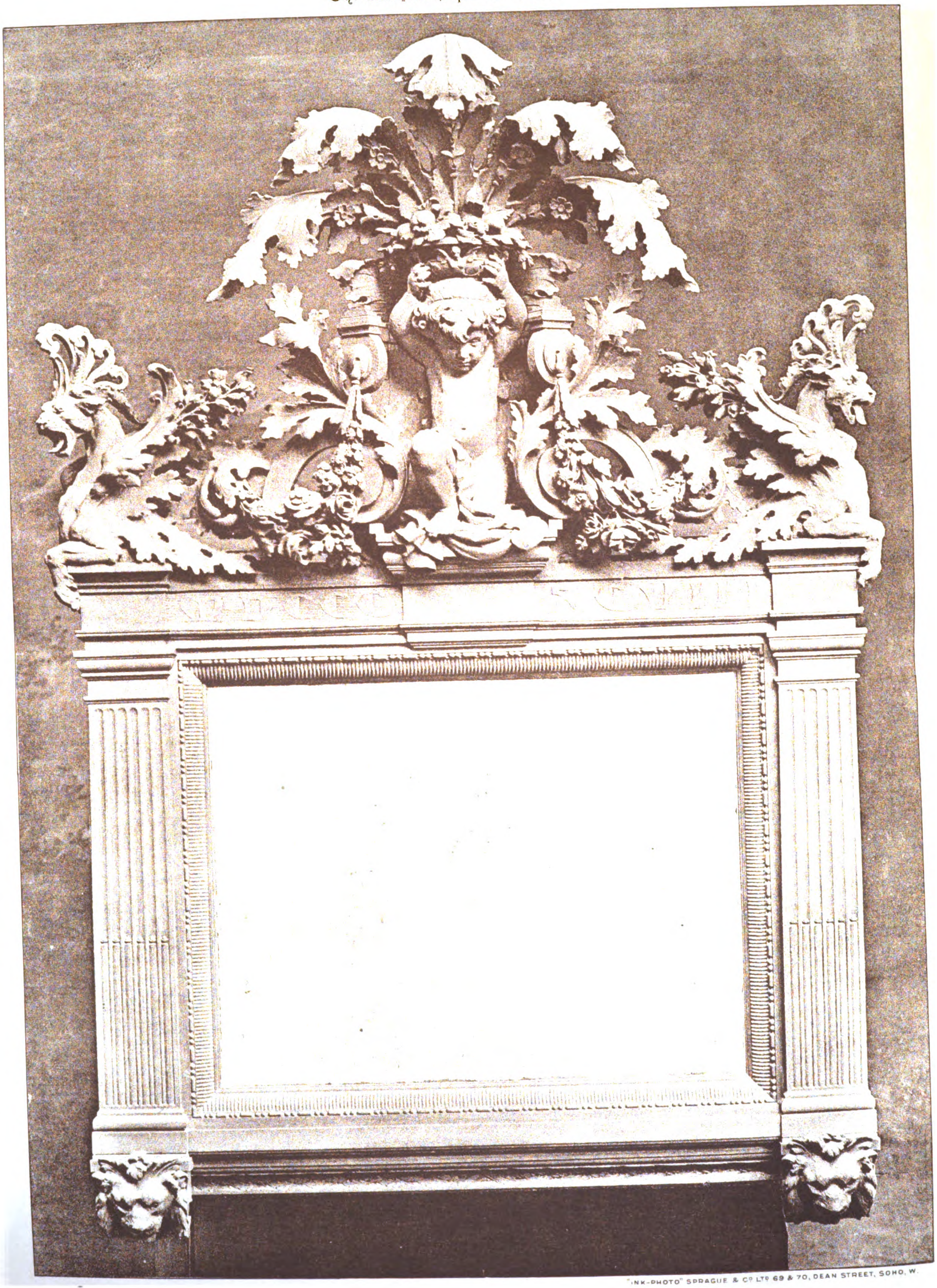
From a drawing by Mr. H. St. JOHN HARRISON.

The Architect, April 10th 1914.



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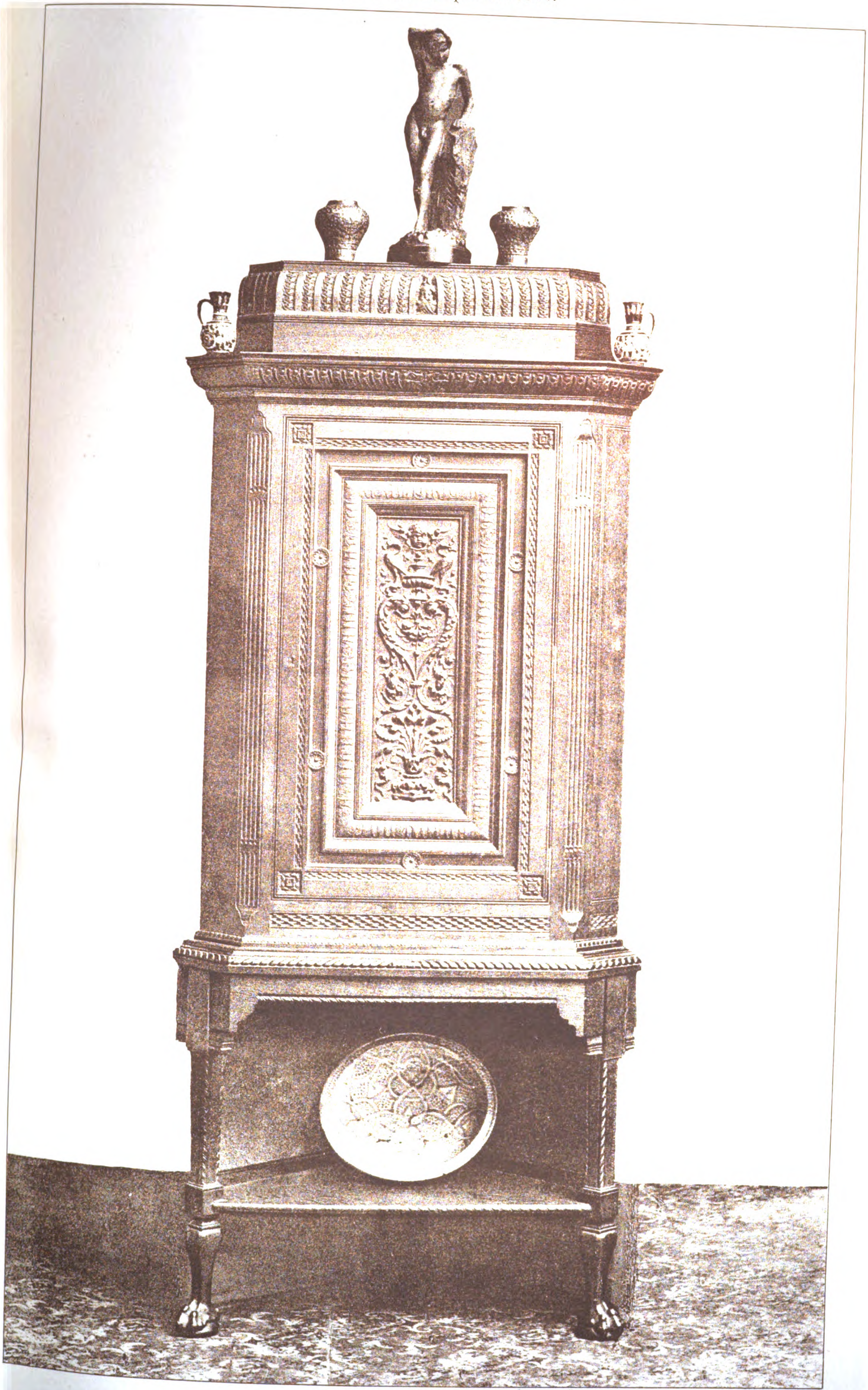
MIRROR FRAME IN PINE.

By Mr. MARK ROGERS R.B.S



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CORNER CABINET IN OAK.

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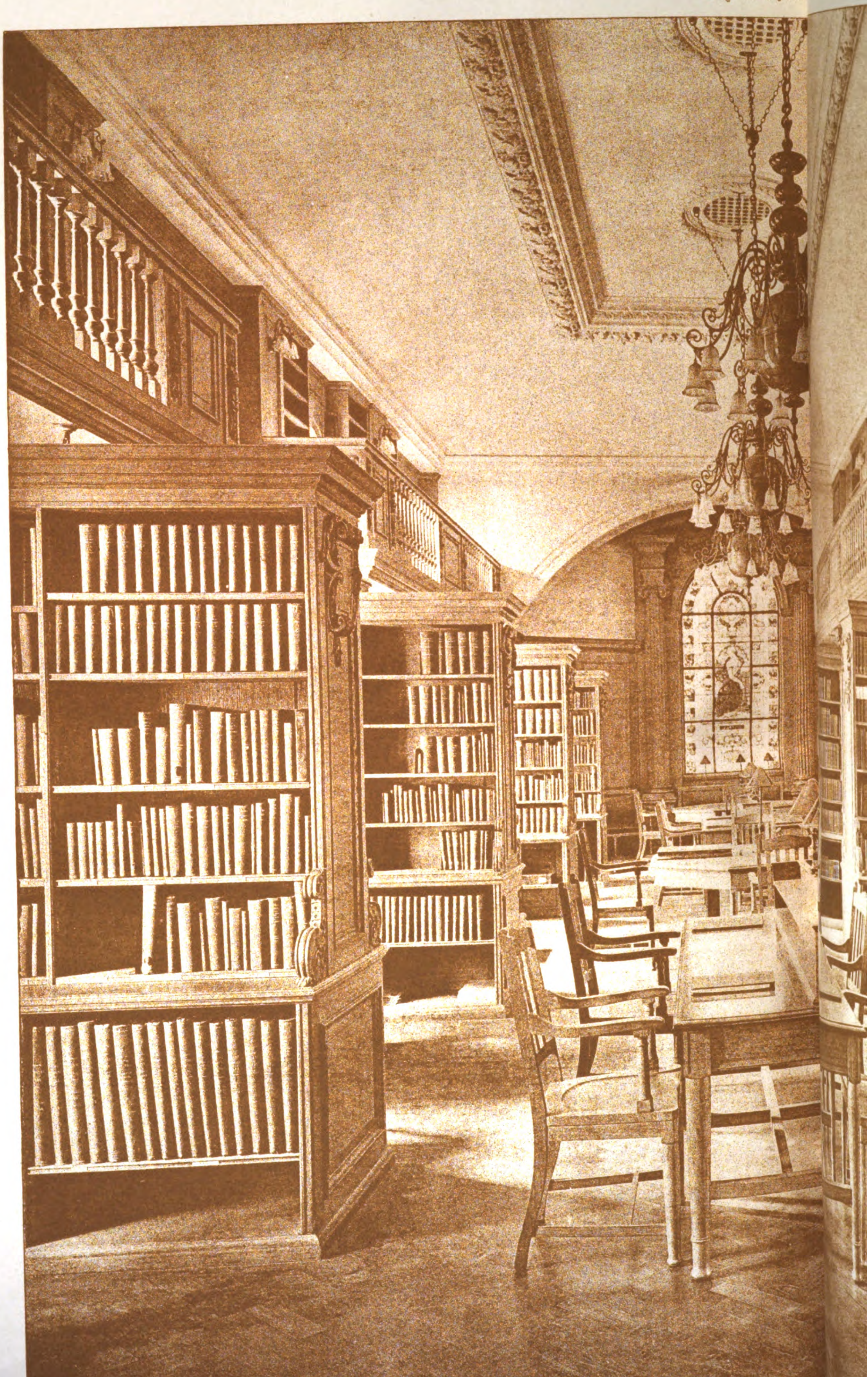

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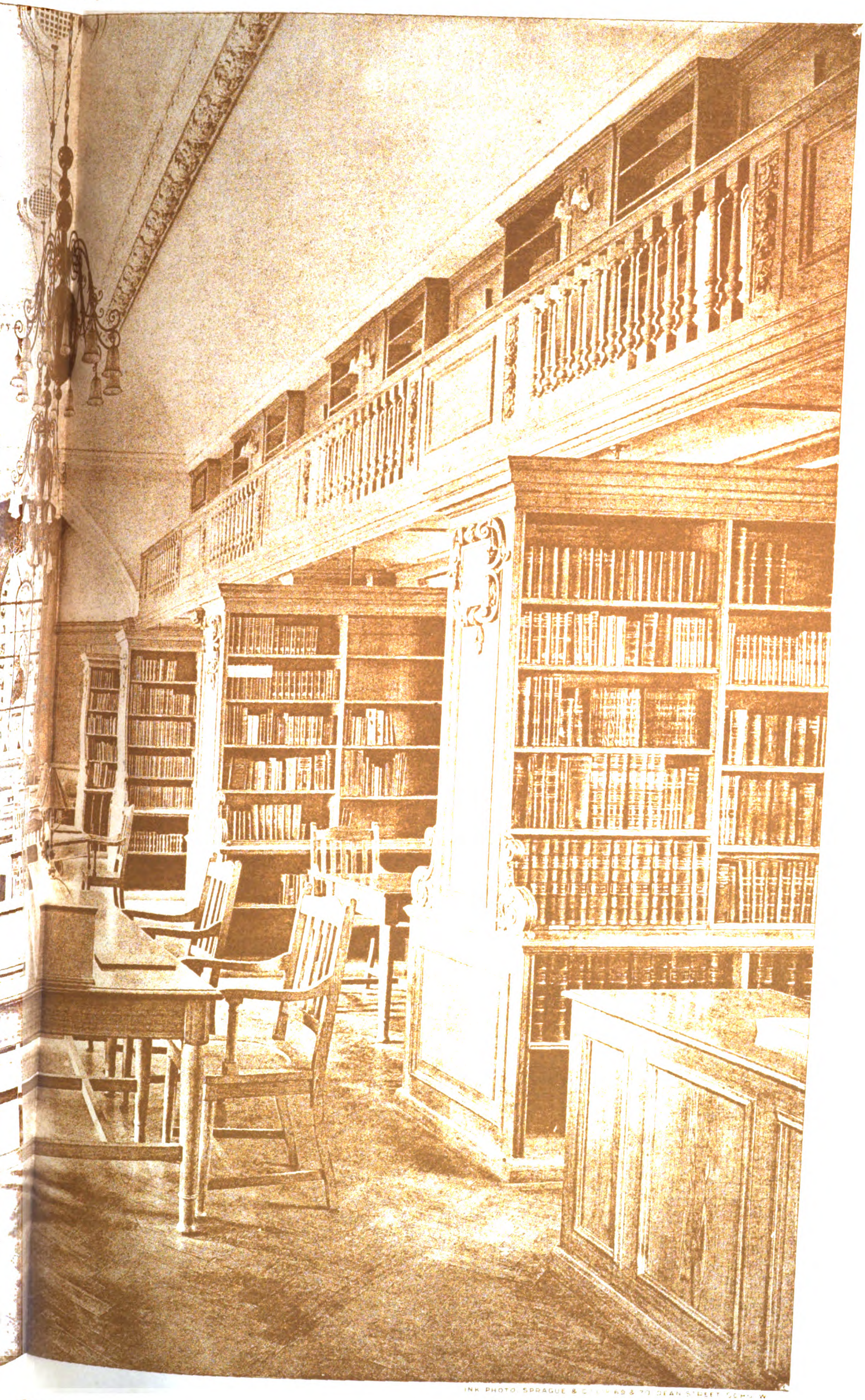

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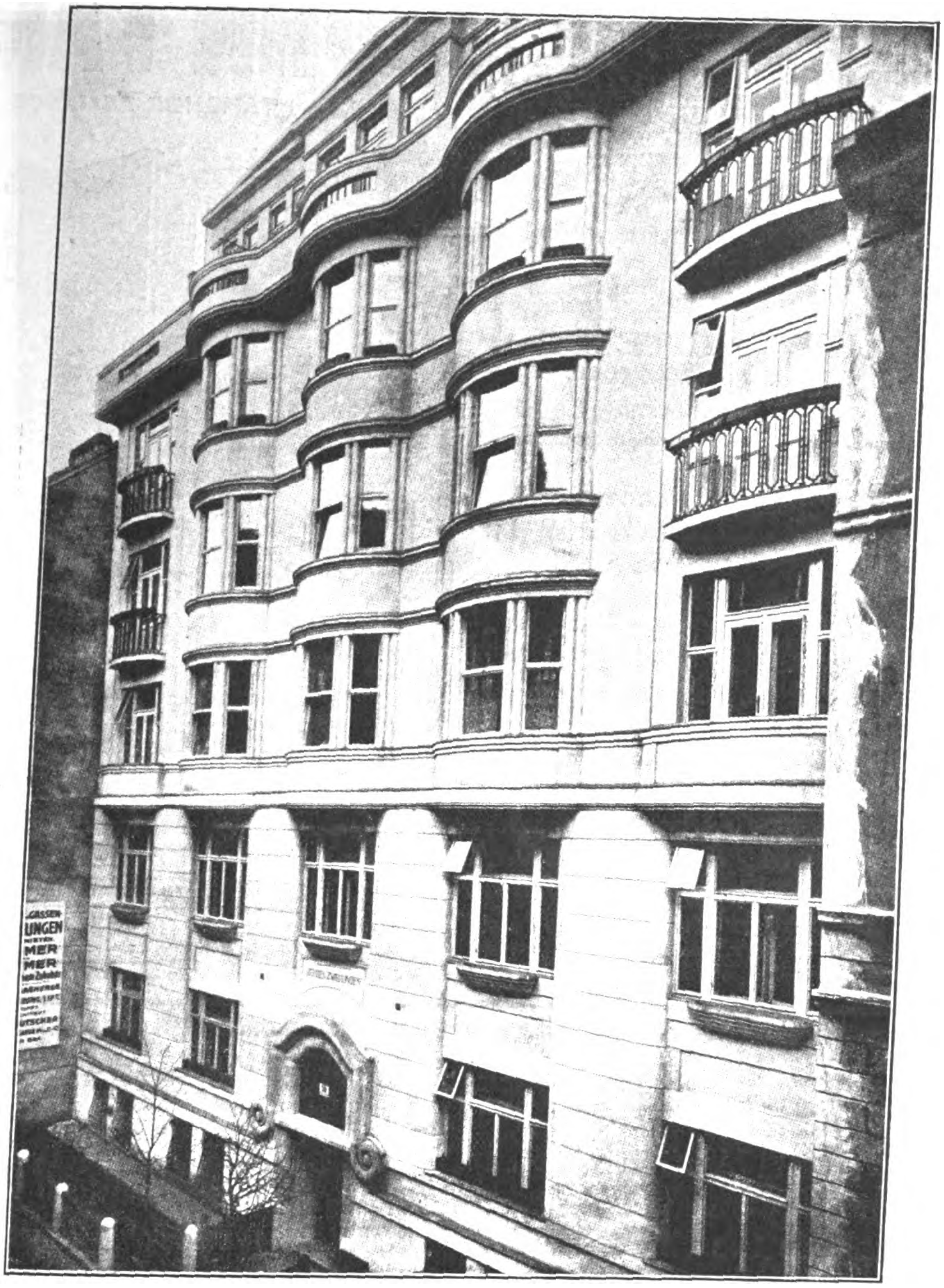

[From *Der Architekt*

RESIDENCES IN DANNHAUSERGASSE, VIENNA.—Herr HANS PRUTSCHER, Architect.

Derbyshire.

Borrowash.—Elementary Day School.

Derby.—Free Library and Art Gallery: extension (£6,000). Mr. T. H. Thorpe, F.R.I.B.A., architect, 23 St. James' Street.

St. Peter's Theatre and Café, St. Peter's Street (£10,000). Messrs. W. Ford & Son, contractors, Summer Hill Yard.

Technical College: alteration and enlargement.

Spondon.—Parish Church: vestry.

Devon.

Bideford.—Four cottages, for R.D.C. (£1,020).

Chudleigh.—Twelve Council houses (£2,400).

Devonport.—Council School for 247 places, College Road. Mr. G. B. Turpin, contractor, 4 Courtenay Street, Plymouth (£2,650).

Holsworthy.—Five Council cottages (£1,000). Mr. F. E. L. Downes, architect, 36 Queen Street, Newton Abbot.

Durham.

Blackhalls Colliery.—Seventeen shops, &c. Mr. J. W. Hays (of Wingate), architect; also Picture Theatre, for Mr. A. C. Harrison.

Durham.—Barracks (£1,000 for present construction).

Easington.—Shop for the British Bazaar Co. Mr. J. W. Hays (of Wingate), architect.

Oakenshaw.—Workmen's Club.

Pelton.—Cemetery extension: chapel (£520).

Essex.

Chelmsford.—Motor garage, showroom, workshops, &c., Duke Street. Messrs. C. & W. H. Pertwee, architects, Institute, London Road.

Hampshire.

Christchurch.—Cinema Theatre, Bargates. Mr. W. Wheeler, A.R.I.B.A., architect, 137 High Street, Southampton.

Kent.

East Farleigh.—Council School, Vicarage Lane.

Gravesend.—Thirty houses, Grange Road. Messrs. Bridgland & Clay, A.R.I.B.A., architects, 28 King Street.

Hadlow.—Eight workmen's cottages, Court Lane. Mr. F. Harris, surveyor to Tonbridge R.D.C.; also

Hildenborough.—Four Council cottages, Riding Lane.

Maidstone.—House, Buckland Hill, for Messrs. Clarke & Epps.

Plaxtol.—Council School.

Sevenoaks.—Fourteen workmen's houses.

Shorncliffe Camp.—Sir John Moore (Memorial) Library.

Lancashire.

Barrow-in-Furness.—Secondary School.

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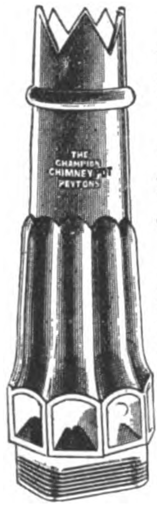
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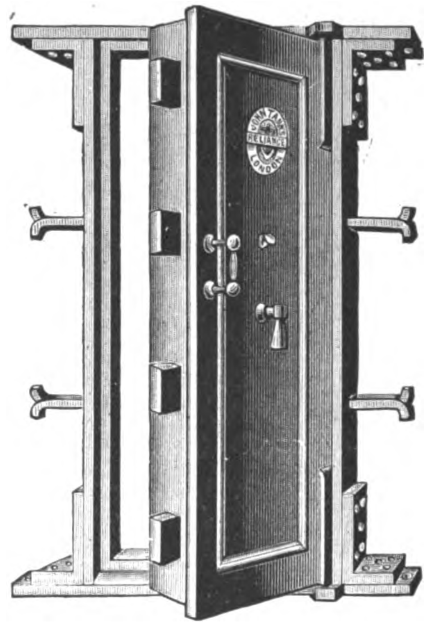

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LANCASHIRE—*continued.*

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Recreation room premises, Pilkington Street, for Mr. J. Simpson.

Works, Berry Street: addition for Mr. H. Guest.

Coppull.—St. John's Parish Hall (£1,350).

Lancaster.—Picture House, Market Street. Mr. J. H. Shennan, architect, 35 Dale Street, Liverpool.

Liverpool.—St. Mark's Church, Litherland (£5,500).

Nelson.—Council School, Whitefield (£13,180).

Oldham.—Hollinwood Congregational Sunday School. Messrs. Winder & Taylor, architects, 61 Union Street.

LINCOLNSHIRE.

Bourne.—Isolation Hospital (£6,100).

MIDDLESEX.

Golder's Green.—Church (for 750 sittings), St. Alban, for the London Diocesan Home Mission.

Heston-Hounslow.—County Asylum.

Willesden.—Fire Station. Council engineer.

MONMOUTHSHIRE.

Beaufort.—The "Rising Sun" P.H.: rebuilding. Mr. H. Waters, architect, Market Chambers, Ebbw Vale.

NORFOLK.

Acle.—Church Schools: enlargement.

NORTHUMBERLAND.

Blyth, Kittybrewster, and Newsham.—Buildings and depôts, for Blyth U.D.C. (£2,350). Mr. R. Grieves, Council surveyor.

Newcastle-on-Tyne.—Public Elementary School, Walker Road.

Newsham.—(See above.)

Scotswood.—U.M. Church.

NOTTINGHAMSHIRE.

Radford.—All Souls' Parish Hall and Sunday Schools, Radford Boulevard (£3,100). Mr. F. Ball, architect, 23 King Street, Nottingham.

SOMERSET.

Basonbridge.—Four workmen's cottages (£800).

STAFFORDSHIRE.

Caverswall.—The Meir Council School: improvements.

Chase Terrace.—Two houses, New Street, for Mr. C. E. Turner.

Two houses, Thorpe Street, for Mr. S. Thompson.

Chase Town.—Two houses, High Street, for Mr. T. Bagot.

Fulford.—Council School, additions, &c.

Ipstones.—Foxt C.E. School: enlargement.

Madeley.—Endowed School: improvements.

Perry Barr.—R.C. School, Maryvale: enlargement.

Rocester.—Mixed Council School: improvements.

Wolverhampton.—Technical School.

SURREY.

Horsell.—Proposed Infants' Council School for 200 places.

Knaphill.—Council School: additions.

Redhill.—Proposed Public Baths (£9,200).

SUSSEX.

Bexhill-on-Sea.—Isolation Hospital (£6,420).

Bognor.—Two working-class dwellings, Ockley Road.

Horsham.—The "King's Head" Shades: rebuilding.

Midhurst.—Two pairs of working-class cottages, Milland (£725).

WARWICKSHIRE.

Ansley.—Two houses, for Mr. A. Adler.

Coundon.—Pigsties, &c., Brownshill Green, for Mr. W. Kirk.

Dordon.—House, for Mr. E. Blower.

Galley Common.—Club-room and caretaker's house, for the Haunchwood Collieries, Ltd.

Marston Green.—Two houses, Elmdon Road, for Mr. J. Mowe.

Nuneaton.—Art Gallery and Museum, Riversley Park.

Bakery, &c., Abbey Street, for Mr. W. J. Yoxall.

Children's Home: extension. Mr. E. E. Shepherd, architect, New Bridge Street.

Two houses, Princes Avenue, for Mr. W. E. Mayor.

Five houses and shops, Queen's Road, for Messrs. Dixon & Taylor.

Four lock-up shops, Queen's Road, for Mr. J. Moore.

Tile Hill.—Piggeries, &c., Banner Lane, for Mr. P. Bingley.

WILTSHIRE.

Bradford-on-Avon.—Seven workmen's dwellings, Frome Road (£1,470).

WORCESTERSHIRE.

Dudley.—Works for Messrs. Courtaulds, Ltd. (of Coventry).

YORKSHIRE.

Barnsley.—Workhouse: four cottages for the Board of Guardians.

Bentley Colliery.—Church. Mr. F. N. Masters, M.A., architect, Bank Chambers, Scot Lane, Doncaster. Messrs. Sprakes & Son, contractors, 37 E. Laith Gate, Doncaster.

Bradford.—Stores, Lidget Green: additions and alterations for the Great Horton Industrial Society, Ltd. Messrs. J. Drake & Son, architects, Queensbury.

Dewsbury.—Three houses, Wakefield Road. Messrs. Kirk, Sons & Ridgway, F.R.I.B.A., architects, Market Place.

Horbury Junction.—Twelve houses for Horbury Industrial Co-operative Society, Ltd. Messrs. W. Thornton & Son, A.R.I.B.A., architects, Bond Street, Dewsbury.

Linthwaite.—R.C. Church, Commercial Street, for 200 places.

Morton.—"The Cliffe": additions and alterations for Mr. H. Wright.

Riddlesden.—House, Broad Lane, for Mr. G. Smith.

Steeton.—House, School Street: additions for Mr. J. W. Sutcliffe.

WALES.

Bridgend.—Cottage Homes. Mr. P. J. Thomas, architect, Nolton Street.

Cardiff.—Premises, St. Mary Street, for the Co-operative Wholesale Society. Mr. F. E. L. Harris, A.R.I.B.A., architect, 1 Balloon Street, Manchester.

Connah's Quay.—St. David's Mission Hall (£2,400). Mr. L. W. Barnard, architect, Old Bank Chambers, Chester.

Llandudno.—Workmen's dwellings (£4,900).

St. Athan.—Church Hall and Reading-room.

SCOTLAND.

Aberdeen.—Robert Gordon's Technical College: additions and alterations (£39,000).

Buckie.—Picture House, West Church Street, for Mr. J. Archibald. Mr. W. Hendry, architect, 91 West Church Street.

Dumbarton.—Additional Stores, Leven Shipyard, for Messrs. W. Denny & Brothers.

Greenock.—Retort House at Gasworks, Inchgreen, for the Corporation.

IRELAND.

Blackrock.—Electric Power Station. Mr. J. P. Tierney, consulting electrical engineer and Council surveyor.

Nenagh.—Town Hall. Mr. R. F. Gill, architect.

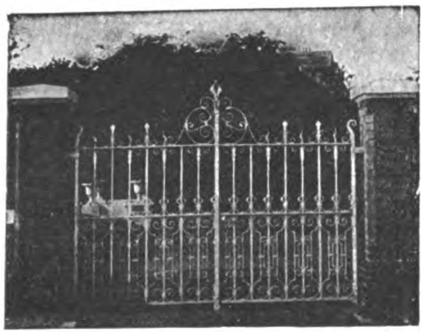
Rosscarbery.—Dispensary and residence, Burgatia. Mr. J. J. O. Crowley, architect.

BRITISH PATENT SPECIFICATIONS.

Selected by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

The first date given is the date of application; the second, at the end, the date of the advertisement of the acceptance of the completed specification.

No. 4,897. Feb. 26, 1913.—T. B. Cooper & C. E. Holloway, Sun Buildings, Clare Street, Bristol, civil engineers. Reinforcing of concrete structures. This invention relates to the reinforcing of concrete structures, and specially to the construction of reinforcing trusses. There are comprised in fig. 1 three different kinds of reinforcing stirrups—*a*, *b*, and *c*—suitable for employment in the construction of trusses. The stirrup *a* is looped at one end and twisted to form a fork *d* at the other end. The stirrup *b* has a loop at one end and an eye at the other. The stirrup *c* has a loop at one end and is twisted at the other end, where it has extensions from the twisted part. Fig. 2 shows two views, an elevation and an end view respectively, of one half of a truss in process of construction, the stirrups *f* being shown strung on the main reinforcing bar *g*, and having a bar *e* of small diameter lying in the forks of the stirrups. Fig. 3 shows an elevation and an end view respectively of one half of a truss completed, the stirrups *f* being shown as having been strained to lie at a suitable angle. The main reinforcing bar *g* and the bar *e* are tied together with ties or connections *h*. Fig. 5 shows part of a truss in the construction of which a compressive reinforcement bar *n* is used, and stirrups are employed of the kind indicated by *c*, fig. 1. Referring to fig. 2, which shows one half of a truss in process of construction, the stirrups *f* are of the kind indicated by *a*, fig. 1. The stirrups are looped at one end, and by the loops they are strung on the tension reinforcement bar *g*, along which the stirrups are



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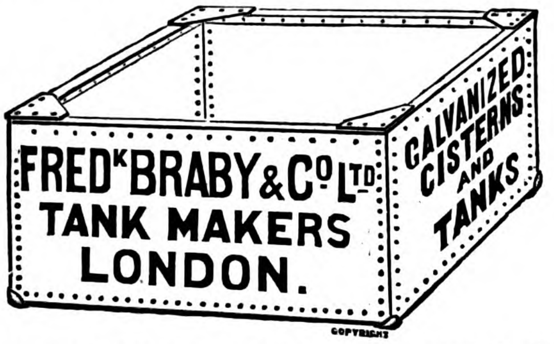

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slid to their required locations. In the forks at the other ends of the stirrups is laid a bar *e*. By pressure exerted, by hand or otherwise, on the bar *e*, all the stirrups *f* of the set are forced into a slanting or inclined position, as seen at fig. 3. The bars *e* and *g* are then tied together by ties *h*. By the tendency of the stirrups to rebound, the loops become jammed tight on the main reinforcement bar *g*, and the forks bear tightly against the bar *e*. The angle of inclination of the stirrups is shown as uniform. In the other half of the truss the stirrups are, as is usual practice, sloped in the reverse direction to those of the half-truss illustrated. In the half-truss fig. 5, the stirrups *q*, looped on the tension reinforcement *o*, bind against the compressive reinforcement bar *n*, to which the stirrups may be secured by twisting their extensions. The bars *n* and *o* are tied together by cross ties *p*. At the right-hand end of the semi-truss two stirrups are shown in the position they assume prior to being inclined. Feb. 11, 1914.

FIG. 1.

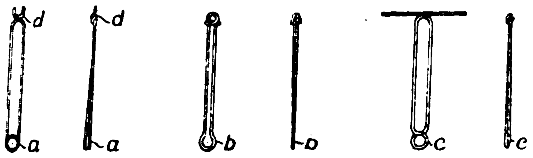


FIG. 2.

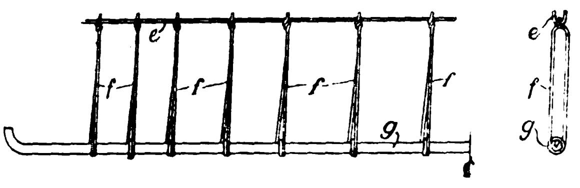


FIG. 3.

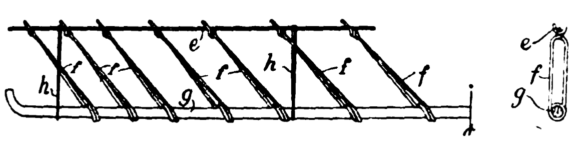
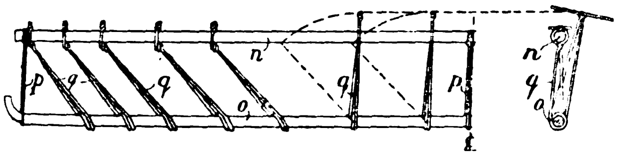


FIG. 5.



PATENT SPECIFICATIONS PUBLISHED. APRIL 2, 1914.

Selected and abridged by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

No. 5,729. March 7, 1913.—Dated under International Convention March 8, 1912. Alex. Laffly, 82 rue du Vieux, Pont du Sevres, Boulogne. Road-sweeping devices.

5,897. March 10, 1913.—James Mashiter, 9 Holmfield Avenue, Church Lane, Moston, Manchester. Self-closing dustbin lid.

6,233. March 13, 1913.—James Keith, A.M.I.C.E., M.I.M.E., and D. E. Bain, A.M.I.M.E., both of 27 Farringdon Avenue, E.C. Tubular apparatus for heating or cooling air for ventilating or the like.

6,381. March 14, 1913.—F. Haag, 24 Ziegel Strasse, Strassburg, Neudorf, Rhine, Germany. Tile.

7,394. March 28, 1913.—Robert Adams, 3 and 5 Emerald Street, Theobald's Road, W.C., and R. H. Adams, 12 St. Margaret's Road, Manor Park, E. Door springs and checks.

16,636. July 19, 1913.—Dated under International Convention July 20, 1912. M. J. & G. H. Langlois, 20 Place Felix Faure, Paris. Cements or agglomerates for constructional purposes.

17,797. Aug. 2, 1913.—Edward Bignell, Lincoln, Lancaster, Nebraska, U.S. Sinking of piles, caissons and the like.

17,820. Aug. 5, 1913.—G. D. Innes, of Bennett's Ironfoundry Co., Ltd., Green Lane, Stockport. Frame for supporting a lavatory basin and the like.

6,918. March 20, 1913.—Guillaume Verstraeten, 36 Rue de Jena, Lille, France. Safety attachment for locks.

25,118. Nov. 4, 1913.—Joseph Southall, the Worcester Foundry, Worcester. Concrete mixing machines.

28,942. Dec. 15, 1913.—Karl Jahn, 8 Melchiorstr, Berlin S.O., Germany. Hot-water installations.

30,062. Dec. 31, 1913.—A. R. E. Paul, 419 Sixtieth Street, and George Peterson, 624 Fifty-Seventh Street, Brooklyn, N.Y., U.S.A. Faucets or valves.

3,170. Feb. 6, 1914.—Dated under International Convention Feb. 8, 1913. J. A. Windemuller, 16 Spoorsingel, Rotterdam. Ball and socket joint for pipes.

Any of the above specifications may be obtained from J. D. Roots & Co.

Correspondence

[The Editor will not be responsible for the opinions expressed by Correspondents.]

Registration by "Charter" or by "Bill."

Sir,—Who cares which way it is done so long as it *is* done? Whether Institute or Society can do the shouting afterwards matters very little to the country practitioner, provided that the local plumber and decorator will in future stick to his "profession" and let me carry on my "trade" as an architect, and the local auctioneer (believe me, a very decent fellow) can stick to his house agency business, and knock down at bargain prices the furniture which has been seized for payment of the taxes and super taxes a beneficent Government provides to keep one's bank balance in a proper state of N/S.—Your obedient servant,

A Sussex Architect.

April 4, 1914.

The Real Property Bill.

Sir,—I am desired by the Council of the Surveyors' Institution to bring to your notice the enclosed comments upon Parts 2 and 3 of the above Bill.—Yours faithfully,

A. Goddard,
Secretary.

12 Great George Street, Westminster, S.W.:
April 2, 1914.

Parts II. and III. of the Real Property Bill.

This Bill, which was introduced by the Lord Chancellor in the House of Lords last session, and is expected to be introduced at an early date in the present session, proposes, among other matters, to abolish copyhold and other special tenures and perpetually renewable leaseholds. According to the explanatory memo. issued with the Bill, "land of copyhold tenure is immediately and automatically converted into land of freehold tenure on the Bill coming into operation, but all the manorial incidents of pecuniary value to the lord are temporarily preserved."

The Bill, in effect, converts the steward of a manor into a land register officer, and the court rolls into a register on which the title will be freehold, subject to the rights of the lord.

In order to encourage the extinguishment of these rights the Bill provides that enfranchisement awards are not to be liable to stamp duty if they are carried out, or if notice of enfranchisement is given, within five years of the passing of the Act, nor are any fees to be charged by the Board of Agriculture and Fisheries. This freedom from stamp duty is not, it seems, extended to deeds of enfranchisement under common law. Many of the provisions are of a strictly legal character, but some affect the position of the surveyors or valuers to the respective parties, and materially alter the incidence of the expense to which the lord may be put.

The compensation, unless otherwise agreed, is to be determined in accordance with the scale set out in the Bill, and this scale is to be binding as a matter of law, unless an application to the Board is made on the part of either the lord or tenant, and the Board decide that owing to special circumstances the scale would work injustice, in which case the scale may be varied, or some other scale may be fixed. The present scale provided by the Board is not binding on the parties, and in enfranchisements outside the Act is frequently varied.

Valuations are to be made by a single valuer unless the parties otherwise agree, and in the default of agreement as to the valuer he is to be appointed by the Board and his

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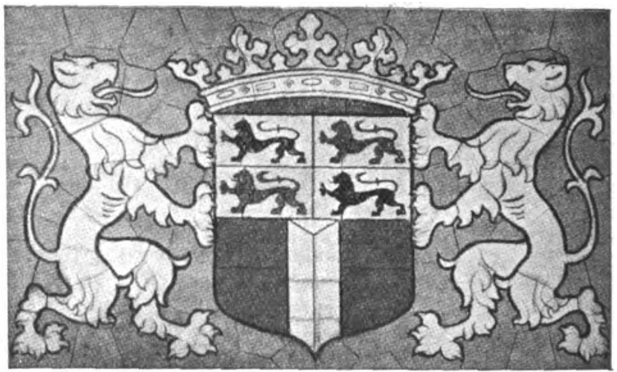

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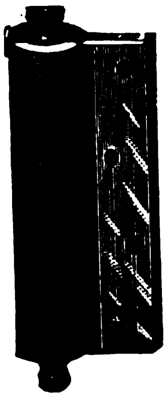

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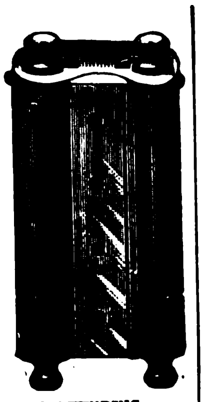

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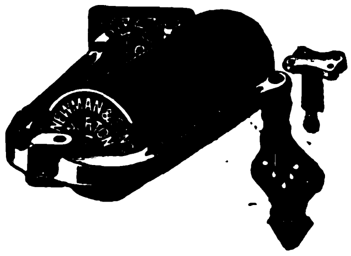

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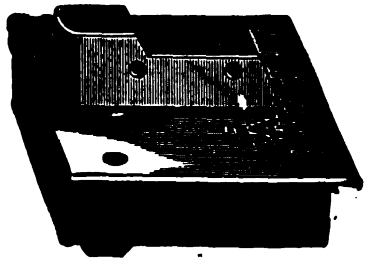

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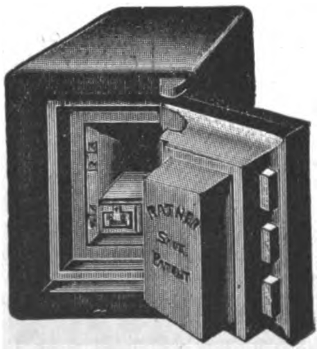

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remuneration to be fixed by them. As it is now required that an umpire shall have no interest on either side, it would follow that the single valuer must be equally uninterested, and it would also follow that the surveyor usually employed by the lord, and best acquainted with the practice in the manor, would be prohibited from acting or intervening in the transaction except, perhaps, as a witness. The valuer's charges are to be divided between the two parties, varying the present rule that the expenses are to be paid by the party giving the notice. Occasions on which the lord gives notice seldom arise, and then only in manors of peculiar custom, as the compensation payable for enfranchisement makes no adequate return for the expenses incurred. In the case of fines certain, the advantage of enfranchisement to the tenant is usually sufficient to justify him in incurring the costs incident to the transaction in addition to the consideration money, while the payment of half the costs might deprive the lord of a considerable portion of the amount he was justly entitled to under any award. There seems no adequate reason for altering the practice under which the party desiring to alter the tenure should pay the cost to which the other party is put, and, certainly, the desirability in the public interest of extinguishing copyholds does not afford adequate ground for imposing upon one of the parties concerned an entirely new burden.

The Bill provides that where all manorial incidents have been extinguished the registers (that is, the record substituted for Court rolls) shall be transferred to the land registrar, but as the right of escheat is reserved to the lord it will be necessary for him to keep some record, and the requisition should be met by his giving to the land registrar a certified copy at the registrar's expense, or the land registrar giving a certified copy to the lord.

It is proposed that a tenant may have the option of paying a rent-charge instead of a capital sum where the compensation exceeds £2 unless otherwise agreed between the parties, but as the compensation to the steward is to be treated as part of such compensation and paid by the lord it is suggested as unreasonable to require the lord to pay the steward out of capital which would produce an annual sum as low as twenty pence. This limit, it is suggested, may be well increased to £25, representing a rent-charge of 20s. The steward's fees are, it would appear, still to be paid by the tenant; the steward's compensation might well be treated in the same way.

In order to secure immunity from the Board of Agriculture fees and stamp duty, notice by either party must be given within five years of the commencement of the Act. Where such notice has not been given, all manorial incidents are extinguished as if notice had been given by the lord to the tenant immediately after the expiration of the five years, and the Board is required on the application of either party to determine the compensation to be paid by the tenant, special provisions being made as to rents, fines, &c., which would have accrued, and as to the proportions in which the expenses are to be borne and other matters. It will therefore be necessary for the lord to give notice to every tenant on the rolls or register at the risk of having to pay the costs of enfranchisement on the one hand, or of losing his right to manorial incidents on the other hand. It is to be doubted whether the draftsman can have realised the great number of copyholds there are in existence, or the difficulty that occasionally arises in ascertaining the correct address for service of notice, or the greater difficulty that frequently occurs in agreeing on the identification of the copyhold property. It is obvious that the enfranchisement of some tens of thousands of copyholds, involving service of notices, identification, settlement of consideration money, &c., must involve an amount of work of which so great a portion would fall on the Board of Agriculture as to necessitate the employment of a considerable staff, whose principal duties would come to an abrupt termination. Nor does it appear reasonable to attempt to suppress in a few years a system of tenure which has been in existence for centuries. The term of five years should be extended to fifteen, if not to twenty.

In the schedule to the Bill it is proposed that where there are facilities for improvement the gross value of the land as determined for the purpose of the Finance (1909-10) Act, 1910, shall be the basis, but as the lord was not a party to the settlement of this value it does not appear reasonable that he, as a third party, should be bound by it.

The compensation for forfeitures is fixed at 15 per cent. of the annual value. The present scale provides that the compensation should not exceed 20 per cent.; this scale is stated to be for guidance only, and it is frequently exceeded in special cases, while in some manors less than 15 per cent. is accepted. It is suggested that this should be an elastic proposition, and not more than 20 per cent. unless it can be shown that a higher proportion has been obtained as average enfranchisement for the preceding twenty years.

Provision is made in Clause 40 in respect of the acquirement of the rights of either party in the minerals by the other party, and the decision of the Board in regard to such right shall be final. In such important matters as these differences may possibly give rise to, there should be some right of appeal, although to avoid expensive litigation being forced upon either party in regard to small sums a right of appeal may well be limited.

Renewable Leases.

The Bill also proposes to abolish perpetually renewable leaseholds by vesting the property in the person who at the commencement of the lease was entitled thereto for a term of 2,000 years. This includes renewable leases for lives. The amount of compensation to the lessor, his solicitor, or other agent may, it appears, be settled voluntarily, but any dispute shall be submitted to the Board, whose award shall be final. Regulations in respect of these matters may be made by the Board. The compensation is to be translated into periodical payments to be added to the rent reserved in the lease or such periodical payment may be commuted, and an endorsement on the lease is to be conclusive evidence of the matters stated. The compensation to the solicitor or other agent is to be paid by the lessor out of the additional rent or otherwise. Here, again, it seems hard that the lessor should be compelled to provide a capital sum out of an annual receipt. The lessee should be required at least to find this compensation money. And, further, there should be a right of appeal from the Board where the amount in dispute or an important question of principle justified it.

Southampton Town Hall.

SIR,—Our ancestors used to place gates at ends of streets at entrances of towns, but some (not all) of our twentieth century people prefer to have a gate as big as possible in the middle of a street to block the heavy traffic. There is no accounting for ideas, but I think that in some things certainly our ancestors were gifted with more commonsense. Ex. gr. At the end of our High Street there stood the Water Gate; it is supposed to have been built about 1396; it was wisely removed in 1806, as it was in the way. As to Holy Rood Church, also in High Street, its origin is lost in antiquity; the original church stood in High Street. But in 1318, the fabric having fallen into a ruinous condition, and being in the way, a wealthy burgess gave the ground to which it was removed in 1320, and where it now stands. These two facts are precedents for the removing of the Bargate, which is also in the way.

But some of our twentieth century people would wish to spend money in keeping up a gate that, apart from its inconvenience, is not really worth patching up (the north side is in a crumbling state; occasionally stones come from it, risking injuring people passing near it, as happened a year ago or so), instead of spending money on building a Town Hall, which is the real want of Southampton. Our local historian and antiquarian, Mr. Charles Cooksey (who, of course, loves his dear Bargate!), tells us that Southampton was the first British capital. Just think of the greatness historically of a town which can lay claim to be the first British capital. And yet Southampton has not a proper Town Hall. There is a splendid and central position for it, between the clock-tower and Bradbeer's large establishment; it is a model spot for a Town Hall. What a grand chance for a first-class architect to build a Town Hall with an imposing façade that would be an honour to the old British capital. There is a fine depth of land to make a Town Hall sufficiently ample for getting all our municipal offices under one roof, the space taken for the building, &c., meanwhile not really detracting practically from the open spaces for which Southampton is so justly renowned. Surely would not the people of this ancient town prefer to incur some expense for a grand Town Hall than to incur expense over a gate which is a nuisance and a block to the present-day traffic? Look at the magnificent Town Hall of Portsmouth; and we in our grand old historical town of Southampton have only a miserable old makeshift in High Street. I enclose my card.

A RESIDENT OF SOUTHAMPTON.

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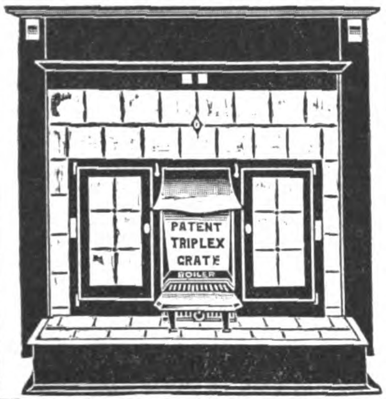

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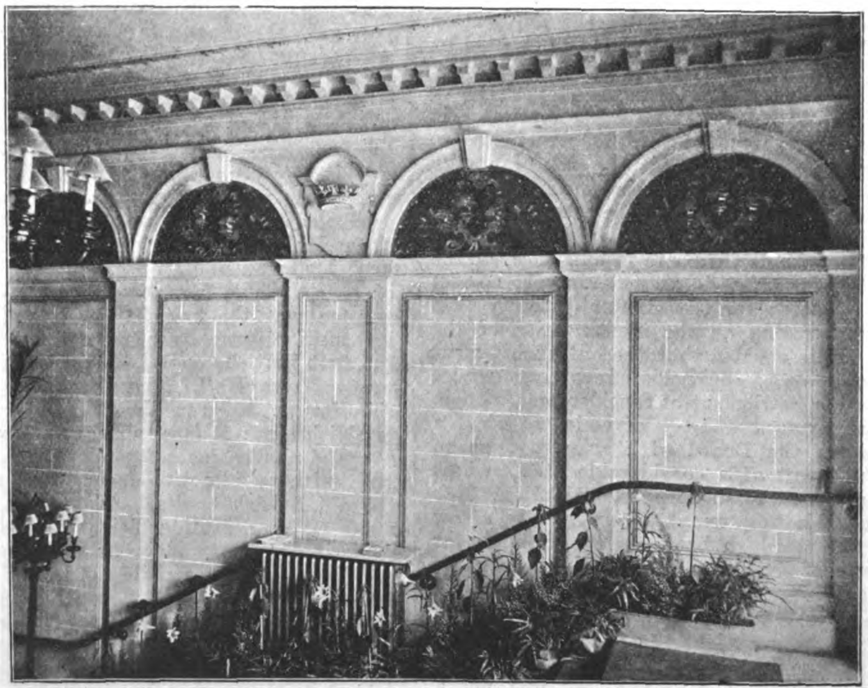

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THE ARCHITECT

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FORTHCOMING EVENTS.

Monday, April 20.

Royal Institute of British Architects: Paper, entitled "Professional Practice," by Mr. Max Clarke, F.R.I.B.A., at 8 P.M.

Institute of Sanitary Engineers: Paper, entitled "The Birmingham Water Works," by Mr. E. A. Lees, A.M.I.C.E., at 8 P.M.

Surveyors' Institution: Paper, entitled "Comments on the Land Inquiry Committee's (Urban) Conclusions," by Mr. D. Young, at 8 P.M.

Tuesday, April 21.

Nottingham and Derby Architectural Society: Annual Meeting and Election of Officers at 8 P.M.

Society of Architects: Thirtieth Annual Dinner, Hotel Cecil, 6.30 for 7 P.M.

Thursday, April 23.

Sheffield Society of Architects: Annual General Meeting at 7.30 P.M.

Concrete Institute: Paper, entitled "Sand and Coarse Material and Proportioning Concrete," by Mr. J. A. Davenport, M.Sc., &c., and Professor S. W. Perrott, M.I.C.E., &c., at 7.30 P.M.

REINFORCED CONCRETE.

WE are not yet in possession of sufficient accurate and reliable data to make the practice of reinforced concrete construction conformable with scientific fact and absolute law. The work, however, of such bodies as the Committee on Reinforced Concrete of the Institution of Civil Engineers, as does that of other investigators, adds to our knowledge, as may be seen in the second report [*] of that Committee, which has been recently published.

One of the most important objects of the Committee's inquiry was a scrutiny of the methods of calculation which might with safety be used in connection with the design of reinforced concrete work. The discussion of this subject involves, in the default of scientific fact, assumptions which can properly be made from data already known as to the physical properties of a material of extremely complex character, and as to its behaviour under the stresses which result from the loading imposed upon it in ordinary practice. The data upon which such calculations should be based must be reliable and applicable to an extensive range of conditions, and the Committee have, on several occasions, expressed the view, which they repeat in the present report, that the difficulty and expense of conducting experiments upon a scale commensurate with the engineering works to which such calculations have to apply, create an obstacle that has not yet been fully overcome.

It is much to be desired that the many private tests that are constantly being made by manufacturers and patentees, as well as by engineers and architects in charge of reinforced concrete constructions, should be co-ordinated. Time and money are wasted by re-duplication of experiments, and results are missed which might readily have been obtained for want of knowledge of what has already been done, and what it is desirable should be done in order to supply missing links in a chain of evidence. Our scientific knowledge of reinforced concrete might confidently be expected to gain immensely if all prospective experimenters would make their efforts under the guidance of some recognised central authority. It is rather a pity that there should be three committees at present in existence—that of the Institution of Civil Engineers, the so-called Joint Committee of the Royal Institute of British Architects, and the Reinforced Concrete Practice Standing Committee of the Concrete Institute. At least it may be hoped that these committees will work in unison; and it is of good omen for such attitude that the present report of the Institution of Civil Engineers adopts the notation for formulas suggested by the Concrete Institute and the conclusions arrived at by Mr. F. E. Wentworth-Shields and Professor J. D. Cormack, MM.Inst.C.E., that, subject to the qualifications and reservations indicated by them, the rules of calculation which were set forth in the second report of the Joint Committee of the Royal Institute of British Architects, 1911, may be, so far as definite and reliable information is at present available, applied with confidence by engineers.

The second report of the Civil Engineers' Committee consists, to a fuller extent than the first, or preliminary and interim report, indeed entirely, of a collection of separate reports by sub-committees and individuals on various matters, these being: "A," report on tests of plain and reinforced mortar and concrete slabs; "B," report on percolation and other tests made at the National Physical Laboratory; "C," memorandum on certain tests made by H.M. Office of Works; "D," report on tests of experimental reinforced concrete columns and beams; "E," note on a test of a reinforced concrete truss carried out at Singapore, 1913; "F," calculations for reinforced concrete; "G," summary of the Chicago Municipal Regulations for the use of reinforced concrete; "H," note on a review of the first summary of rules for the use of reinforced concrete in various countries; "I," report of a recent case of movement in a reinforced concrete floor; "J," report on works executed, which include wharves at Liverpool Docks; coaling-jetty at Southampton; quay-widening at Southampton Docks; reservoir at Bournemouth; corn-silos in Bermondsey; Royal Liver Friendly Society's offices at Liverpool; flour-mill at Swansea; roofing over canal at St. Martin, Paris; corbels over the Paris-Auteuil line; Clyde quay wharf at Wellington, N.Z.; retaining wall at Miramar; water-tower and tank, New Zealand; extension of jetty-head, Gladstone, Queensland; reinforced concrete service reservoirs in New South Wales; pile-armour and bridge cylinders in

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[*] *The Institution of Civil Engineers. 'Second Report of the Committee on Reinforced Concrete.* **(London: Published under the authority of the Council of the Institution, by William Clowes & Sons, Ltd. 2s. 6d. net.)**

New South Wales; injury to a packing-house by electrolysis; slab foundation for a machine-shop at Silvertown. There is also included in the report a bibliography of papers and abstracts referring to reinforced concrete which have appeared in volumes clxxxi-cxcii of the Minutes of Proceedings of the Institution of Civil Engineers.

The difficulties in the way of arriving at a scientific knowledge of the properties of reinforced concrete are well illustrated in a memorandum on the results contained in the report "A," contributed by Mr. C. S. Meik. Although the concrete in the whole of the reinforced slabs was the same both in proportions and materials, and great care was exercised in the manufacture of the slabs and test cubes, so as to have the mixture and conditions of manufacture the same throughout, whilst the whole of the cement came from the same works, and was made from selected clinker burnt in the old chamber kilns, there was nevertheless a great variation in the crushing strength of the cubes of concrete made of the same mixture and at the same time as the different slabs.

Thus the average crushing stress of the cubes made of the same concrete as one slab was 1,180 lb. per square inch, and that of the concrete in another slab was 3,245 lb. per square inch. Moreover, the concrete in the former case weighed 141 lb. per cubic foot, whilst that in the latter weighed 147 lb. per cubic foot. The experiments showed that, as a rule, an increase in the weight of the concrete was followed by an increase in the compressive strength, and that the strength of the slabs was influenced by the crushing strength of the concrete; but when this varies so extremely as in the above instances, it is obvious that we are very far indeed from a scientifically accurate formula.

The report on the injury to a reinforced concrete packing-house by electrolysis indicates what may become a serious source of danger to reinforced concrete construction. In this instance—a large packing-house, situated in Allentown, in the State of Pennsylvania, U.S.A.—several cylindrical columns, about 28 inches in diameter and 18 feet high, were cracked from top to bottom, whilst about 3,000 lineal feet of beams and girders showed cracks, and from some the whole lower surface of concrete had dropped off. This flaking off of the concrete was caused by the formation of a scale of iron oxide, ranging from $\frac{1}{16}$ to $\frac{1}{4}$ inch in thickness, on the rods and stirrups. Some of the stirrups were completely destroyed, and only oxide remained in their place. This mischief occurred some six or eight months only after the building was completed, and the predisposing conditions seem to have been dampness of buildings from the manufacturing processes carried on in the business and the escape of current from the private electric-lighting plant installed. Given, therefore, these conditions of damp atmosphere and escaping currents, it would appear that reinforced concrete is liable to speedy destruction.

"THE ARCHITECT" STUDENTS' SKETCHING AND MEASURING CLUB.

Ironwork is always an interesting study, partly because it admits of wide scope of invention in design and partly because there is a peculiar fascination about the craft of the smith. In making studies, however, one should first critically consider the design as an arrangement of forms and lines, with special reference to the material. Then the technique of the smithing should always be carefully noted and observation made as to whether the various contiguous pieces are joined by welds, pins, rivets, or bolts, whether foliage and other ornaments are forged hot, hammered cold, cast, or formed by the use of swage, die, or punch. In this particular our contributors' drawings do not evince as a whole sufficient attention.

Mr. Leslie C. Matthews has recognised that in ironwork German craftsmen of the past hold a high position, and has selected an example from the Victoria and Albert Museum, of date about 1650, which though clever has marks of decadence, both in design and workmanship, as compared with earlier work. Mr. Matthews has adopted a style of drawing in ink with colour and Chinese white on tinted paper, which is effective in the presentment of metal work.

"Chelt" has also gone to the same museum for his example, and has drawn both an English and a French gate, thereby transgressing our rule that only one subject was to be illustrated. The English example is an admirable piece of normal type, but is a single gate, not a pair. The French one has too much rococo feeling to be altogether satisfactory as a piece of smithery. The study requires further details, and especially particulars of the technique.

"Improver" has selected a pair of entrance gates from Warkworth, Northumberland, which are interesting as affording internal evidence of local authorship influenced by reminiscences of foreign work. The work is evidently the design of a craftsman whose knowledge and invention were inferior to his technique. The leafage is poor, unless "Improver" has slandered the original. Our contributor should study and note the operative technique of the craftsman.

"Shinio" has chosen for his subject a pair of gates from a Georgian house in Northgate Street, Chester, which are very defective in smithcraft and appear to us much more like modern work than eighteenth-century.

"Plato" sends a drawing of one of Tijou's famous gates at Hampton Court, which, spite of its restoration, might very well have received further study of details than our contributor has given.

"Ebor" has made drawings of the elaborate gates at Carshalton Park, and has included a commendable number of details; but he should shun the temptation to express antiquity by crazy drawing.

"Toga" has chosen an excellent piece of ironwork in gates at Jesmond Manor House, Newcastle-upon-Tyne, good both in design and execution, and has made a careful study.

We award prizes of half a guinea each to Mr. Leslie C. Matthews, "Plato," "Ebor," and "Toga."

NOTES AND COMMENTS.

The success of the Summer School of Town Planning held in the past two years has led to the decision that it shall, under the direction of a committee of which Mr. Raymond Unwin is the chairman and Professor F. M. Simpson the vice-chairman, again be held in 1914 in the new buildings of the University of London School of Architecture (University College) from August 1 to 15. The school session will last for one fortnight, and as practically the whole time will be given to the work of the school, it will be possible to provide as complete a series of lectures as is often given in a much longer course. It is intended that on each morning of the session there shall be given three lectures, or demonstrations on the site, and that in addition visits shall be arranged to various places having a special interest in connection with town planning or housing.

The syllabus of lectures is being arranged to provide as full a treatment of the technical aspects of the subject as is possible in the time available, whilst the courses are being so planned that half of every day is left free, on some days for the proposed excursions and visits, on others at the members' own disposal. There will be no evening lectures. A detailed syllabus of the lectures will be issued, and will be forwarded free of charge to all members of the Summer School, and to other persons on receipt of application.

The following subjects will be included: The practice of town planning; town planning in foreign countries and past times; the Town Planning Act, legal and other aspects of the subject; the engineering and surveying problems of town planning; the sociological aspects of the town planning movement.

A programme of excursions and visits will be carried out under the guidance of certain of the lecturers and others specially qualified to give information in connection with the places visited, which will be chosen to illustrate the principles of town planning.

The inclusive fee for the lectures and demonstrations at the Summer School is one and a half guineas. The cost of excursions and visits is not included in this charge. Particulars of these will be sent to all members in due course. It will be necessary to limit the number of members to be admitted on account of the outdoor demonstrations, &c. Those who wish to enrol their names should, therefore, do so without delay. Applications should be accompanied by a deposit of 10*s.* 6*d.*, or the whole fee should be forwarded to Mr. J. S. Rathbone, joint hon. secretary, Fitzalan House, Church End, Finchley, London, N.

In a letter to the *Morning Post* criticising the qualified appreciation by Mr. March Phillipps of the Middlesex Guildhall, Mr. Charles D. Carus-Wilson must be credited with a certain amount of plausibility when he says "a Gothic arch does not express a steel beam, and a Roman pediment does not express a flat roof. Clusters of Roman keystones are a falsehood when used as slabs to cover a steel beam, and crocketed arch mouldings express a structural vitality which is not in a modern steel-framed building. Good architecture depends not on the use of the one or the other form of ornament, and bad architecture can be found covered with either. Good architecture depends on suitability to purpose in a building, and the right expression outwardly of the forces which are being exerted inwardly in the different members of the structure." It is, however, a question, not very readily answered, how far the outward form should express the inner structure. It is an essential of steel construction that, for its preservation, it should be covered even if only by a coat of paint, and the more durable and effective the covering the less can it be made to express the precise form of that which it covers. We do not overlook the fact that Mr. Carus-Wilson asks for an "expression outwardly" of the *forces* exerted inwardly. Now the function of a beam is to carry a load over an opening. Both an arch and a lintel express this function, therefore, presumably, we should be right in clothing our steel girder with the form of either arch or lintel which would express the function of the girder. We are often told that we should go to nature to learn the principles of art. If we do so, we find that the skeletons of animals are very effectively hidden beneath the muscles, and these again beneath the skin and fur. Hence we might feel justified in concealing our steel frame under whatever arrangement of stone, brick, concrete, or plaster we may deem beautiful.

In moving the second reading of the Mall Approach Improvement Bill Mr. Wedgwood Benn (Lord of the Treasury) explained that the measure provided for the completion of the improvement of the approach to the Park through the Admiralty Arch. The improvement would be undertaken, in the first place, by the London County Council, with the assistance of the Westminster City Council and the First Commissioner of Works. It was estimated that the net expenditure would not exceed £115,000, and it would be shared equally by these authorities. The improvement was undertaken in order to provide a worthy approach to the Admiralty Arch; and to ensure that the buildings that were erected on the Charing Cross side were of suitable design, the Bill gave the First Commissioner of Works power to exercise a veto over the design of the façades of these buildings.

The discussion hinged chiefly upon the merits and demerits of the two insurance companies affected, with some arguments, pro and con, as to whether the improvement is a local or a national one; but the opportunity was taken to make a general, and as usual delightfully vague, attack upon modern architecture in general by Sir W. Essex, who said they had been rebuilding a large portion of official London, but the expenditure of vast sums in these schemes had resulted in a number of buildings of which those who appreciated good architecture had no reason to be proud. No doubt the insurance companies would have available the finest architectural skill in the country. But in the past, even in the respect of the Government themselves, the result had not been in the majority of cases buildings creditable to the nation. They ought, in the very centre of the Empire, to safeguard themselves against any further extension of the architectural abominations which were a source of heartache and sorrow to many. The powers taken under the Bill were not adequate for this purpose. Considering the large contributions being made from public and municipal funds, the Office of Works should exercise control in the selection of the architect. They should not only be able to exercise a veto as to the design, but should have power of initiation, and be able to indicate the general character of the façades of these buildings.

The disadvantages of the Scottish system of separate contracts for different trades are well illustrated by an action in the Glasgow Sheriff Court, in which the defendants sought to justify non-payment of the contract sum by reason of delay, which it was proved to the satisfaction of Sheriff Craigie was not the fault of plaintiffs but occurred through the state of work in the hands of other contractors. In the course of his judgment the Sheriff said he understood that there was not much direct authority on the subject of enforcing time contracts for the erection of buildings where the employer engaged separate contractors for different parts of the same building. Probably his information was correct that experience had shown to skilled architects that if it was desired to have a building erected by a certain date it was wise to have one contract by one contractor for the whole building.

The paper on "School Lighting," read by Elwin H. T. Nash, D.P.H., before a meeting of the School Medical Officers' Association on November 28 last, has now been published in pamphlet form at the price of one shilling by Messrs. J. & A. Churchill, and may be commended to the study of those who are purposing to enter for the L.C.C. open competition for two London schools, as the various theories and practice both of English, American, and Continental planners and critics are therein well set out and illustrated by numerous plans.

R.I.B.A. EXAMINATIONS.

The Board of Architectural Education of the Royal Institute of British Architects announce that the designs submitted by the following students who are qualifying for the Final Examination have been approved:—

***Subject XII. (a).—Design for a Lighthouse.*—Mr. I. Omar (Egypt).**

***Subject XIII. (a).—Design for a Fireplace.*—Messrs. W. J. Allcorn, W. Alison, G. Bennett, R. Bowes, P. Butt, G. E. Charlewood, W. T. Ching, G. A. Cosser, D. C. Derry, G. M. Eaton, E. Fincham, R. Frater, B. George, H. F. Gossling, J. D. Grant, R. B. Hall, G. L. Head, L. E. Henshall, J. D. Hossack, J. H. Jacob, A. G. Johnson, H. Z. Kassem, M. D. Koch, E. C. Lavender, R. M. Love, H. M. Luyken, J. R. McKay, R. H. Maddock, H. A. N. Medd, A. L. Mortimer, E. B. Musmann, A. H. Owen, W. F. Pennington, N. S. Robinson, C. Rowntree, T. A. Sanders, G. Shenstone, A. T. Spence, G. Allen, J. Barford, W. B. Binnie, C. J. Brooks, G. W. Callendar, C. C. Cheek, C. J. Clark, G. Davidson, R. A. Duncan, T. C. Evans, A. Forbes, J. S. Fyfe, H. T. Goodwin, R. G. Graham, H. V. Hague, A. B. Hamilton, M. Hendry, T. W. Herford, S. B. Howard, H. N. Jepson, W. O. Jones, A. D. Kellock, G. A. Langdell, G. S. Leadon, S. H. Loweth, J. Macgregor, A. L. Macmillan, A. E. Maxwell, R. S. Moore, D. G. Mowat, O. Newbold, C. L. Pace, A. W. Robertson, G. A. Rose, H. A. Ryan, L. H. Shattock, A. Silcock, G. P. Stainsby, A. E. Stott, H. J. Tebbutt, R. A. Threadgold, J. B. M. Walch, H. F. Walker, F. Williamson, J. A. C.**

Taylor, A. Thorpe, H. S. Triscott, D. W. Walker, H. M. Whitehead, and J. F. Wilson.

Subject XIII. (b).—Design for a Footbridge.—Messrs. W. A. C. Adams, H. Andrew, J. R. Armstrong, H. Bagenal, J. Carey, R. Cawkwell, H. E. Crossland, T. W. Dowsett, W. E. Foale, F. E. Gooder, C. Grellier, E. C. Lavender, J. B. Matthews, W. N. I. Moscrop, M. Robertson, G. P. Stainsby, W. E. W. Terrill, P. G. White, H. Wyatt, W. Alison, C. O. Ap-Gruffydd, C. H. Aslin, F. A. Barley, E. L. Carreras, H. L. Charles, J. Dickinson, J. C. Farrer, L. S. Ford, H. T. Goodwin, G. L. Head, A. A. Macpherson, J. Moore, J. Palmer, G. A. Rose, J. C. Swallow, I. C. P. Toothill, and C. H. Woodhouse.

BRISTOL SOCIETY OF ARCHITECTS.

The annual general meeting of the above Society was held at Clifton last week. The election of the Council and officers for the session 1914-15 resulted as follows: President, Mr. G. C. Awdry, F.R.I.B.A.; Vice-Presidents, Messrs. G. H. Oatley, F.R.I.B.A., and J. Foster Wood, F.R.I.B.A.; members of the Council, Messrs. G. C. Lawrence, A.R.I.B.A., M. A. Green, F.R.I.B.A., R. C. James, F.R.I.B.A., W. S. Skinner, F.R.I.B.A., T. H. Weston, F.R.I.B.A., and Sir Frank Wills, F.R.I.B.A.; Associate members of the Council, Messrs. A. B. Botterill, A.R.I.B.A., and B. Wakefield, Licentiate R.I.B.A.; Hon. Secretary, Mr. C. F. W. Dening, F.R.I.B.A.

A vote of thanks was proposed by Mr. Mowbray A. Green, and seconded by Mr. G. C. Awdry, to the retiring President, Mr. G. H. Oatley, which was carried with acclamation.

Mr. A. B. Botterill consented to act as Hon. Treasurer for another year. A vote of thanks was accorded to Mr. Botterill and Mr. Dening (Hon. Secretary) for the services they had rendered to the Society. It was provisionally agreed that the annual excursion should be to Frome, Mells, and Longleat.

A presentation of the prizes in the recent measured drawings competition took place, the successful students being Mr. H. E. Todd and Mr. W. L. Haile. During the evening a musical programme was rendered.

COMPETITION NEWS.

Chester.—The Corporation offer premiums of £50, £25, and £10 for the best designs of working-class houses. Mr. Patrick Abercrombie, M.A., of the Liverpool University School of Civic Design, has been appointed as assessor.

Dudley.—The Corporation have been in consultation with Mr. G. S. Nicol (of Messrs. Nicol & Nicol, architects, Birmingham) as to the scheme for providing a new Town Hall, municipal offices, and police buildings at a possible cost of £40,000. The Public Works Committee having considered Mr. Nicol's suggestions recommended that the whole scheme be proceeded with at once; that four selected architects of eminence in the profession be invited to send in designs; and the three unsuccessful ones be paid a fee of forty guineas each for expenses; that the Town Clerk and Mr. Nicol be instructed to wind up the formal conditions of competition; and the President of the R.I.B.A. be asked to nominate an assessor for a limited competition. The selected firms are Messrs. Crouch, Butler & Savage, Messrs. Cousins, Peacock & Bewlay, Messrs. Ewen, Harper & Bro., and Messrs. Nicol & Nicol, all of Birmingham.

Manchester.—In further reference to the competition for plans for cottages to be erected on the Corporation estate at Blackley, it will be seen from our advertisement columns that all designs must be submitted to the Sanitary Department not later than May 23.

Mill Hill.—Members and Licentiates of the Royal Institute of British Architects are warned that they must not take part in the Hale Grove Gardens School competition, because the conditions are not in accordance with the published regulations of the Royal Institute for architectural competitions.

Seaham Harbour.—A sub-committee of the Urban District Council is considering a recommendation to obtain designs for a new Council Chamber and offices to be erected adjoining the Londonderry Institute.

Sunderland.—The Town Council at their last meeting decided to invite, in open competition, designs for a boys' secondary school on the Barnes estate, and to offer premiums of £100, £50, and £25 for the first, second, and third designs selected. The inclusive cost of the buildings is not to exceed £45 per scholar to be accommodated, the accommodation being for 600 boys.

ILLUSTRATIONS.

CHURCH OF ST. JOHN THE EVANGELIST, EDINBURGH.

This prominent church in Edinburgh occupies a commanding site at the west end of Princes Street. The building has lately been greatly improved by rearrangements of the chancel and other parts. The late William Burn was the architect, and the work dates from 1816, by which period its style necessarily must be judged. The improvements and new works have been carried out by Messrs. Peddie & Forbes Smith, architects. The new floor of the choir is in black-and-white marble, and increased accommodation has been provided for the choir; new bench ends have been fitted on the choir stalls, and the whole of the chancel and sanctuary has been panelled in carved oak, into which several mural memorials have been adjusted. Among other minor improvements effected at this end of the church were the raising of Dean Ramsay's old pulpit and the placing over it of a sounding-board, the provision of new brass rails for the chancel, and the improvement of the base of the oak lectern. The terra-cotta walls of the nave above the level of the window sills have been painted white, the beautiful fan-coved lofty roof is now decorated in a scheme of white and gold; the dark varnish which covered the pews and panelling of the nave has been scraped off, revealing the soft natural grey tint of the oak, while the old gallery at the west end, which extended across the whole breadth of the church, has been replaced by a balcony with fine carved front, set within the width of the nave pillars over the entrance lobby, leaving the aisles free. The carving of the oak panelling in the chancel has its inspiration in the fine old carved stalls of pre-Reformation date—about 1520—still existing in the chapel of King's College, Old Aberdeen, erected by Bishop Elphinstone. The panels, while of varied design, show, when viewed in combination, a sufficiently uniform effect. The Scottish thistle is one of the chief recurring motifs in the finials of the canopies, and the cresting has quite a Franco-Scottish feeling. Over the choir stalls the panelling is carried in the form of parclose screens, with vaulted and enriched canopies. The bishop's chair, placed on the left side of the chancel, has a rich open tabernacle-work spirelet, and the prayer-desk has finely carved poppy ends, with the arms of the diocese in a traceried panel. The new carved oak chancel screen is an excellent specimen of the modern craftsmen's art. The design follows the main lines of the Gothic screens of East Anglia of the end of the fourteenth and beginning of the fifteenth centuries. The screen on plan is splayed out, somewhat in oriel form, projecting into the church some feet, and is divided into seven bays, the central opening being wider and more highly decorated than the others. The side bays are in two stages. The lower part, rising from a dark green marble base, is solid, with linenfold panels enriched with conventional carvings of the rose, the thistle, the vine, &c. The upper part is open, with tracery work in the head, surmounted with fleur-de-lys and carved crockets. The cove, of strong projection, has vaulted ribs and carved bosses at the intersections, in the centre of which is an angel figure bearing the arms of the Edinburgh diocese. The cove is crowned with a cornice of conventional vine and foliage and a parapet of open tracery, from which rise six shafts bearing angels with outspread wings, carrying scrolls and musical instruments. The main supports of the screen are carved with varied conventional foliage, in which the oak, the vine, and the thistle are conspicuous. A large oak cross is suspended over the screen. The altar and triptych reredos are in harmony with the rest of these rich fittings.

ST. MARY'S CHURCH, ELY.

This church is mostly of the Decorated period, and possesses a fine tower and spire, with an interesting piscina in the south transept, both of which are illustrated in the drawing by Mr. H. St. John Harrison, which we reproduce.

OXFORD COLLEGE SERIES, NO. 135.—MANSFIELD.

We commence a series of illustrations of Mansfield College with a view of the entrance tower and library.

REFERENCE LIBRARY, BATTERSEA POLYTECHNIC.

This addition to the work of the late Mr. E. W. Mountford, illustrated in *The Architect* last week, is wholly the design of Mr. F. Dare Clapham, F.R.I.B.A., who was in partnership with Mr. Mountford at the time of his death.

DIEPPE.

By J. Tavenor Perry.

(Concluded from last week.)

S. Jacques is one of the largest parish churches in Normandy, and consists of a nave with aisles, choir with aisles, and a semi-octagonal termination with radiating chapels, chapels on each side of both nave and choir; the transepts are aisleless and the crossing very lofty and lighted beneath the groining, with two windows on each face. The characteristic features of the nave and choir are shown by our sketches giving the view across each (figs. 5 and 6). The nave has generally an early appearance, and has been less affected by subsequent additions than the choir, while the great circular nave piers and the arcading of the triforium are singularly reminiscent of English taste, although erected during the French domination. The Flamboyant windows of the clerestory strike no discordant note, and are very graceful in their tracery. The nave chapels are separated from the

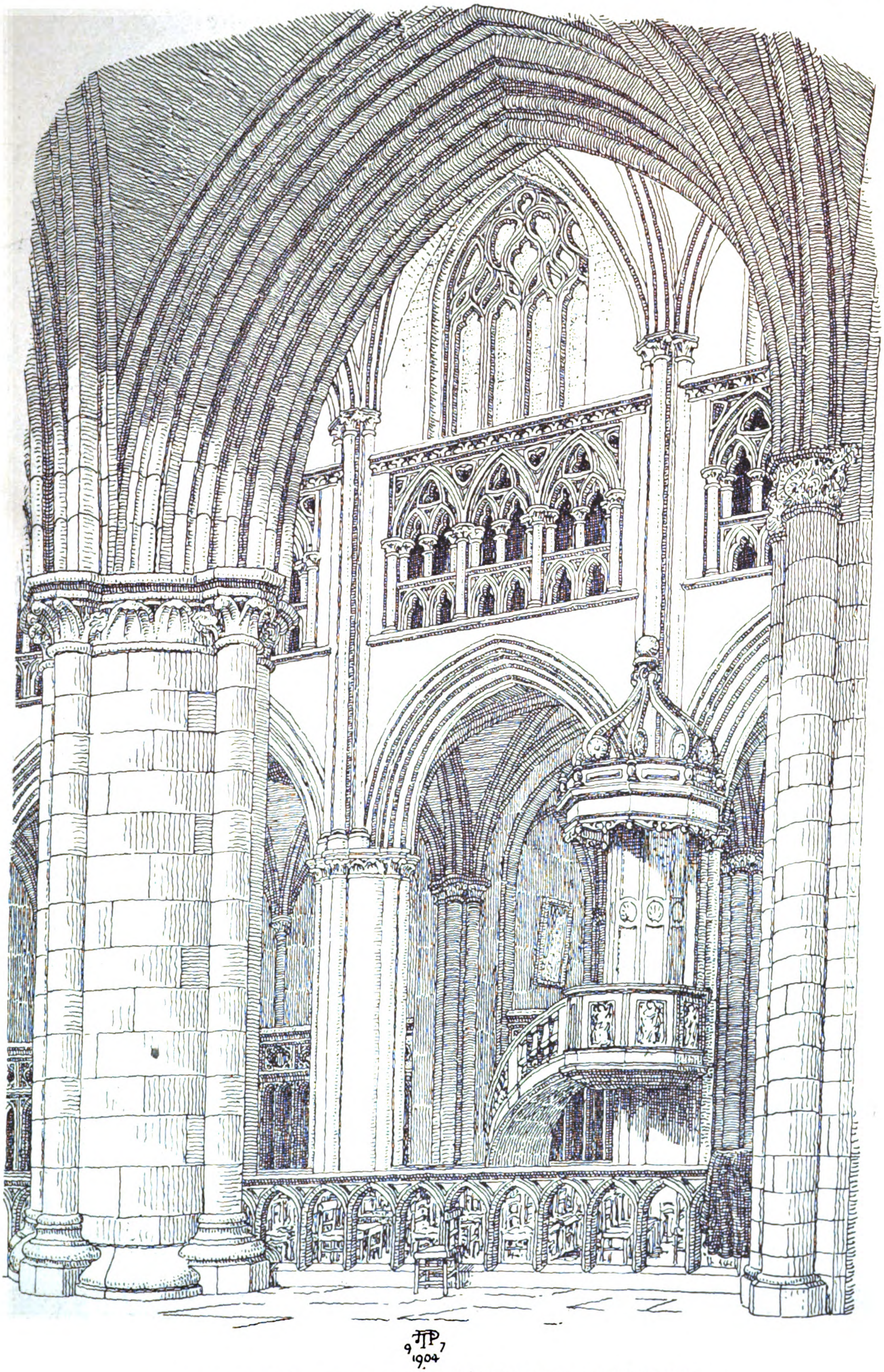

Fig. 5.—ST. JACQUES.—VIEW ACROSS NAVE LOOKING NORTH-WEST.

aisles by stone screens, and some of them retain their consecration crosses coloured in red and yellow. The chapel of S. Sepulchre, on the south of the nave, contains a modern restoration of one of those singular entombments, generally of late work, to be found in the neighbouring churches of Bures and Neufchatel-en-Bray and other places in North France, consisting of life-size figures of the Three Maries, Joseph of Arimathea, and others, all in the costume of the period, Joseph wearing his hat, and coloured in imitation of reality. As these figures are generally placed on the floor level, they are somewhat startling to come across unexpectedly in a dimly lighted corner.

Although the arcades of the choir are early, all the superstructure is late in date, and the change shows **immediately**

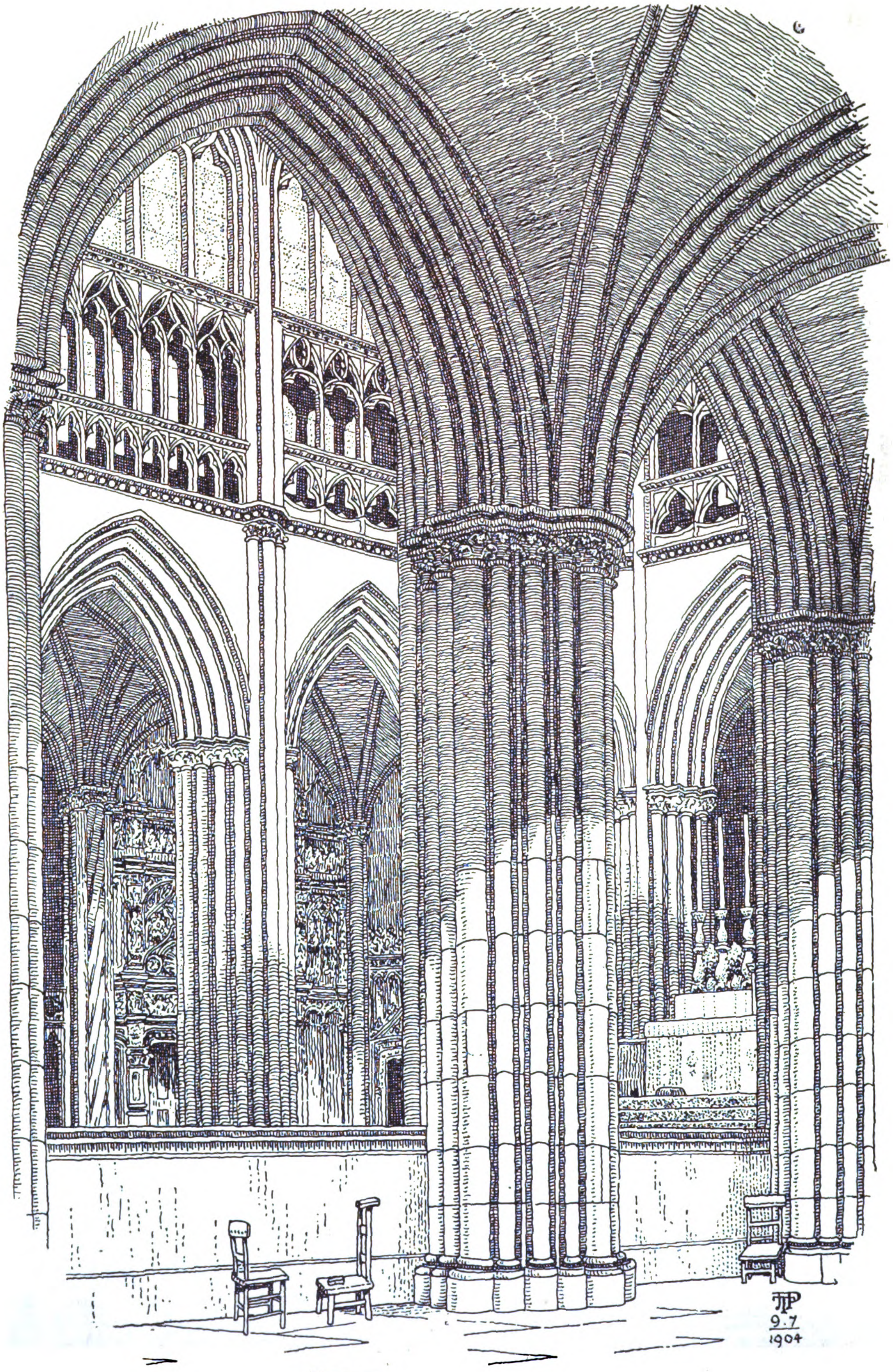

Fig. 6.—ST. JACQUES.—VIEW ACROSS CHOIR LOOKING NORTH-EAST.

above the main arches with the deep cornice, which runs all round, and is enriched with a carving of cockle shells, the symbol of S. James of Compostella, to whom the church is dedicated. The triforium is an open screenwork, forming practically the lower part of the clerestory, both being glazed on the same face of wall. To the five bays of the apse the arches are in single lights, with traceried heads of ungraceful design, and the parapet, which is composed of spherical triangles, does not range with the triforium of the rest of the choir, where the arches are of two lights and the parapet formed of trefoiled arches. The groining is, of its kind, very fine, some of the cross arches being cusped; and M. Leon Palustre, in his "L'Architecture de la Renaissance," gives a glowing and appreciative description of it. And it is probably the work of Hector Sohier, who was carrying out the work for Jean Angot. The screen work of a chapel northward of the choir, indicated in our sketch (fig. 6), now known as the Treasury, built also for Angot, is a remarkable example in this style of work. All the ancient woodwork of the choir, as well as many other treasures, were ruthlessly destroyed in the religious wars, and the present oak stalls were set up in 1855; but the pulpit remaining in the nave is a favourable example of eighteenth-century woodwork.

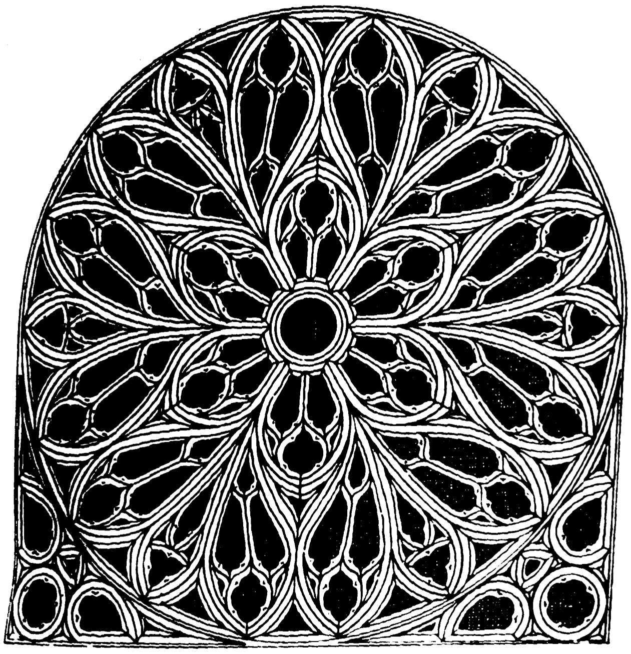

FIG. 7.—ST. JACQUES.—ROSE WINDOW OF WEST FRONT.

The west front is a very fine composition, having the great gable of the nave separated from the elevation of the aisles by large octagonal turrets, unfortunately wanting their spires, which receive the flying buttresses with their open work parapets forming a marked feature in the design. The upper part of the gable is filled by a very fine rose window of Flamboyant tracery, as shown in our sketch (fig. 7), and beneath it is a glazed arcade forming a gallery across the front. The lower part for the full height of the aisles is occupied by the principal portal having one order of the arch enriched by canopied figures and other figures in niches on the jambs and central pier; but these are all modern, and belong to a restoration of 1845. There are also simpler portals under crocketted canopies at the ends of the aisles. Southward of the main front stands a great square tower of fine design, in three stages, the lower two comparatively simple, and the top one rich in open tracery and arcading, while in contrast to this beautiful work there has been erected over the crossing, in place of some earlier and destroyed tower, a brick lantern covered with a dome and cupola above of very unpleasing outline. The richest of the external work is to be found about the eastern chapels, where a great deal of work was done in the time of Francis I., presumably from the designs of Hector Sohier, and the sketch we give of a pinnacle bearing the King's cipher (fig. 8) will give a better idea of the character of the work than will any description.

There was an ancient chapel at Le Pollet, the fisherman's quarter of Dieppe, which has recently been rebuilt in brick; but as a well-known writer speaks of it as "une des plus affreuses de la Normandie," further description is unnecessary.

Although the castle probably occupies the site of Charlemagne's fortress, and certainly a portion of the site of the old town which was gathered round S. Remy, the present structure only dates from 1433, when the people of the Pays de Caux, of which Dieppe is the centre, rose successfully against their English masters. It is of no value as a military work, but has been carefully maintained by the Government as a picturesque object dominating the modern town, as can be seen by our sketch (fig. 9). One of the old town gates also remains (fig. 10), which originally led to the quarter of the town known as The Port.

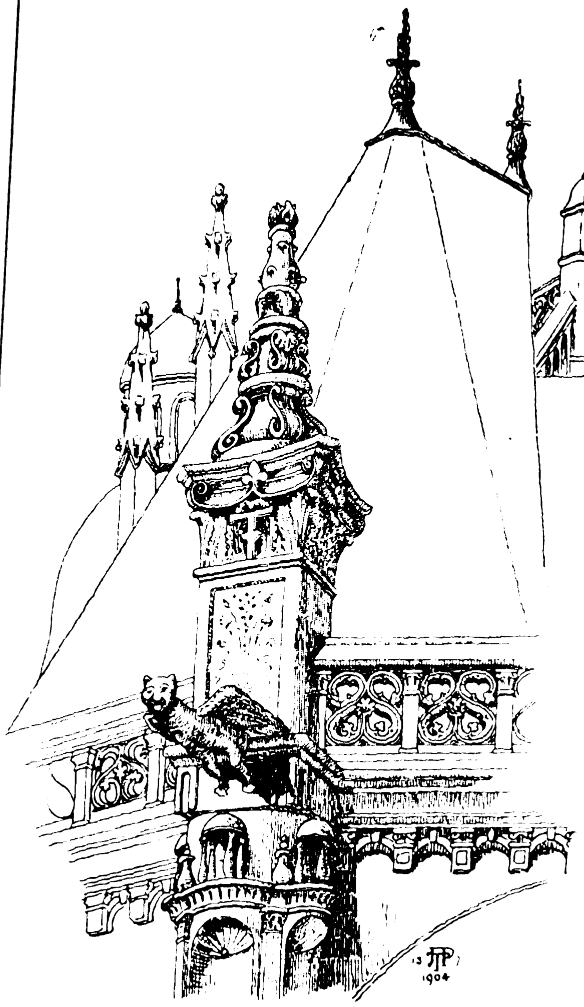

FIG. 8.—ST. JACQUES.—PINNACLE AT EAST END.

Great as was the damage inflicted on the ecclesiastical buildings of the town by the Huguenots during the Wars of the Religion, it was as nothing compared to the devastation wrought by foreign foes after Normandy had passed into French hands. No century passed over the unfortunate place without seeing an enemy within its gates, for even during the last it was occupied by the Germans, and its friendly occupation by Queen Elizabeth's troops was not even sullenly acquiesced in by the Dieppois. The fact that the sailors of Dieppe had once harried Southampton seemed never to have been forgotten on this side of the Channel; and the almost constant descents the English made upon the town culminated in 1694, when an English and Dutch fleet, returning from an unsuccessful attack on Brest, turned on the undefended place and, save the four buildings we have described, utterly destroyed it in a furious bombardment.

Among the buildings the loss of which we have to deplore was the Town House, built by Angot, the great benefactor to S. Jacques, in which he entertained Francis I. before when, emboldened by his wealth and position, he proceeded to levy war on the King of Portugal on his own account, and was made to suffer for his temerity. The whole history of his life is most interesting, but omits to state if he were the real ancestor of "La Fille de Madame Angot."

But Dieppe has attractions for others besides architects; its oysters are beyond praise, while only a gourmet can properly appreciate its soles dressed "à la Dieppoise" as served at the Royal.

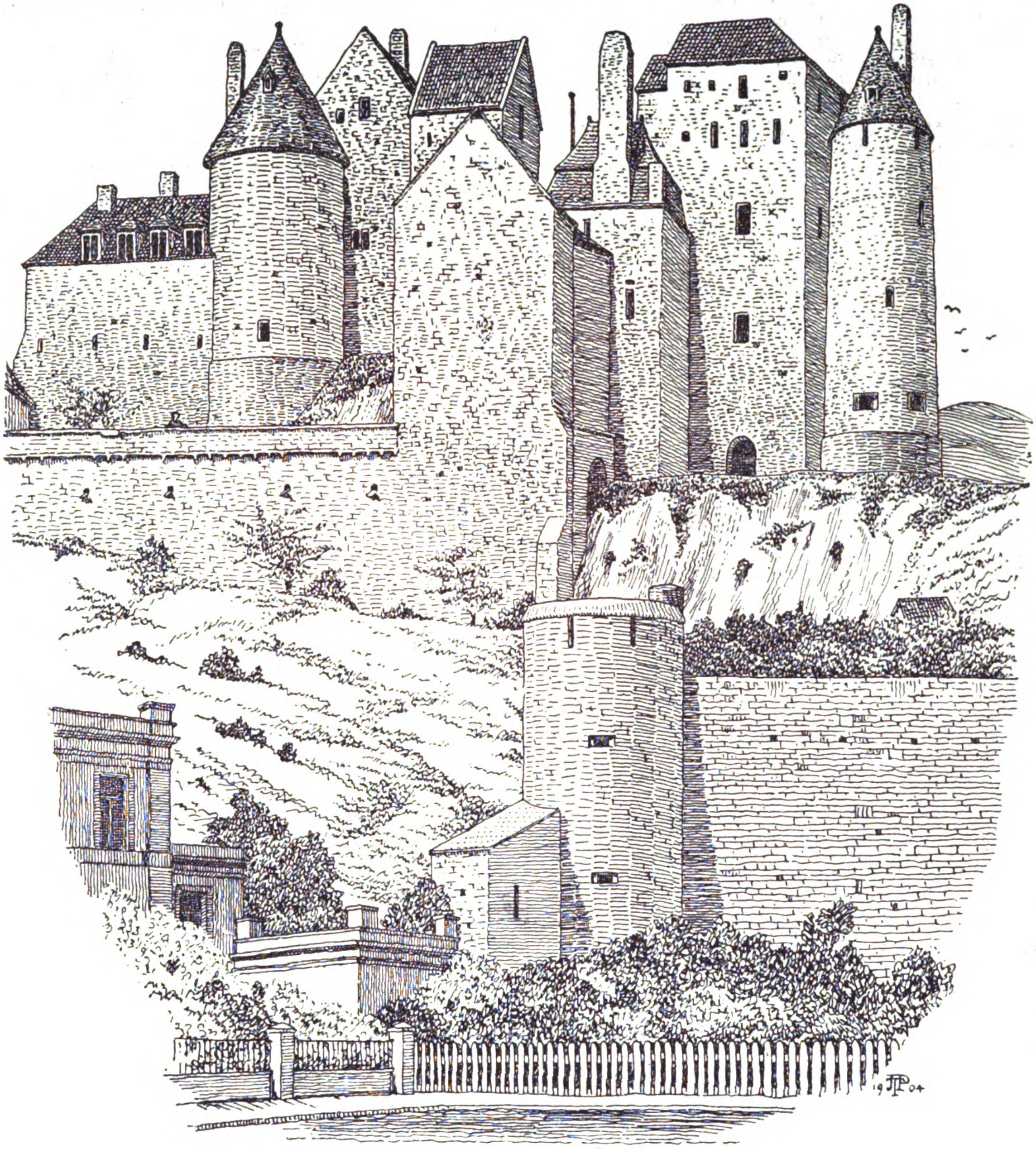

Fig. 9.—DIEPPE.—THE CASTLE FROM THE SEA FRONT.

THE SELECTION AND DEVELOPMENT OF BUILDING ESTATES.*

By Mr. J. Seagram Richardson.

(Concluded from last week.)

Character of Buildings.—It goes without saying that every detail of the scheme of development must be considered with the greatest care. The surveyor should make up his mind as to the character and value of the houses which are likely to be most in demand, and formulate his plans accordingly. Some of the land will probably be suitable for shops; one section will be better adapted than another for large houses; and one particular plot may possibly form a good site for a church. Where it is not feasible to build only detached or semi-detached houses, blocks of not more than four or six at the outside should be provided for, whilst the monotony may be broken and a pleasing effect obtained by setting back an occasional block at some little distance from the building line. At one time no plan of a building estate was considered complete without a prominent "hotel site"; but customs change, licences are difficult to obtain. If the estate is of sufficient importance it will be desirable to reserve open spaces, especially where, as often happens, a particular portion is from one cause or another unsuitable for building. Spaces sufficiently large for tennis, croquet, and bowls should be provided where possible, for they will not only add to the amenities of the estate, but should be capable of being placed on a profit-earning basis. Again, shrubberies may with advantage be formed at the junction of roads and at other suitable points, and as a rule the local authority will take over and maintain small enclosures of this description. One will naturally consider the aspect of the proposed houses when laying out new streets. A due south aspect is good, but it involves a due north aspect at the back with an entire absence of sunshine. In such cases "cant" or "splay" bay-windows are advised, and will be found excellent traps to catch sunbeams. There is a good deal to be said for east and west aspects, both front and back rooms being thus assured of a certain amount of sunshine. The contour of the land should be studied in order to ascertain the best lines for the roads, which should follow, as far as may be, the natural surface.

Gradients should be made easy, thus avoiding cuttings and embankments. These are costly to construct, and whilst the former in some respects are not altogether undesirable, for a house built above the road looks more imposing than one on the level, the latter involves "sunk" brickwork, largely increasing the cost of building and correspondingly reducing the value of the land. Where it can be done consistently, provision may be made for meeting the requirements of the future development of adjoining lands. As an example of an "up-to-date" estate, the Upper Woodcote Estate at Purley is unquestionably one of the most attractively laid out residential estates near

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*** Abstract of a Paper read on March 13 before the Auctioneers and Estate Agents' Institute.**

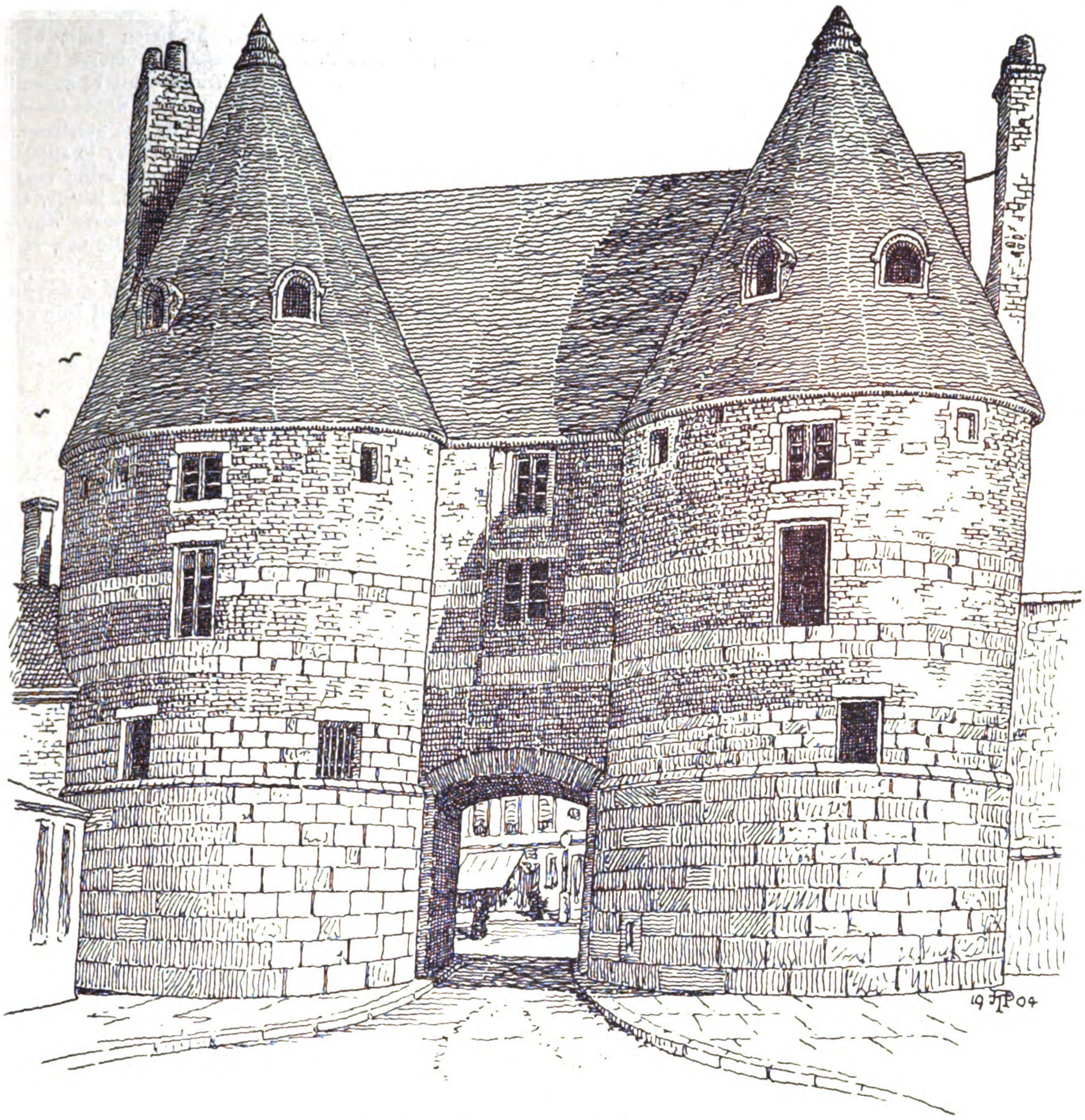

FIG. 10.--DIEPPE.—THE POST-GATE.

London. To some, a visit to this estate will be a "liberal education," for it possesses features not to be found elsewhere. It has been developed upon bold and original lines, the methods adopted including wide curved roads, beautifully made and fringed with borders of trees and banks of flowers. The division into plots is made at the formation of the estate, hedges being planted, borders made and front gardens laid out at the same time. "Rose Walk," with its banks of roses, and "Silver Lane," with its avenue of silver birches, are particularly happy inspirations, and the dignified houses which have been built in numbers on the estate are evidence that these departures from convention are appreciated. When practical development has been decided upon. the first step will be to prepare a plan drawn to a fairly large scale, say 44 feet to an inch. Accuracy must be secured at all costs, as the plan will be used for laying down the scheme of development as well as for the sub-division of the land into plots. The cost of constructing roads and sewers will be based upon measurements from this plan, which should show existing fences, ditches, hedges, buildings, footpaths, and adjoining buildings or streets which may have any bearing. The position and value of Ordnance bench marks should be indicated and the correct position of trees shown. Trees should, of course, be preserved where practicable, and the plan will enable one to decide which trees can be saved and which must be sacrificed. When the plan and scheme of development have been prepared and approved by the local authority, the lines of the road to be constructed should be pegged out upon the ground with stout stakes to mark the centre of the roadway. The extreme widths on either side of the road should be similarly marked. The levels for the longitudinal and transverse sections can now be taken. These should be plotted to the same scale as the plan—namely, horizontally 44 feet to an inch and vertically 11 feet to an inch. The levels should be commenced from one of the bench marks previously mentioned and continued along the centre line of the proposed roadway, readings being taken where an inequality appears in the surface of the ground, or, otherwise, at distances of about 100 feet. Cross sections at right angles to the centre line should also be taken at intervals, and the stakes at these points should be numbered, such numbers being noted in the level book to indicate sections left or right of the centre line. When considering the laying out of new roads, it will be well to remember that nothing is more dreary than long straight lines of streets. Their avoidance in town planning schemes, garden cities, and suburbs, and the substitution of curved roads is having an influence on the public taste. If intending purchasers have an opportunity of choosing between the two, it will be found that the modern curved roads will carry the day.

Short connecting roads or footpaths should be made at convenient intervals; indeed, these are required in many districts, and the introduction of a small square here and there will be a welcome departure from traditional lines. Some local authorities insist upon pathways affording back entrances, but where these serve a number of houses and the length is great they are by no means free from objections. Where only four or six houses are built in a block these objections largely disappear, and such entrances should be provided. In deciding upon the number of houses to the acre, regard must be had to the value of the land and its suitability for large or small residences. It is impossible to generalise, for although twelve houses per acre is regarded as the maximum by garden city enthusiasts, open spaces in the vicinity are often included, with the result that the number of houses standing on a given net acre of land may be twenty and possibly more.

The minimum width of roads is regulated by the by-laws. Roads of less width than forty feet or fifty feet are seldom allowed unless by-laws have been varied under a town planning scheme, it being not unusual for a local authority to consent to thirty feet secondary roads in consideration of sufficient land being given up to form a main road seventy feet or possibly eighty feet in width. Sometimes roads are constructed right up to the boundary of an estate, with the result that when such a road is taken over the adjoining owner has to pay half the cost whether he wishes to use the road or not.

Road Construction.—It is customary in the first instance to construct the sewers and make what are known as "builders' roads." Such roads are merely formed and covered with sufficient metal to permit of materials being carted to the various points, and although it is not unusual to kerb these roads in the ordinary way it is just as well not to incur the expense before building operations are completed. Roadways are subsequently formed in a manner calculated to bear the traffic to be carried over them. When taken over by the local authority the footpaths are usually paved with either York stone, patent stone, or tar paving. On many estates it is usual to make up the roads to the satisfaction of the local authorities on the completion of building operations and to indemnify purchasers against all road-making charges. When this is done the cost of road-making should be spread fairly over the houses, as otherwise those occupying corner positions will be unduly handicapped. An opportunity will be then afforded of planting trees, which should be done at a distance of from 30 to 50 feet, care being taken to select varieties suitable to the soil. Naturally the question of drainage must also be considered in conjunction with the scheme for roads. Should more than one existing sewer be available it should be ascertained whether it would be possible to drain the whole estate into it or whether it would be better or more economical to divide the estate into sections with a separate system of drainage for each. A portion of the estate may be below the level of the existing sewers, thus preventing natural drainage by gravitation, and in such cases resort may be had to a pit or sump with an automatic pump such as the one previously referred to, the total cost of which, it may be added, was about £900. The system of drainage to be adopted must be determined by the requirements of the by-laws of the particular locality. Where there is a sewage farm the dual system is adopted, the surface water being diverted to natural channels with the object of reducing the quantity of liquids to be dealt with at the farm. The size of the pipes used in sewers varies in accordance with the system adopted and the area to be drained. If the system is a combined one, larger pipes will, of course, have to be used than will be the case where it is a dual one. Pipes exceeding 18 inches in diameter are seldom needed, and should the area to be dealt with be such as to necessitate sewers of a greater capacity they will have to be constructed in brick, usually egg-shape in formation.

The question of restrictive covenants is of paramount importance. Such restrictions of user are usually intended to protect the mutual interests of vendors and purchasers, and when one has considered and decided upon the nature of the covenants to be imposed, the assistance of a solicitor should be sought to ensure their being framed effectively. Affirmative covenants are personal and limited, and it is only negative covenants which "run" with the land. Special covenants must be framed to meet special circumstances, but the more important of the usual covenants deal with the following:—

(1) *Fences.*—Privet and other hedges are being largely substituted for fences, but where it is proposed to erect fences the height and character of such fences should be provided for. Those in front of the building line should not be less than 3 feet or more than 4 feet high, whilst for division fences and back fences the height should not be less than 5 feet or more than 5 feet 6 inches.

(2) *Building Lines.*—Nothing should be erected nearer to the roads than the building line except fences, bay windows, porches, or other architectural projections, none of which should project more than 3 feet 6 inches in advance of any front or flank building line as the case may be, it being made clear that the shortest road frontage of each plot is the front and any other road frontages flanks. In some cases it may be desirable to provide that the front of any buildings shall not be set back from the building line.

(3) *Description of Buildings.*—These should be stated clearly. If it is intended that only detached or semi-detached houses shall be built, provision must be made accordingly, and it is not unusual to require that drawings showing the intended elevations shall be submitted to and approved by the vendor's surveyor, whose fee—usually a very modest one—should be paid by the purchaser.

(4) *Value of Buildings.*—It is necessary to stipulate for a minimum building value, such value being usually described as the first net cost in materials, labour, and construction only, calculated at the lowest current prices and exclusive of the cost of fences or outbuildings, such as a garage, stable or greenhouse.

(5) *Prohibited Trades, &c.*—Where it is desired to restrict buildings to private houses there will be no difficulty in providing for this; any school, hospital, church, chapel, mission room, asylum or public institution should be prohibited, and it will be well to provide also that no operative machinery, temporary buildings, and the like shall be fixed or placed upon any plot. The stipulations should in all cases prevent the use of plots for any shows, booths, swings or roundabouts, and no hut, shed, caravan or house on wheels should be permitted. No plot should be allowed to be used as an advertising station or for the storage of rubbish or waste material of any kind. Where it is thought that flats or houses planned for the accommodation of more than one family will be undesirable, the erection of such buildings should be prohibited.

(6) *Roads.*—The restrictions should provide that no portion of any plot shall be used as a road or way or part of a road or way from or to any adjoining land. Purchasers should also agree to keep and maintain the road or roads upon which their plots front until the same are taken over by the local authority.

(7) *Excavations.*—No excavations should be allowed except such as may be necessary for future buildings and drains; nor should any gravel, flints, chalk, sand or earth be removed therefrom without the written consent of the vendor.

(8) *Light and Air.*—It is not unusual to provide that purchasers shall not be entitled to any right of access of light or air to buildings to be erected on any plot which would restrict or interfere with the free user of any adjoining or neighbouring land for building purposes.

Too much care cannot be exercised in framing restrictions and stipulations, for although the vendor usually reserves the right to vary, waive or modify them he may often find it difficult to do so if a "building scheme" can be proved. This is an interesting point and will afford material for careful and profitable study. It will be sufficient for present purposes to state that purchasers are sometimes required to approve a model form of conveyance providing that the restrictions, stipulations and conditions shall not be deemed by reason of any inference, implication or otherwise to affect the remainder of the estate in question, and further providing that the vendor shall be at liberty to use, convey, demise or otherwise deal with the remainder of his estate either subject to restrictions similar to or different from those imposed or without any restrictions.

Finance.—If the land is ripe for building it will probably attract speculators and builders who will be willing either to buy outright or to take up building leases. Where, however, these conditions do not obtain, as a general rule, it will be found better for an owner either to build himself or by contract rather than enter into a building agreement with a speculative builder who may be without resources beyond perhaps a limited credit. The latter course often leads to troublesome "stop orders" in favour of merchants, notices of charges upon the building agreement which, of course, gives the builder a legal estate in the property, and, if the builder's credit comes to an end and the worst happens—as it frequently does—and possession has to be recovered, it may be found that his weakness is his strength. He can, and often does, make himself very disagreeable; he is not worth "powder and shot": legal difficulties ensue, with the result that the unfinished buildings may be left derelict for months, greatly to the detriment of the estate. When dealing with the speculative builder it is sometimes prudent to stretch a point in the matter of advances until the plastering is finished. The completion of the remaining work will then be a comparatively simple matter; but plasterers are not the easiest people in the world to get on with, and it is not pleasant to have to take over a job until one is out of their hands. When one has to finance a builder it may be found more satisfactory to adopt a schedule of advances than to agree a percentage—usually from £70 to £75 per cent. of value. The latter method is often a source of friction, and although a schedule cannot always be strictly adhered to, it forms a valuable criterion. In the construction of small and moderate sized houses costing, say, from £300 to £600 each, it may perhaps be roughly estimated that when roofed in and drains laid, one-half of the total cost has been incurred; but if the internal fittings and fixtures, *e.g.*, baths, stoves, and mantels, and the general finish are to be of a better description than usual, rather more than £50 per cent. should be kept in hand to provide for completion after roofing in. It may be useful to give the following schedule of advances amounting to £75 per cent. upon houses costing £400. It has been adopted on many occasions and has been found to be fair to the builder and a sufficient protection to the freeholder.

Schedule of Building Advances for Houses costing £400.

	£	*s.*	*d.*
1. First floor joists on	40	0	0
2. Ceiling joists and bays up	25	0	0
3. Roofs on, gutters up and painted	35	0	0
4. Drains in	15	0	0
5. Pointing and external rough casting	10	0	0
6. Floors laid, lathing and fixing for plastering ...	20	0	0
7. Pricking up, rendering, and floating	15	0	0
8. Plumbing and gas carcasing	15	0	0
9. Sashes and casements hung and glazed	10	0	0
10. Plastering finished	15	0	0
11. Bath, lavatory basin and sink fixed	7	10	0
12. Stoves, range, and chimney pieces	15	0	0
13. Doors and cupboards and all internal joinery complete for painting	25	0	0
14. Fences	15	0	0
15. Painting	17	10	0
16. Paperhanging	7	10	0
17. Drains finally passed	5	0	0
18. Locks and fastenings and all complete	7	10	0
Total advances in respect of each house ...	£300	0	0

A few notes are necessary on the methods of realisation. Here it is impossible to generalise, as so much depends upon the character and extent of the land to be disposed of. If there is a demand for small houses and the land is suitable for them an auction sale or sales will probably afford the readiest means of disposal, and it will be of assistance to give purchasers the option of paying by instalments spread over several years, say three or five years. An auction sale is perhaps the best way of advertising the land, and, incidentally, it sometimes saves trouble in the matter of title, conditions of sale, and restrictions. Where, however, it is intended that only large houses shall be built, one will probably have to rely upon private treaty sales, and in such cases it may be wise for the owner to build two or three houses himself in order to give the estate a start. As a general rule, it will be best to sell the freehold, but a lease has this advantage, namely, that it obviates the necessity on the part of the lessee to find the purchase money for the freehold, an option to purchase which during a fixed period is usually given. In all these cases it will be convenient to prepare and adopt model forms of conveyances and leases, to which purchasers and lessees should be required to subscribe.

LONDON BEFORE THE FIRE.*

By W. W. Jenkinson (Fellow).

Many good books have been written in past years, and up to our own time, describing London before the Great Fire; but I venture to think that new interest and some added information may be derived by treating the subject solely from the point of view of the literature of the period, or rather of the latter half of the sixteenth and the first half of the seventeenth century; or, with a little elasticity, the years lying between the Dissolution of the Monasteries and the Great Fire; perhaps the most vigorous as it is the most intellectually expansive era in the range of our national literature.

Material is abundant and obtainable by any seeker who is fairly lavish of his time. Chronicles, annals, memoirs, journals, diaries, autobiographies, and letters, State papers, city records, and church registers; essays, tracts, epigrams, and satires; sometimes even sermons; and, not least, the whole range of poetry and the drama, from Surrey to Marvell, from Sackville to Davenant: all these await the perusal or examination of the collector, who will, however, sometimes waste time over barren fig trees—fruitless, that is to say, for his purpose: Shakespeare, for example, except in the ten so-called historical plays, did not lay his scenes in London; and Massinger, out of nineteen plays extant, only did so once. Italy, France, or Greece, or some ideal Arcadia, were the places of action in the majority of the pre-Restoration dramas. Ben Jonson, however, is an exception. As he says in the Prologue to his "Alchemist":

> "Our scene is London, 'cause we would make known,
> No Countrey's mirth is better than our own";

and ten out of his seventeen plays have their scene in London.

For the London-born man the City always had something of enchantment.

> "The sight of London to my exiled eyes
> Is as Elysium to a new come soul."

So speaks a Londoner in Marlowe's "Edward II." Lyly, in his "Euphues," says, with something akin to rapture:—

"A place both for the beauties of buyldinge, infinite riches, varietie of all things; that excelleth all the Cities in the World: insomuch that it may be called the Storehouse and Marte of all Europe. What can there be in any place under the heavens that is not in this noble Citie eyther to be bought or borrowed."

The traveller from the south must needs approach the City by London Bridge unless he use the ferry. But before crossing the bridge he will diverge a few yards to the westward to obtain one of the finest prospects in Europe. From the bankside the river lies before him;

> "his either banks adorned with buildings fair,"

as Drayton has it, or to quote Browne's "Pastorals,"

> "The Queen of rivers fairest Thames
> That for her buildings other floods enflames
> With greatest envy."

"Royal towred Thame," was Milton's phrase in his early days at Cambridge. The traveller will not have passed the fine old church of St. Mary Overie (now the cathedral) without a glance. The bells are notable, and will have attracted him. He will note the tombs of John Gower, William of Wykeham, and Launcelot Andrewes. Let us hope that he will not find the beautiful Lady chapel (still preserved to us) in the state described by Anthony Munday in 1633: "Leased and let out by the Corporation, and this house of God made a bake-house."

Passing by "The Clink" prison and the Bishop of Winchester's house, the traveller will make his way to the playhouses by the river bank.

"The Globe" playhouse stood on part of the site now occupied by Barclay's brewery; a sculptured mural tablet now marks the spot approximately.

"To use and exercise the arte and faculty of playinge in Comedies, Tragedies, &c. . . . within theire now usual howse called the Globe within our County of Surrey."

So runs the licence of James I., granted in 1603 to William Shakespeare, R. Burbage, and others. "The Globe, the glory of the banke," as Ben Jonson proudly described it, was burnt down in 1613. The theatre was rebuilt the next year, and demolished in 1644.

"The Rose" was erected by Henslowe about 1590, whom, in 1607, we find negotiating for a new lease, and indignant at the idea of being asked to pay a rent of £20.

The Bear Gardens would not be omitted by a traveller determined to exploit London thoroughly, more especially if this advertisement should catch his eye:—

"Tomorrowe being Thursdaie shalbe seen at the Beargardin on the banckside a great mache plaid by the gamstirs of Essex who hath chalenged all comers whatsoever to plaie V dogges at the single beare for V pounds and also to wearie a bull dead at the stake and for your better content shall have plasant sport with the horse and ape and whiping of the blind beare."

The names "Rose Alley" and "Bear Gardens" still exist as reminiscences.

The traveller now retraces his steps to cross the bridge, entering by the arched gateway, and shuddering perhaps, if he be a novice, at the spiked heads above.

As a place of trade it was the first scene in the career of Lord Burleigh, who, according to Sir Robert Naunton, "came to be a rich man on London Bridge." "It is the manner of a continuall street," says Lyly, "well replenyshed with large and stately houses." The most noticeable of these was the beautiful "Nonsuch House," constructed entirely of timber, every portion of the building being, so we are told, fashioned in Holland, and only put together here. An early instance of the importation of ready-made joinery that does not seem to have been objected to by the workmen of the day. There was a chapel in the centre, as we may read in Stow: "A mason, being maister workeman of the bridge, builded from the foundation the large Chapple on that Bridge of his owne charges."

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* Abstract of a Paper read at the ordinary general meeting of the Surveyors' Institution on Monday, March 30.

The traveller will pass from the bridge up Fish Street to Eastcheap, on his way to the Tower, and will no doubt pause for some refreshment at "The Boar's Head," which stood about in the position now occupied by the statue of King William, as the street now bearing that name was not constructed. The inn has become famous from the Falstaff scenes in "Henry IV."

An ancient erection in Cornhill suggests a few notes on water supply. In the centre of the street stood a circular building used in early days as a prison for casual offenders, and (so writes Stow) "called the Tunne . . . because the same was builded somewhat in fashion of a Tunne standing on the one ende. . . . In the yeare 1401 the said prison house was made a Cesterne for sweet water conveyed by pipes of lead from Tiborne."

The Great Conduit was in Cheapside. It was supplied with "Sweet water conveyed by pipes of lead underground from Paddington." The water supply appeared to be abundant. Besides springs there were wells and pumps. The Pump at Aldgate still stands, and there are traces of the one (though out of use) attached to the Holy-well of S. Bridget (shortened to Bride) which gave a name to the palace of Bridewell adjacent. There was "a bosse of spring water continually running" at Billingsgate, and these bosses or reservoirs are elsewhere alluded to. In later times most of the springs and wells would be cut off by deep drainage and modern sewers: but what is probably the oldest erection in London above ground, viz., "The Roman Bath," in Strand Lane, is still supplied. But the citizens did not always escape water rate. William Lambarde writes at the close of Queen Elizabeth's reign:—

"As for the Conduite at Aldgate and Lothebury theare weare two Fifteenes levyed through the Cytie for the Buildinge of theim in the yeare 1545."

This tax of a fifteenth on personal property was not popular. The map by Ralph Agas shows a conduit in Aldermanbury in the middle of the street. Some few years ago the wooden pipes that served this were dug up.

The water of the Thames could hardly have been pure, considering that the river received such streams as the Fleet, which was used as a common sewer.

It was some thirty years after that London was supplied with pure water by a project which has lasted to the present day. The New River was designed and carried out by Sir Hugh Myddelton, but not without the financial assistance of King James, who thus became owner of one-half of the undertaking. It did not in the first instance meet with adequate appreciation, or afford much, if any, profit to the adventurer, as Myddelton was termed.

Before moving westward, Drapers' Hall reminds us of a case of high-handed dealing with property on the part of Thomas Cromwell in the reign of Henry VIII. Cromwell, having built a house in Throgmorton Street, afterwards the Drapers' Hall, and wanting additional garden, seized 22 feet of his neighbours' gardens, and added it to his own. John Stow's father was one of the sufferers. Stow writes:—

"My father had a garden there and an house standing close to his south pale, this house they lowsed from the ground and bare upon rowlers into my father's garden 22 foot, ere my father heard thereof. No warning was given him, nor any other answere when he spoke to the Surveyors of that worke, but that theire Mayster Sir Thomas commanded them so to doe."

We observe the absence of such trifling formalities as "notices to treat," followed by arbitration. As Stow moralises: "The sudden rising of some men causeth them to forget themselves."

West-cheape, or more familiarly "The Chepe," now lies before us. Apparently, to judge from the old plates, something wider than the present Cheapside.

Near the Great Conduit and on the north side of the street stood what was perhaps the most noticeable building in the Chepe, the hall of the Mercers' Company. An old picture-map shows a building Gothic in character, the upper storey, having seven large windows, being the hall; the lower part the old chapel of S. Thomas Acon, purchased by the company, with the hospital at the time of the Dissolution, and afterwards used as a free grammar school. The grammar school suggests a reference to a light and air case. In 1603 there was an "Order in Council prohibiting Arnold James from raising a building in Soper lane End, Cheapside, higher than the shed which stood there before, lest it should injure the lights of the Golden Key, belonging to the Mercers' Company, the rents of which are appropriated to a free grammar school.

The Goldsmiths' Company, who had a hall near by, was undoubtedly wealthy. "Faith to tell thee, Goldsmiths' Hall is damnable rich; and informers will have the devil and all." It was because Goldsmiths' Hall was the headquarters of the committee empowered to deal with the sequestration of estates that it was so unpopular.

On the south side of the Chepe stood a church of some note, dating from the time of the Conqueror, which, as Stow writes, being "The first in this Cittie builded on arches of stone was therefore called . . . Saint Marie de Arcubus or le Bow," and popularly known to Londoners as Bow Church. Some of the arches of the old Norman church form the crypt of the present one, built by Wren after the Fire. Traces may also be seen of an earlier Saxon church, and some relics of Roman material are visible. From this church "in the Arches" came the name of the Ecclesiastical "Court of Arches," which was there held.

In Bread Street was the famous "Mermaid Tavern," sacred to the memory of Shakespeare, Ben Jonson, and the circle of poets and wits who made it their haunt.

Some few references to building regulations and dealings with property will not be out of place. The London as we know it in the old maps of the sixteenth century had many open spaces, or enclosed land unbuilt on. Taking the map of 1563 used by Pennant, eastward beyond the wall we note "The Spitel Fyield," "Finsburie Fyeld," "The Moorfield," not as yet laid out and called "The Pleasaunt Walkes of Moorfield"; even Chancery Lane and Fetter Lane were bordered with fields; the Convent Garden occupied many acres; Drury Lane led only to "Drury House"; St. Giles' and St. Martin's churches were actually, and not only in name, "in the Fields," and Gray's Inn Lane led to open country and, by way of Battle Bridge, to the little deserted church of St. Pancras; "old Pancridge," as it got to be called when a new parish church was built elsewhere.

"The Mewes" occupied the site of Trafalgar Square, with open fields in the rear. Two lanes, "The Haymarket" and "Hedge Lane," led to Piccadilly, which was called "The waye to Redinge"; "The Oxford Road," further north, being called "The waye to Uxbridge." The riverside, from Blackfriars to Westminster, was adorned with the gardens of the great houses in the Strand.

Most of this land in course of time was built on, the great increase of population being the natural cause. But Queen Elizabeth, and her successors following on the same lines, endeavoured by legislation or royal enactment to arrest all increase of houses. Not only were new houses forbidden in London itself (except if rebuilt on old foundations), but, to quote Baker's *Chronicle* (the time described being the twenty-third year of Elizabeth): "Buildings likewise in the suburbs were restrained, inmates forbidden and expresse charge set forth, that no dwelling-house should be new built within three miles of any of the City gates, under pain of imprisonment and losse of the materialls."

The following from Howe's edition of Stow's *Annals* shows the state of things at the beginning of the reign of James I.:—

"The Cittie by this time was wonderously encreased in people and new buildings and albeit that in the Queen's time there were divers strict proclamations against inmates and encrease of new buildings, yet they tooke small effect, and in the second yeere of his Maiesties raigne Proclamation was made straightlie forbiding all encrease of new buildings within the Cittie of London and one mile thereof, expressly commanding all persons to build their forefronts and windows . . . either of brick or stone by reason all great and well grown woods were spent and much wasted, so as timber for shiping waxed scarce; but it tooke small effect: whereupon proclamation was made (1607) to the same purpose . . . some were censured in the Starre Chamber."

In 1624 there was an Order in Council to this effect:—

"Many persons have lately violated the Proclamation for reformation of buildings in and about London by rebuilding with timber or building on new foundations. . . . The Sheriffs ordered to demolish such buildings as may give the greatest example to terrify others. . . . The Buildings in Long Acre especially are to be pulled down."

But it is clear that regulations forbidding all new building could not have been rigidly enforced.

If on our way to the Tower we diverge a little, and find ourselves in Thames Street, we may be regaled with some of that "Billingsgate rhetoric" that Culpepper referred to. Indeed, Jonson classes Billingsgate with London Bridge and Paris Garden as one of the noisiest of places.

Passing All Hallows Barking, one of the finest of the ancient churches that survived the Fire, and still with us, the traveller will enter the precincts of the Tower. There is much to sadden a thoughtful visitor.

(To be concluded.)

THE ARBITRATION CLAUSE.[*]

By W. VALENTINE BALL, M.A., Barrister-at-Law.

Preliminary.

BEFORE presenting this paper to the Society I desire to make one or two preliminary observations with regard to the purpose I have in view. I do not wish to talk at large about arbitration, or to treat of its advantages or disadvantages. Suffice it to say that it has become and remains a necessary and important part of our legal procedure. Again, in dealing with the subject before me, I do not propose to treat the members as if they were listening to a new topic, discussed for the first time. I may assume that most of those who hear or read this paper know something of arbitration. Many will have acted as arbitrators, most will have been concerned with arbitration proceedings, while a large number are probably more familiar with certain aspects of the matter than I am. But I shall endeavour to refrain from hiding my meaning in the midst of a cloud of legal terms and phrases.

In dealing with arbitration from the point of view which is interesting to the architect, I hope to illustrate my points, not only by reference to cases reported in the *Law Reports*, but to certain other decisions. Some of these are not easily accessible. One has never before been published.

I shall not necessarily deal with arbitration in its every aspect. I only want to discuss with you certain practical points which appear to me to have given both lawyers and architects a good deal of difficulty during the past few years.

Clause in the R.I.B.A. Form.

I propose to consider the subject before me in relation to building contracts, and as most of those documents are in a common form it will be convenient to consider the arbitration clause which is to be found in that form—namely, Clause 32 of the form approved by the Royal Institute of British Architects. I have no doubt that it was carefully drafted, with the assistance, probably, of eminent counsel. Nevertheless, it is not altogether easy to understand, and various interesting questions arise with regard to it. Here is the exact text of the clause:—

> 32.—Provided always that in case any dispute or difference shall arise between the employer or the architect on his behalf and the contractor, either during the progress of the works or after the determination, abandonment, or breach of the contract,
> as to the construction of the contract, or
> as to any matter or thing arising thereunder (except as to the matters left to the sole discretion of the architect under Clauses 4, 9, 16, and 19, and the exercise by him under Clause 18 of the right to have any work opened up) or, as to the withholding by the architect of any certificate to which the contractor may claim to be entitled,
> then either party shall forthwith give to the other notice of such dispute or difference, and such dispute or difference shall be and is hereby referred to the arbitration and the final decision of A. B., or, in the event of his death or unwillingness or inability to act, of C. D., or, in the event of his death or unwillingness or inability to act, of a person to be appointed on the request of either party by the president for the time being of the Royal Institute of British Architects, and the award of such arbitrator shall be final and binding on the parties.
> Such reference, except on the question of certificate, shall not be opened until after the completion or alleged completion of the works, unless with the written consent of the employer or architect and the contractor.
> The arbitrator shall have power to open up, review, and revise any certificate, opinion, decision, requisition or notice, save in regard to the said matters expressly excepted above, and to determine all matters in dispute which shall be submitted to him, and of which notice shall have been given as aforesaid, in the same manner as if no such certificate, opinion, decision, requisition, or notice had been given. Upon every and any such reference the costs of and incidental to the reference and award respectively shall be in the discretion of the arbitrator, who may determine the amount thereof, or direct the same to be taxed as between solicitor and client, or as between party and party, and shall direct by whom, and to whom and in what manner the same shall be borne and paid.
> This submission shall be deemed to be a submission to arbitration within the meaning of the Arbitration Act, 1889.

Its general effect is as follows: It is that disputes which arise between builder and building owner are to be referred not to a court of justice, but to an arbitrator named in the contract. In other words, the parties agree to be bound in certain matters by the decision of a self-appointed tribunal. That arbitrator is to have full power to settle all matters in dispute subject to this, that certain questions which arise in the course of the works are left to the decision of the architect.

Matters upon which the Opinion of the Architect is Final.

Let me draw attention without delay to the questions which are for the architect to decide. In general, they are matters upon which an immediate decision is essential; immediate in the sense that unless they are decided in one way or another the works cannot proceed.

The following is a list of matters with regard to which the word of the architect is final. These are:—

(*a*) A decision of the architect with regard to discrepancies in the drawings, or between the drawings and the specification (Clause 4);

(*b*) The dismissal of any workman at the request of the architect (Clause 9).

(*c*) The removal of improper materials, and the removal and re-execution of work not in accordance with the drawings, specification, or instructions, provided the decision is given during the course of the works (Clause 16);

(*d*) The assignment and sub-letting of any portion of the works (Clause 19);

(*e*) A decision of the architect that part of the work shall be opened up for inspection (Clause 18).

Matters which may have to be Determined by the Arbitrator.

The following are examples of questions which may have to be determined by an arbitrator:—

(*a*) Whether a particular piece of work is wholly outside the contract, and, if so, what is to be paid for it (see Clause 1);

(*b*) Whether a particular piece of work is to be reasonably implied from the drawings, &c. (see Clause 4);

(*c*) A decision that errors in setting out shall be amended at the cost of the employer (see Clause 6);

(*d*) Whether a defect arising within a stated period from completion was due to materials, or workmanship not in accordance with drawings, specifications, or instructions (see Clause 17);

(*e*) Whether work opened up was or was not executed in accordance with drawings, specifications, or instructions (see Clause 18);

(*f*) Whether an objection made by the contractor to a specialist was or was not reasonable (see Clause 20);

(*g*) Whether the works were injured by frost or other inclemency of the weather (see Clause 21);

(*h*) Whether the works could reasonably have been completed by a certain date (see Clause 24);

(*i*) Whether or not the contractor was entitled to an extension of time (as provided by Clause 25);

(*j*) Whether a notice given by the architect to proceed with the works in accordance with Clause 26 was reasonably or properly given (see Clause 26);

(*k*) The arbitrator may be asked to review a decision of the architect as to the value of works executed which justify the grant of a certificate, and the refusal of the architect to grant a certificate (see Clause 30).

Whether Arbitrator can Decide a Point arising after Completion.

There is one point upon this clause which has not, so far as I know, been judicially considered; yet it goes to its very root. Look at the first few words of the clause. You will observe that the arbitrator only has jurisdiction "in case any dispute or difference shall arise between the employer or the architect on his behalf, and the contractor, either during the progress of the works or after the determination, abandonment, or breach of the contract." It is clear from this that if a dispute arises while the works are in progress, *e.g.* before the roof is on, the arbitrator has jurisdiction. It is also clear that his aid can be invoked in a case where the builder throws up the job, or the employer commits a breach of the contract by not allowing the builder to complete. The doubt remains: has the arbitrator jurisdiction after the job is finished in the ordinary way? You will notice that he has jurisdiction with respect to a dispute arising after the determination of the contract. Were this the only clause in the whole contract in which the word "determination" is used, I should take the view that it is equivalent to the word "end" or "completion." But if it means, or is intended to mean, "completion," nothing would have been easier than for the draughtsman to use the word "completion." That word "completion" is, in fact, used in the contract. See, for instance, Clause 17, which deals with defects, &c., appearing "within . . . months from the completion of the works." The fact is, however, that the word "determination," as used in this contract, is a term of art—that is to say, it is a word with a special meaning. Look, for instance, at Clause 31. That clause provides for what is to happen if the employer does not honour a certificate, or if the employer becomes bankrupt, and the trustee in bankruptcy does not satisfy the contractor that he can carry out the contract. In these cases, the contractor may determine the contract by notice in writing to the architect, and recover from the employer payment for all work executed and for any loss he may sustain upon any plant or material supplied or purchased or prepared for the purposes of the contract. "Determination" of the contract is, therefore, a different thing from "completion," and I venture to express the opinion that after final completion of works the assistance of the arbitrator appointed under the contract can no longer be invoked. For instance, suppose a defect appears after completion—such, for instance, as subsidence of a wall or the dry rot of joists on the ground floor. The employer may complain that these defects were due to the fault of the builder, but if he wants to obtain redress he must do so by action at law. In this connection, it should be borne in mind that the final certificate of the architect is not conclusive as to the sufficiency of any work or materials to which it relates so as necessarily to relieve the contractor from liability.

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[*] A Paper read before the Society of Architects on April 16.

It will be noticed that the reference is not to be opened until after the completion or alleged completion of the works, unless with the written consent of the parties. It is necessary to bear in mind the distinction between a reference itself and the cause of the reference, or the subject-matter of the dispute. The actual hearing of the arbitration is not to take place until after completion, but (as I have already indicated) the cause of the dispute must have arisen before that time.

It will be noticed that the arbitrator has power to review practically any decision or certificate of the architect. Thus it comes about that an architect may at some time or other be called upon to support his own certificate in the witness box. In these circumstances, the propriety of his seeing that his certificate can be fully supported on the ground of fairness will be obvious.

Damages for Delay when Time has been Extended.

There is a very important question arising on the Institute form to which I would like to refer. The architect has power to extend the time for completion in certain cases. Thus if delay is caused by a strike or bad weather, or extras, or in consequence of the contractor not having received in due time necessary instructions from the architect, the architect must make a fair and reasonable extension of time for completion in respect thereof. Mere extension of time, however, will not always be sufficient for the contractor. Delay may have the effect to throw the work over into the winter months, or it may otherwise increase cost by rendering it necessary for building operations to be carried out at a time when labour is scarce and expensive. May the employer, in such circumstances, claim damages and seek to have the amount determined by arbitration?

This very question arose in a recent case, which is not reported, but which came under my notice. The name of the case is Trollope & Sons and Colls & Sons, Ltd., *v.* W. M. G. Singer, and it was heard by Mr. Justice Channell, on December 1, 1913. The material facts were that owing to delay in giving orders for works, the clerk of the works was kept idle, and the builder sustained other damage. He sought to recover this in arbitration proceedings, when the employer took the point that there was no claim.

Mr. Justice Channell said (according to a copy of the shorthand note of his judgment):—

"I have only to deal with certain matters which are set out in the award for the opinion of the Court. If he has included matters outside his jurisdiction it is for the divisional Court and not for me to take them into account. In substance an award in the form of a special case is equivalent to a request by the arbitrator to inform his mind upon certain points. I have to deal with the contentions put forward in paragraphs 18, 19, 20, and 21."

Paragraph 18 is as follows [his Lordship read this paragraph and continued]:—

"It is contended that the power to extend the time which is given in certain events by clause 25 has effect to preclude a claim for damages if there is an extension of time. In other words, it is urged that an extension of time is to be deemed to satisfy all damage. Now, I cannot think that is what it means. The clause specifies a number of events on the happening of which the architect is empowered to extend; indeed, he is not only empowered, but the clause says he shall, in those events, make a fair and reasonable extension of time for completion in respect thereof. I have to consider what they are. They fall into three categories. The first two are *force majeure* and exceptionally inclement weather. In respect of these the contractors might (unless they were specially provided for in the contract) say: 'It really is not my fault that I have not completed: the weather was bad.' He could make a grievance, but if he has contracted to do the work within a particular time the risk would be his according to our law. Although in that case he might ask for an extension, he would not be entitled to it. Unless the contract contains some such clause as 25, which provides for *force majeure*, the contractor would have to take the risk. The clause then goes on to a different class of thing, 'by reason of authorised extras or additions.' Authorised extras and additions are, of course, extras authorised and contemplated by the contract. They do not amount to a breach of contract. It is no breach of contract by an employer to order something extra, and as a rule the contract shows that it is contemplated that there shall be extras, and the contract even provides a way of dealing with them and a way of ascertaining them. Nevertheless, an extra is a thing which, if done, and if so done as to make it impracticable to complete the work in the contract time, prevents the contractor being bound to complete within that time, and it is a matter which it is obviously reasonable to provide for by an extension of time."

"In Jones *v.* St. John's College, L.R. 6 Q.B., 115, the strict rights of the employer were preserved to him in respect of non-completion in the extended time. Then there is a third event or series of events in which this clause comes into operation. That is a breach or breaches of contract by the employer. I do not distinguish between a breach by him and by his agent. If such breaches are committed, and if they have the consequence of preventing the contractor completing the contract work in the contract time, they do not exactly give him an extension, but they free him from the consequences of non-completion. They free him from penalties; and in that case there is a condition of things which it is desirable to provide for by giving the architect power to extend the time. It follows that there are three classes of cases in which it is desirable to give the architect power to extend the time. Why is that a reason to deprive the contractor of his remedy in damages? I can see no reason whatever for doing it. There is ample reason for the clause, but there are no words in it which deprive the contractor of his right to damages. When time is extended, that affects the contractor not merely in the time he has to take in order to complete, but it also affects him pecuniarily in the way of damages. Why the employer should not pay damages I cannot see. This is a simple case where, by reason of the delay in giving orders to go on with the work at some particular place, certain work was left idle on the place, and the clerk of the works or somebody on the spot who had to be paid was idle. An extension of time will prevent the contractor being liable for delay, but it will not put back into his pocket the damage which he has sustained by reason of having the men there and paying them. It seems to me he has a right to have those damages, and I must, therefore, decide against the employer."

I have given that extract from this judgment at length, because it is not recorded elsewhere, and may be of value to those members of the Society who ever have to construe Clause 25. The case of Bush *v.* Whitehaven Trustees (1888), 2 H.B.C., 118, may also be referred to in this connection.

(To be concluded.)

ART IN LONDON.

The Summer Exhibition of the Royal Society of Painters in Water Colours.

The one hundred and sixty-second exhibition of this Society will prove as pleasant in retrospect as in inspect; as for prospect, it is altogether an error, and should form no item in the panoply of an art critic's armour. And this is particularly true of picture shows, for, though the calibre of certain artist-members is known and the merit of their work may be predicated, yet it is uncertain to the approaching visitor whether or not such artists may chance to be exhibitors. Thus we are left in the throes of uncertainty, and an unknown quantity (or, rather, quality) closes our horizon, despite our previous experiences of this Society's work.

When, therefore, upon entering the gallery in Pall Mall East we find an exhibition so surpassingly good, we feel that there is still something for which to be thankful, in spite of the revelries and devilries in Art to which we are becoming accustomed, though not reconciled. The "tone" in the present instance is so good and sustained. It is to be supposed that some of the works are not to our liking, but they are surprisingly few.

For example, we are not attracted by the President's two exhibits, though "Seedling Delphiniums" commands attention by reason of the self-insistent colour used by Mr. Alfred Parsons. The Vice-President, Mr. Robert Little, contributes four paintings, of which "The Twinkle of Portree" deserves special notice for its rendering of a sunsetting sky. Of Mr. R. Thorne-Waite's art, we can refer here to three examples only; "At the Lock Gates" and "View on the South Coast—Arundel" show breadth, atmosphere, and sense of colour, whilst "The Shepherd's Meet, Seaford," is an excellent work, portraying the Downs most sympathetically. Mr. R. W. Allan has a bright, clear touch, and though not divinely inspired, his productions are usually interesting, such as "End of the Fishing Season," "In Cairo," "Eyemouth," and "A Japanese Garden."

If at no time hitherto have we been amongst the worshippers of Mr. J. S. Sargent, we see no reason to fall on our knees before his present contributions; frankly, we regard it as an insult to offer to the public gaze such an unfinished sketch as "In a Spanish Garden"—or, if it be supposed to be finished, then Heaven help the foreground lady. Nor does Mr. Lamorna Birch please us better now than on previous occasions; there is a crudity of colour, a coarseness of technique, a stencil-like application of the brush, with which we could willingly dispense; "The Rocks of Tregiffoan," however, is a work where colour-massing is attempted, and this is peculiarly to the advantage of landscape art.

Mr. Albert Goodwin's work is always good and penetrated by his spirit; the most "compelling" is "Judas Iscariot," showing the traitor prone on the ground at the foot of the vacant Cross, which stands in bleak desolation with its two attendant Crosses, silent symbols of man and superman. "St. Michael's Mount" meets with two exponents in this exhibition, but the credit lies with Mr. Goodwin, as contrasted with Mr. W. M. Hale, who has, however, worthy work in "At Kinlochewe—Loch Maree," which is full of the rhythm of Art.

We believe that Mr. Charles Sims is an artist beloved by the public; but is not this same public a flock of sheep? Certainly neither "The Trophy" nor "Spring" holds any appeal to us; at least one of the supporting Graces in the former is out of drawing, and the maiden typifying "Spring" has anaconda-like locks and is vested (literally *vested*) in a motley shift.

Mr. Cuthbert Rigby is very successful in "Gathering Bluebells," "On Thurstaston Common," and "The Quarry Road." Sir Ernest Waterlow has once again been remarkably busy; of his ten works we will specify three—"In Early Summer," "An Old Sussex Church," and "A Yorkshire Lane," the last being particularly noteworthy. We prefer Mr. Barratt's Venetian studies to Mr. Sargent's "Piazzetta"; regard, for example, "Sunset" (51 and 58). The latter is a striking study, and is worthy of close attention.

Mr. Arthur Hopkins is another exhibitor who has aided manfully in the production of a public treat—"Atlantic Shores," "Willapark, Tintagel," "Deianeira," and "A Siren" form a worthy group, though these pictures do not by any means exhaust Mr. Hopkins' display. The first and last named are possibly the best, though "Deianeira" leaves little, if anything, to be desired. Mr. T. M. Rooke has a series of his interesting and well-portrayed studies of buildings. But just after seeing the earliest-hung of Mr. Rooke's pictures we are confronted by the first of Mr. Henry Henshall's, an artist who has endeared himself to us by his virile technique and healthy sentimentality; he contributes a dozen exhibits, none unworthy and most of them highly worthy, the very best being "The Widow" with the Dutch feeling that we have before noticed in his Art, and with a touch of pathos, entirely free from anything meretricious; "The Boy and the Beggar" also merits special mention.

Sir H. H. Johnston's work is too diagrammatic in technique to be satisfactory artistically, but it evinces a competent knowledge of the objects of his study. Mrs. Laura Knight has a clever picture in "Boys Swimming," and Mr. W. T. Wood is again to the fore with his mystery-inviting blues, though "Regent Street" somehow misses the mark aimed at; "A Fading Day" is successful, and is reminiscent of Edmund Dulac. Mrs. Allingham, Miss Katharine Turner, Messrs. Walter Crane, Charles Gregory, J. J. Hardwick, and others help to maintain the interest of the exhibition, and whilst we have omitted notice herein of much that is good and of some that is poor, enough has been written to vindicate the claims of the show to the suffrages of the public.

VICTORIA AND ALBERT MUSEUM.

The Board of Education announce that a loan exhibition of Indian paintings has been arranged in the Indian Section of the Victoria and Albert Museum (Lower Gallery, Room 4).

The exhibition consists of more than two hundred characteristic works of the New Calcutta School, generously lent by the Indian Society of Oriental Art, Calcutta, together with examples by artists of the same school lent by Mr. Havell and Dr. Coomaraswamy. In addition, her Majesty Queen Mary has been graciously pleased to lend an important example of the work of Abanindro Nath Tagore, for some time Principal of the Calcutta School of Art and one of the leaders in the movement. It depicts Tissarakshita, Queen to King Asoka, contemplating the destruction of his favourite Bodhi tree. All the paintings lent by the Indian Society of Calcutta were recently shown in Paris at the twenty-second Exhibition of the Société des Peintres Orientalistes Français.

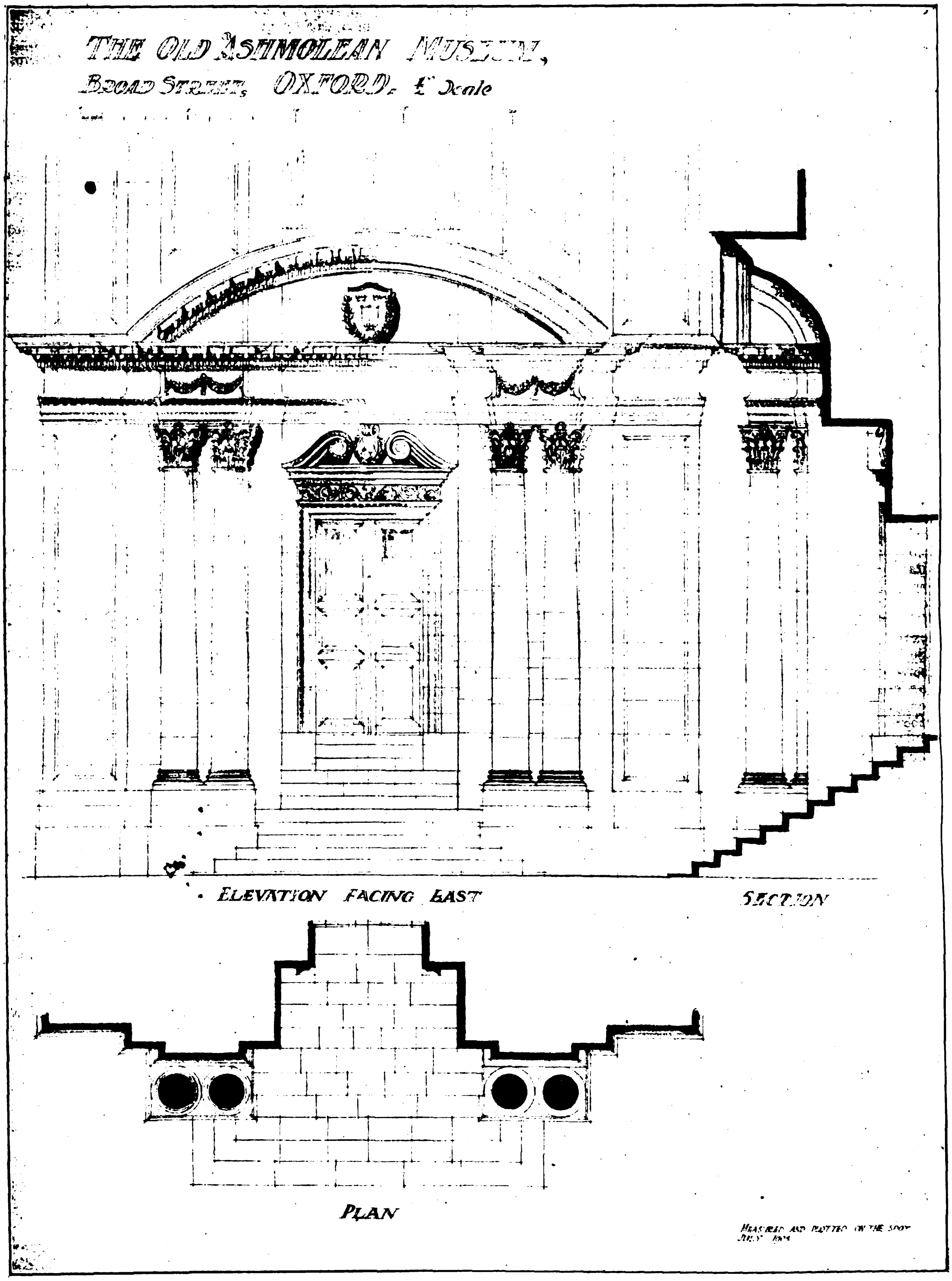
The New Calcutta School represents the development which has taken place in Indian Art since 1896, when Mr. E. B. Havell reorganised the instruction given in the Calcutta School of Art on Indian lines, and brought together a representative collection of examples of Indian painting, sculpture, and architecture for the purpose.

In addition to works by Mr. Tagore, there are also included in the exhibition paintings by thirteen of his pupils, Nanda Lal Bose, the late S. N. Ganguly, and others, some of whom follow the traditional technique of Indian painters more closely than the rest. Two of them—Messrs. Ishwara Prasad and K. Venkatappa—are descended from families of hereditary court painters. Mr. Prasad, whose family were court painters to the Nawabs of Murshidabad, Bengal, in the eighteenth century, was discovered by Mr. Havell working as a designer in Manchester piece goods for a European firm in Calcutta. He is now a teacher in the Calcutta School of Art. Mr. Gogonendra Nath Tagore, a very gifted amateur, who contributes to the exhibition a series of illustrations of the life of Chaitanya and impressionist studies in the streets of Calcutta, has worked entirely under the tuition of Japanese artists.

The exhibition will remain open until the end of May.

Mr. W. L. Carruthers, F.R.I.B.A., Inverness, who died last week, was a leading architect in the North of Scotland. He designed and supervised the erection of such residences as Loch Rosque and Kyllachy, and he carried out restoration and extension works on Altyre, Dalcross Castle, Moy Hall, Achnagairn, Belladrum House, Allangrange, and other well-known Highland residences. He also designed many important commercial premises. The cricket pavilion at Fettes College was designed by Mr. Carruthers, who was an old Fettes boy. Mr. Carruthers was fifty-four years of age. His death was due to pneumonia.

"THE ARCHITECT" STUDENTS' SKETCHING AND MEASURING CLUB.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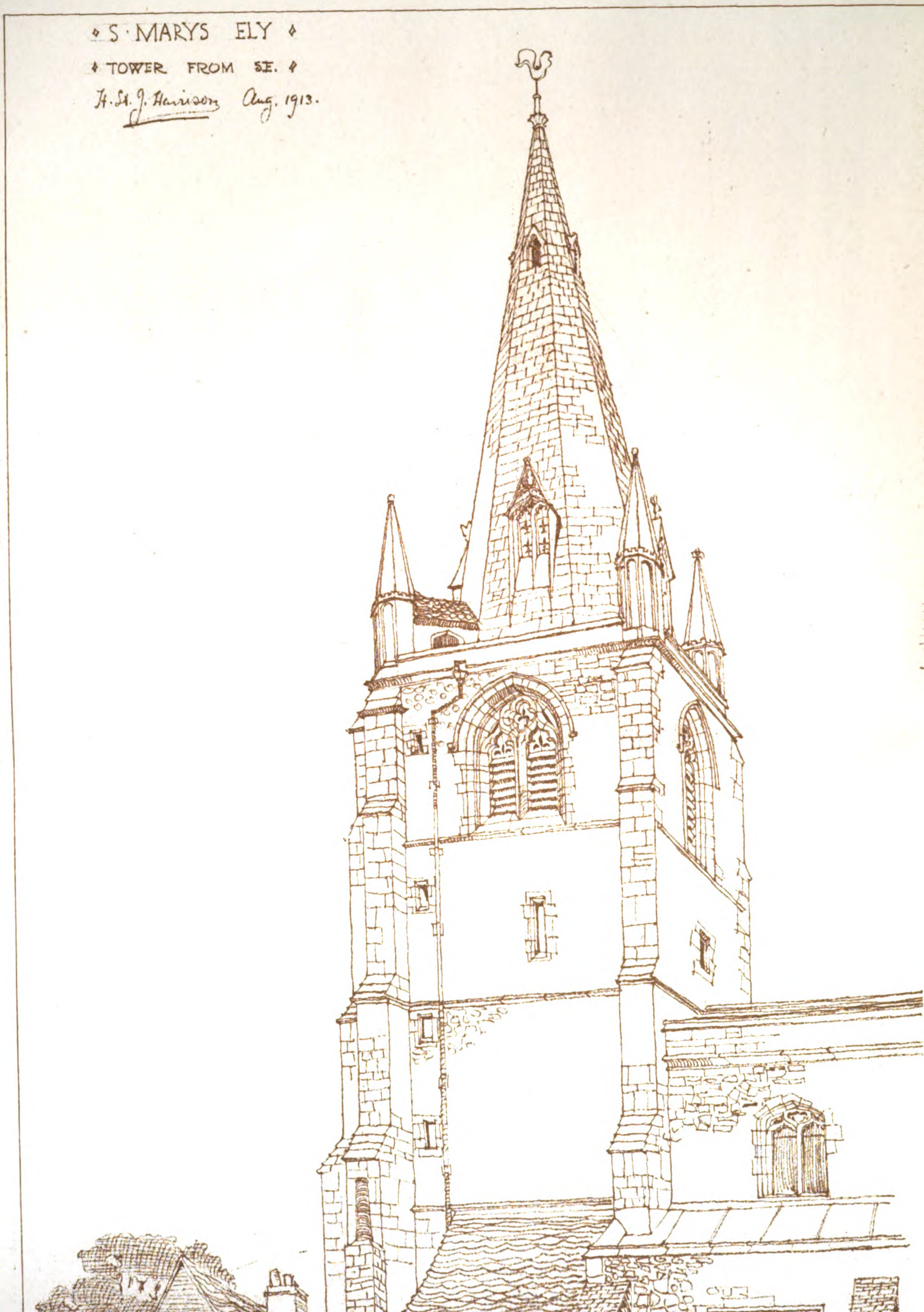
MEASURED AND PLOTTED ON THE SPOT
JULY 1913

From Prize Drawing by "PLATO."

THE OLD ASHMOLEAN MUSEUM, OXFORD.

The old Ashmolean museum situated in Broad Street is now in a very decayed condition.

The deeply recessed doorway, with its coupled Corinthian columns, is surmounted by a curved pediment with a coved tympanum, which contains a shield bearing the university arms. The first floor windows are divided by mullions and transomes, which show a lingering trace of the influence of the Jacobean builders. The drawings we reproduce were submitted by "Plato" in the monthly competitions of "The Architect" Students' Sketching and Measuring Club, and awarded a prize.



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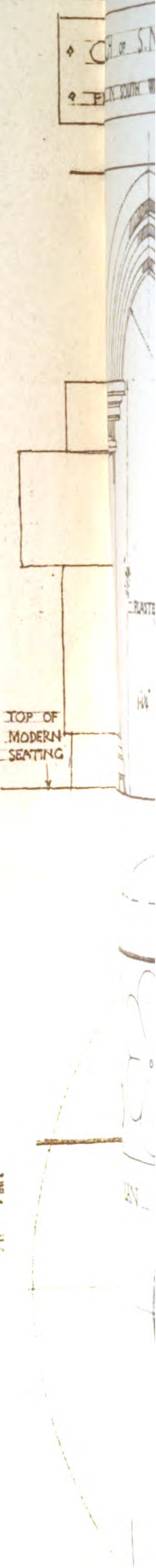
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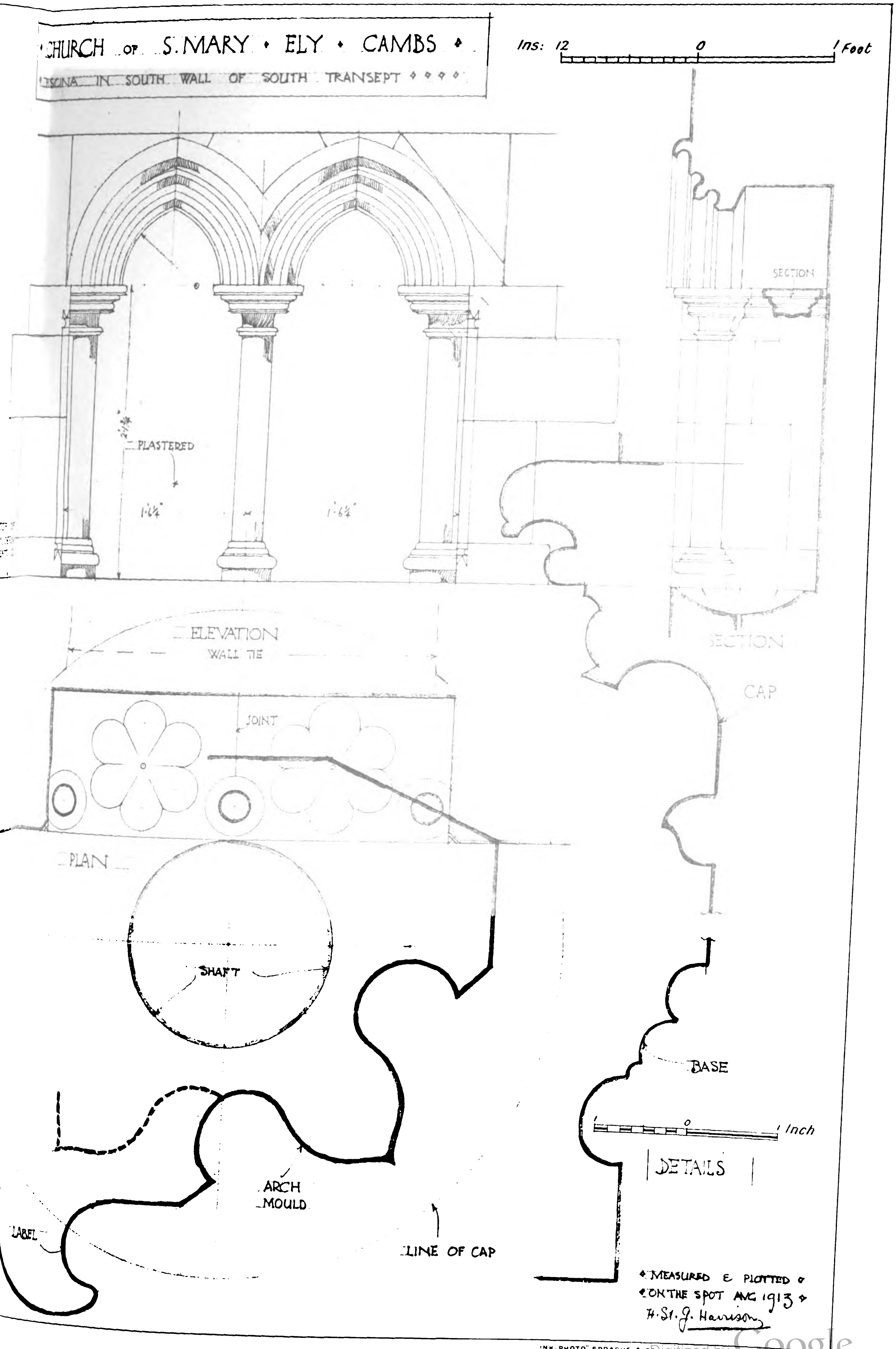
The Architect April 17th 1914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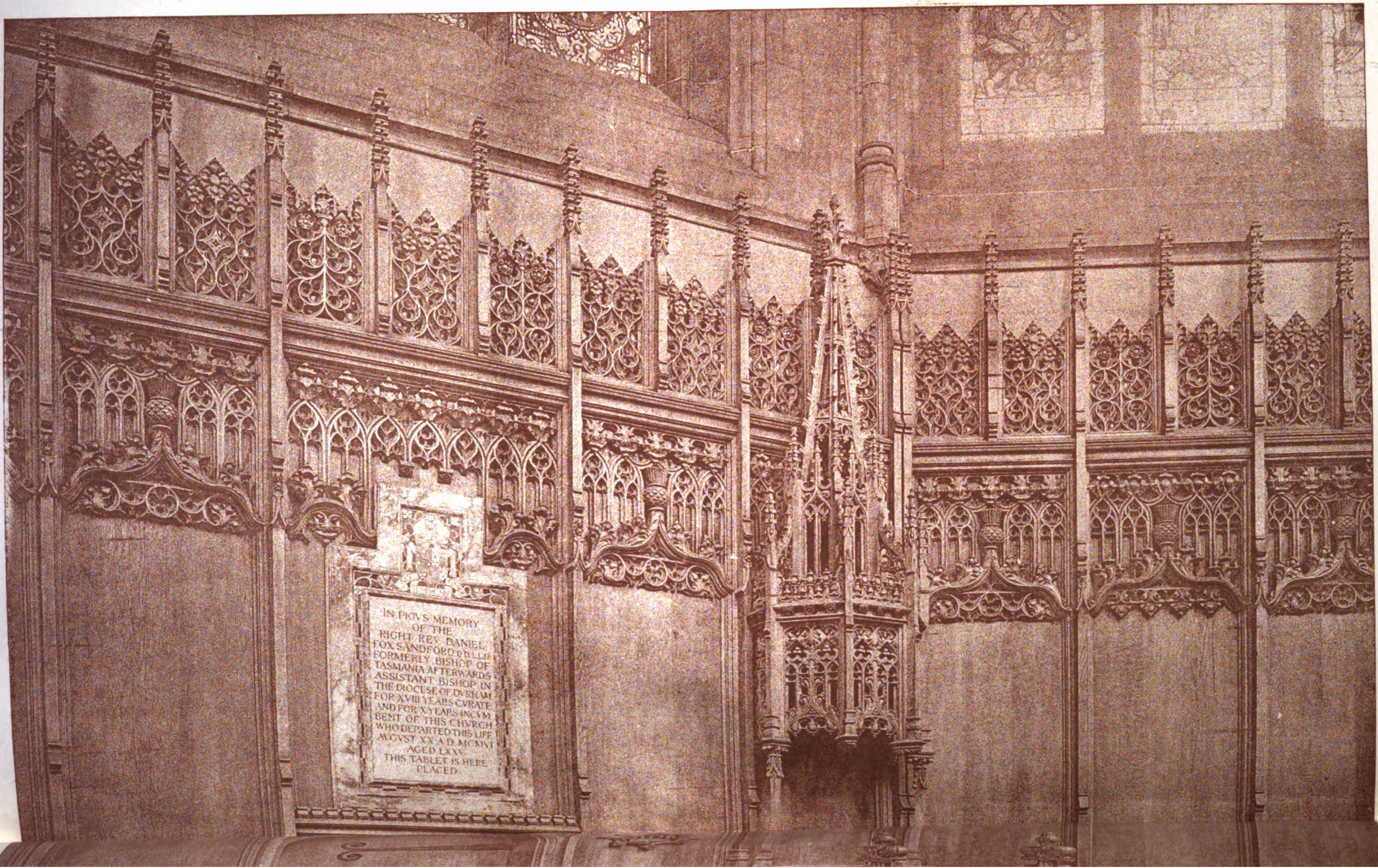
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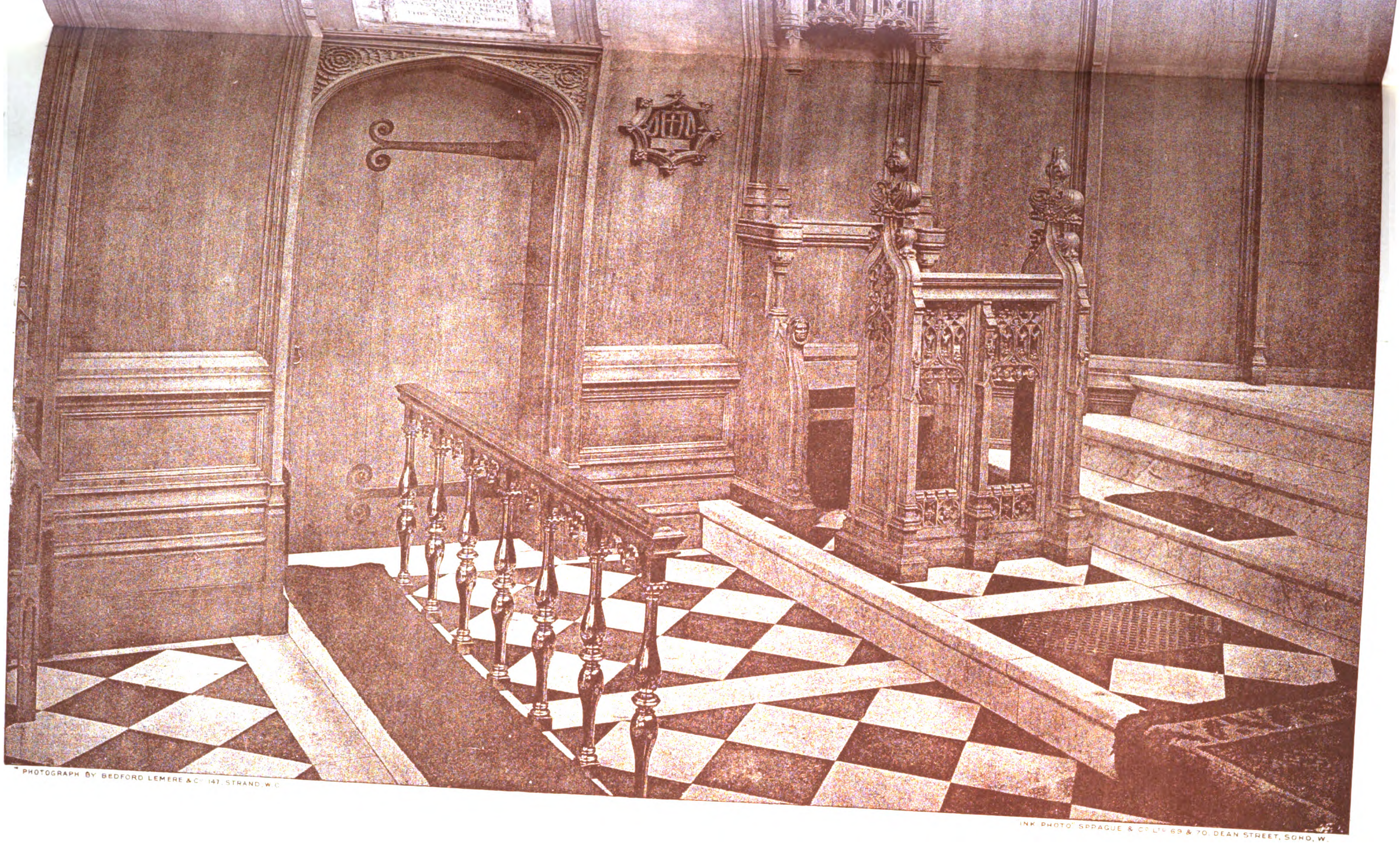

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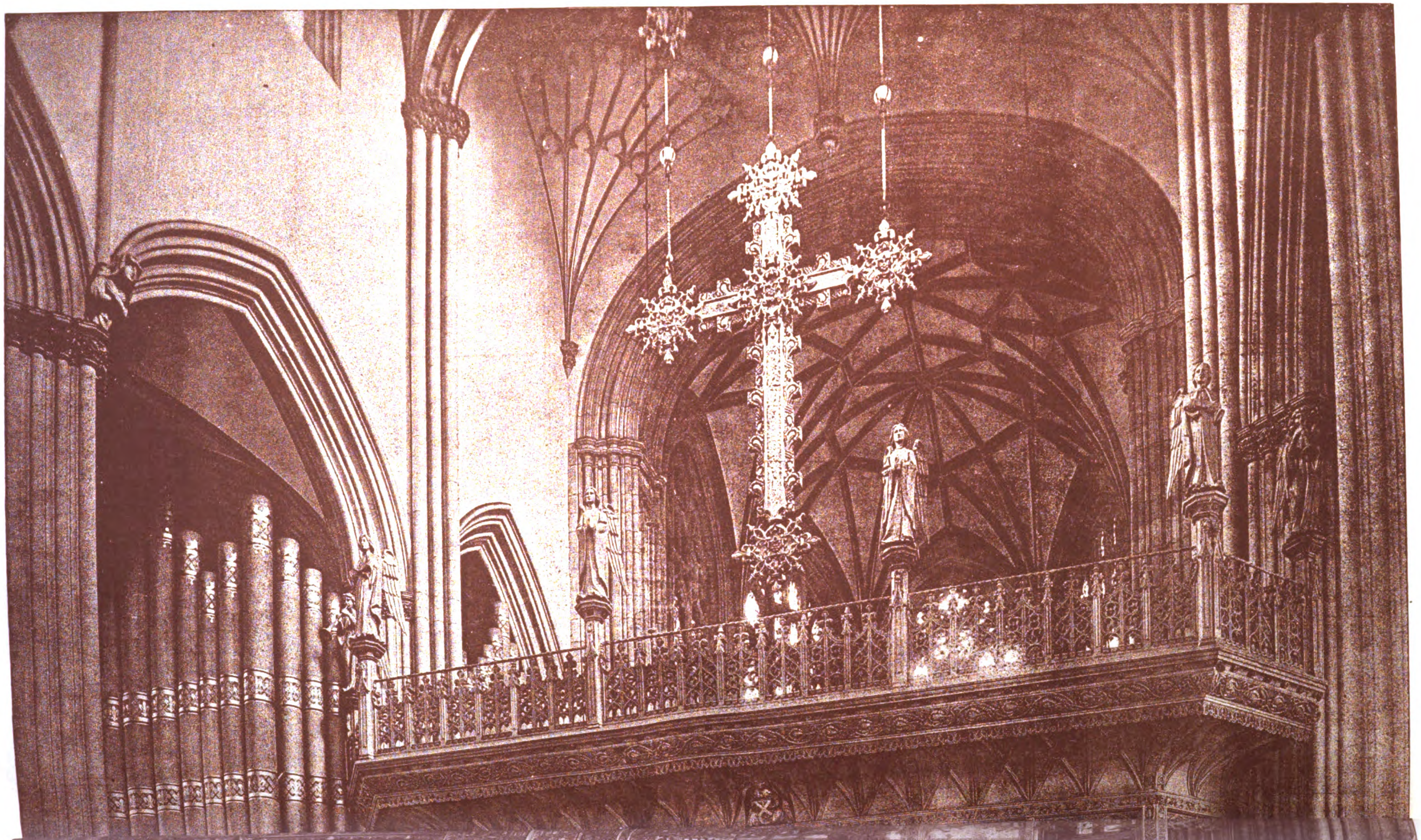

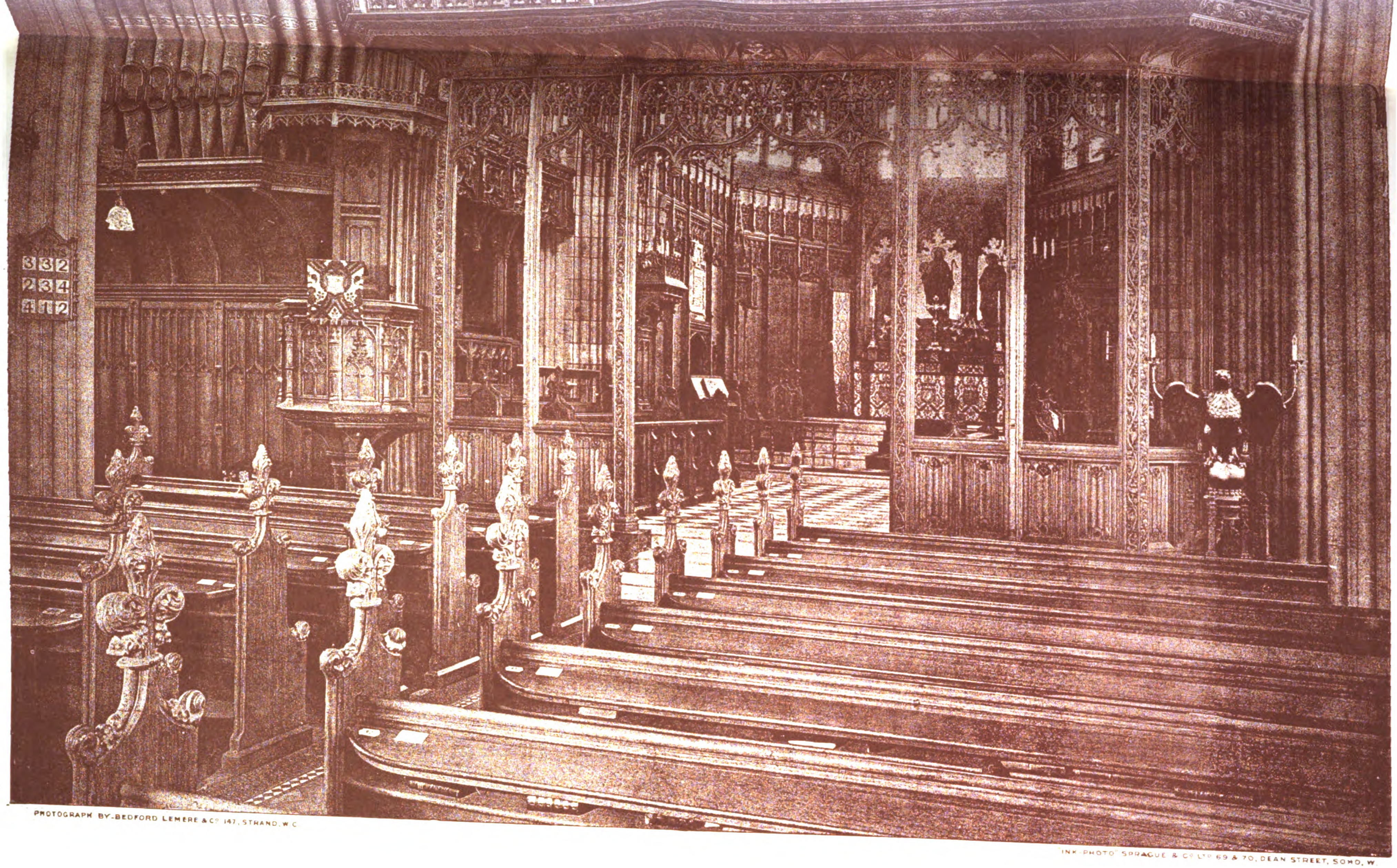

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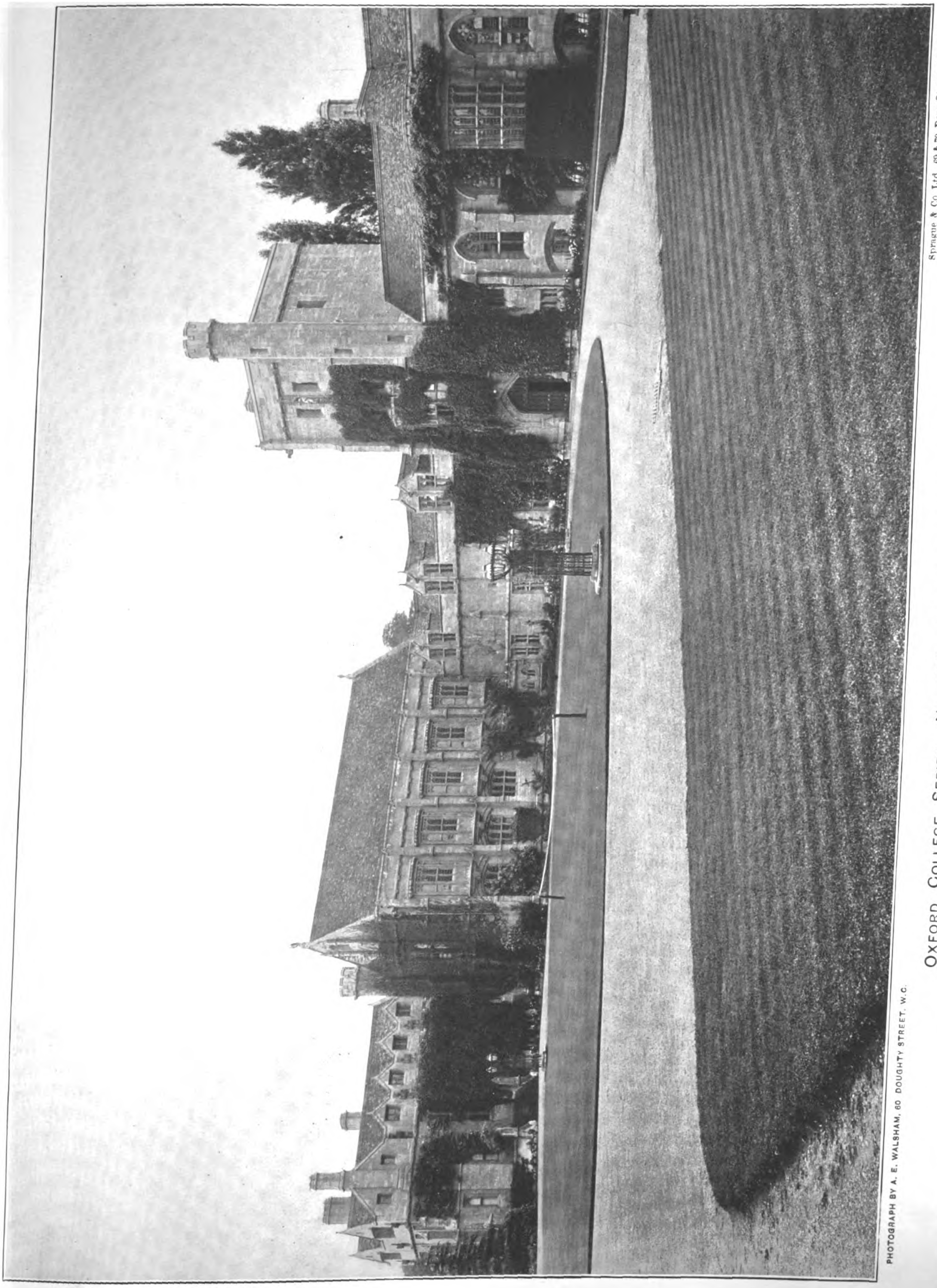

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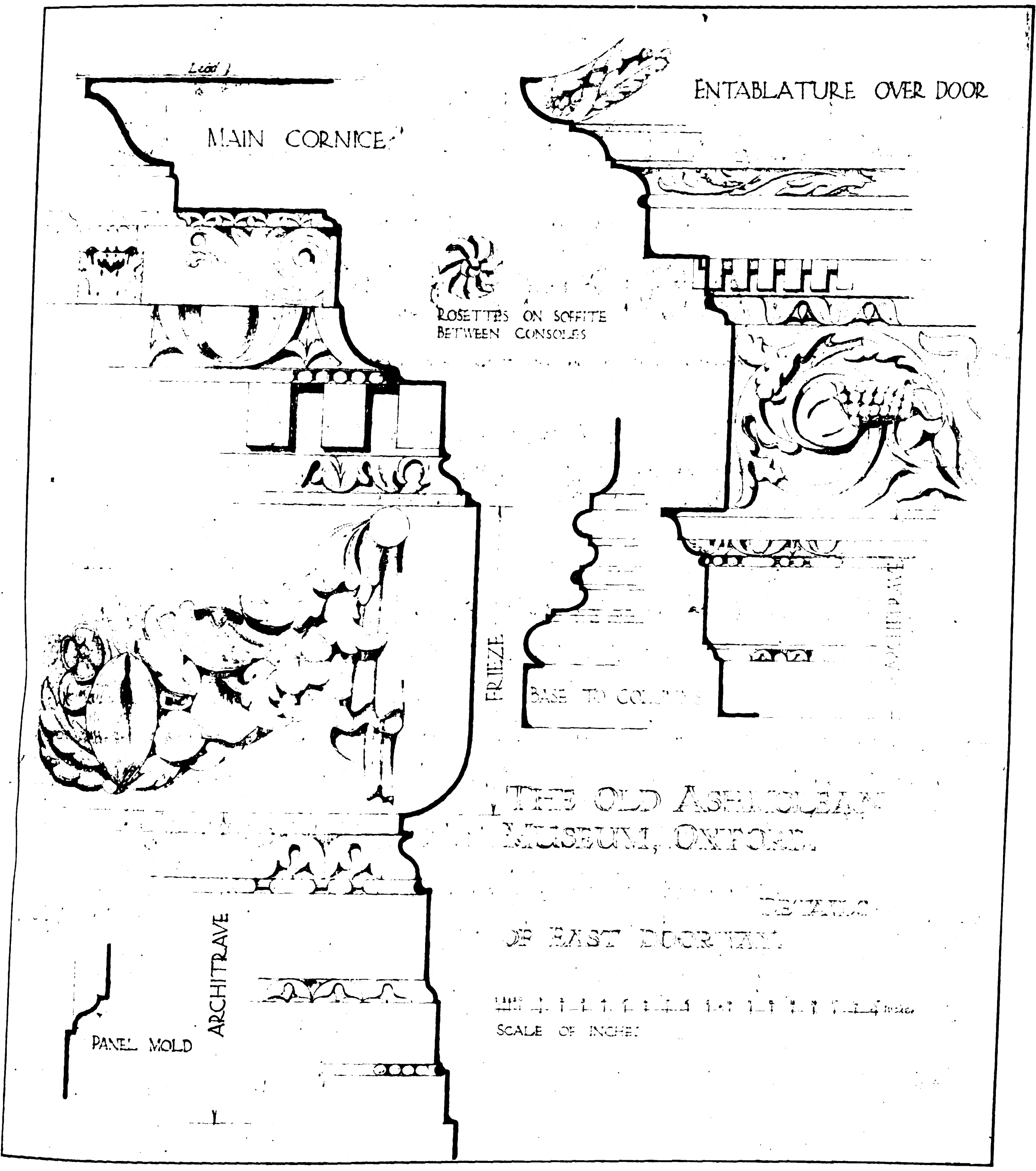

From Prize Drawing by "PLATO."

REGISTRATION IN QUEENSLAND.

The *Brisbane Telegraph* of March 3 states that Mr. Chambers, the President of the Institute of Architects, waited on the Minister for Public Works (the Hon. W. H. Barnes) on March 3, with a request that a Bill should be introduced for the registration of architects. The Institute considered that such a step would bring about an advancement in architecture, and argued that it was necessary, in view of the modern advances in construction and sanitary and engineering science. It was claimed that similar action had been or was about to be taken in the Southern States. Mr. Barnes was told that registration would bring to the profession better qualified and more highly skilled men; would protect the public against incompetence, inexperience, collusion, fraud, and wasteful expenditure; would secure a greater protection of public health and safety by scientific ventilation of buildings and proper fire-resisting construction, and by an expert knowledge of sanitary science generally; and would reveal to the public the experienced and competent against the inexperienced and incompetent. On behalf of the architects, it was claimed for registration (*a*) the placing of the architectural profession on a sound and recognised basis; (*b*) the direction of architectural education in the right channels, as mentioned previously; (*c*) examination of candidates before admission to the ranks of registered architects or the issuing of a diploma; (*d*) authoritative right to deal with all matters pertaining to the profession—that is, with the rights, privileges, emoluments, and discipline of registered architects.

Mr. Chambers handed to Mr. Barnes a copy of a draft Bill which had been prepared by the Institute.

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And Entrances Generally.

MANCHESTER:
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St. Mary's Gate.
GLASGOW.
79 West Regent Street.

The Minister promised Mr. Chambers that the matter would be submitted to the Cabinet, remarking that until the details of the Bill had been looked into it would be quite impossible for him to make any promise. Incidentally, Mr. Barnes indicated that the Government were contemplating action in regard to certain buildings. He remarked that in travelling round he had noticed that in some streets not far from the principal portions of the cities of Brisbane and South Brisbane buildings had been erected in such a way as to be a menace to health and a danger to the public. He had noticed more particularly one street in which fourteen houses had been built with scarcely any division between them. There was no privacy, and altogether it was a condition of things that should not be allowed to be continued. Action had been taken by the Government in the direction of seeing that such a condition of things should not be allowed in the future. The present position was that land could not be cut up into less than 16-perch allotments, but so far as he could ascertain there was nothing to prevent a buyer of such allotments from putting dwellings on smaller areas. In a climate such as Queensland's he thought an effort should be made to prevent such a state of affairs, especially when there was plenty of room available.

BUILDING PROGRESS IN THE PROVINCES AND SUBURBS.

A LIST OF WORKS PROJECTED OR COMMENCED.

(N.B.—Local Authorities, architects, and others are invited to submit full particulars for insertion in this weekly list. Where districts are not entered against names of architects and builders the address is as a rule local.)

ENGLAND.

BERKSHIRE.

Reading.—Jam factory (£55,000), for the Co-operative Wholesale Society.

BUCKINGHAMSHIRE.

Beaconsfield.—Church.

CHESHIRE.

Stockport.—Council School, Great Moor.

CORNWALL.

Padstow.—Eight workmen's cottages.

St. Dennis.—Infants' Council School, for the St. Austell and St. Columb District Education Committee.

DERBYSHIRE.

Derby.—Branch Library, London Road, Alvaston. Mr. A. Eaton, architect, 6 St. James' Street.

Draycott.—Wesleyan Church Schools (£1,200).

DEVON.

Devonport.—Infants' Council School (for 240 places), College Road, Ford (£2,630). Messrs. Thornely (F.R.I.B.A.), Rooke & Barron, architects, 29 St. Aubyn Street; also

Plymouth.—Public Schools (£18,000).

Tavistock.—House. Mr. T. W. Latham (of Kingsbridge), architect.

DURHAM.

Barnard Castle.—School, Newgate. Mr. W. Rushworth, F.R.I.B.A., County Education architect, Shire Hall, Durham.

Darlington.—St. Luke's Church, Corporation Road. (First portion: £4,000.)

Thornley.—Twelve cottages and eight bachelors' quarters for aged miners.

GLOUCESTERSHIRE.

Wotton-under-Edge.—Workmen's cottages. Mr. A. V. Lawson, architect.

HERTFORDSHIRE.

Cheshunt.—Girls' Secondary School, Windmill Lane (£4,800).

LANCASHIRE.

Bolton.—Proposed garage, Albert Road, for Mr. Mayhall.

Twenty-one houses, Longfellow Avenue, Hulton. Mr. F. H. Cartwright, builder, 283 St. Helen's Road.

House, Markland Hill Lane, for Mr. P. Haworth.

Twenty-three houses, Hulton Lane, for Mr. M. Higson.

Three houses, Lever Edge Lane, for Mr. J. Middlehurst.

House, Abbotsford Road, for Messrs. Leigh Bros.; also

House and shop, Chorley Old Road; also

Nineteen houses, Devonshire Road.

House, Chorley Old Road, for Mr. R. J. Berry.

Eleven houses, Melbourne Road, for Mr. R. G. Jones.

Two houses, Tempest Road, for Messrs. Ritson & Cole.

Houses, Thorne Road, for Mr. W. E. Yates.

Four houses, Welbeck Road, Heaton, for Mr. T. Woods.

Two houses, Westcliffe Road, for Mr. J. T. Hamilton.

Two houses, Bentley Street, for Mr. W. Bradley.

Mill, Jackson Street: addition, for Messrs. Cannons, Ltd.

Warehouse, Crown Street: additions, for Messrs. H. Whitehurst & Son.

Clitheroe.—Council School, off Chatburn Road.

Great Lever.—Council School.

LINCOLNSHIRE.

Skegness.—Cinema, Drummond Road. Mr. F. A. Tugwell, A.R.I.B.A., architect, 102 Westborough, Scarborough.

MONMOUTHSHIRE.

Griffiths Town.—Electric Theatre, Commercial Street, for the Palace Company.

NORFOLK.

Sheringham.—Picture Palace. Messrs. Stanley Simons & Co., architects. Mr. C. A. Sadler, builder.

NORTHAMPTONSHIRE.

Eye.—Parish Church: vestry. Messrs. Townsend (A.R.I.B.A.) & Fordham, architects, Cross Street, Peterborough.

NORTHUMBERLAND.

Berwick-on-Tweed.—P.M. Church, Bankhill (£3,000 to £4,000).

NOTTINGHAMSHIRE.

Mansfield.—Public Baths. Mr. T. P. Collinge, Borough surveyor.

Retford.—Isolation Hospital for twenty patients.

SOMERSET.

Long Ashton.—Six roadmen's cottages and a depôt. County surveyor.

Taunton.—Taunton and Somerset Hospital: extensions.

STAFFORDSHIRE.

Burslem.—St. Joseph's R.C. School: alterations.

Burton-on-Trent.—Infirmary: extension (£7,500). Mr. H. Beck, architect, 10 High Street.

Fenton.—C.E. School: alterations.

Hanley.—R.C. Infants' School, Birches Head.

Longton.—Edensor C.E. School.

Newcastle-under-Lyme.—Seventeen workmen's dwellings, Castle Hill Road and Stanier Street. Borough surveyor.

Stoke-on-Trent.—R.C. School for 276 boys.

SUFFOLK.

Hundon.—Parish Church: re-building.

SURREY.

Croydon.—Twelve houses, Ashburton Avenue, for Mr. T. G. Crump; also

House, Fryston Avenue; also

Sixteen houses, Compton Road; also

Seventy houses, Wydehurst Road.

No. 182 Beulah Hill, Upper Norwood: addition for Mr. W. F. Young.

Two houses, Pollard's Hill North, for Mr. W. A. Brown.

Two houses, Pollard's Hill West and South, for Norbury Garden Village, Ltd.

Six houses, Whitehorse Lane, for Messrs. E. Evans & Sons.

Three houses, Buller Road, for Messrs. Scratchley Bros.

Six houses, Ingram Road, for Mr. J. S. Keen.

House, Park Road, for Messrs. Ashton & Co.

Fourteen houses, Sefton Road, for Mr. P. Richardson.

Twelve houses, Teevan Road, for Messrs. Higgins & Thomerson.

Four houses, Woodside Road, for Mr. W. Knight.

Council School, Tamworth Road (£11,000).

Lock-up shop, stores, &c., Drummond Road, for Messrs. W. & R. Barrs.

Five shops and houses, corner of Shirley Road, for Mr. W. Hine.

Guildford.—Two houses, Stoke Park Farm Estate, for Mr. A. E. Taylor.

House, Aldershot Road, for Mr. W. J. Edmonds.

House, Mountside Road, for Messrs. Rutter & Co.

Pair of houses, Old Farm Road, for Guildford Garden Estate Syndicate.

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BROAD FLANGE BEAMS. SOLID COLUMNS.

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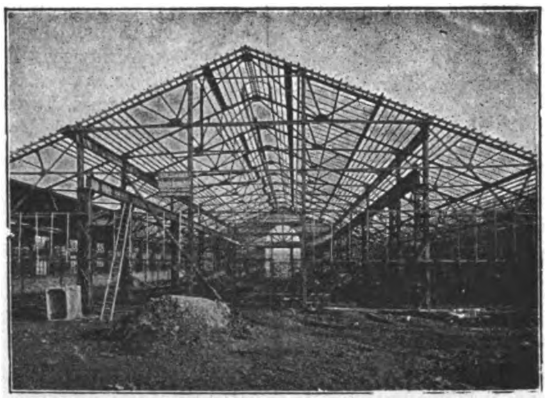

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EDINBURGH, St. Andrew Steel Works.

MANCHESTER, Office and Works, Trafford Park.

GLASGOW, Office: 75 Bath Street. Works: Port Dundas.

England—*continued*.

Sussex.

Arundel.—Ten workmen's cottages. Council surveyor.

Horsham.—House, near Grubb Street. Messrs. Murrell Bros., contractors, 129 Crawley Road.

Electric Theatre, Carfax: additions and alterations. Mr. W. F. Pannett, builder, Barrington Road.

Warwickshire.

Birmingham.—St. Thomas' Schools, Bath Row. Messrs. Harrison (F.R.I.B.A.) & Cox, architects, 109 Colmore Row.

Cinematograph Theatre, Corporation and Lancaster Streets. Mr. E. Garfield, builder, 5 Hampton Road, Handsworth.

Foleshill.—S.A. Hall, Broad Street.

Nuneaton.—Picture House, Abbey Street. Messrs. H. Mayo & Son, architects, New Bridge Street.

Wiltshire.

Chippenham.—Twelve workmen's houses, Wood Lane (£1,400). Mr. A. E. Adams, Borough surveyor.

Worcestershire.

Dudley.—Town Hall, Museum, and Art Gallery (£40,000).

Yorkshire.

Bradford.—Forty-five working-class dwellings, Faxfleet Street.

Brighouse.—U.M. Church, Bailiffe Bridge (£2,000).

Elland.—Norton Mills: addition for Mr. J. Casson. Messrs. Stott & Sons, architects, 5 Cross Street, Manchester.

Mill, Thomas Street, for Mr. J. Lumb.

Presbytery, for the Rev. Father P. Kealy.

Stores at Rosemount Ironworks, for Messrs. R. Dempster & Sons, Ltd.

Haxby.—Folk Hall, &c.

Howden.—Isolation Hospital. Mr. T. H. Ullathorne (of Selby), architect.

Hoyland.—Ten Council houses.

Luddenden Foot.—(Supplementary to March 20.)—Mechanics' Institute. Messrs. Sutcliffe & Sutcliffe, architects, New Road, Hebden Bridge.

Mexborough.—Central Schools: extensions.

Rotherham.—Cattle Market, Millgate.

Court House, The Crofts.

Scarborough.—St. Columba's Church (£7,000). Mr. Temple Moore, F.R.I.B.A., architect, 44 Bedford Row, London, W.C.

Wakefield.—Warehouse, &c., Westgate Common. Messrs. Simpson & Firth, architects, Southgate Chambers.

York.—The Manor School (£5,000).

WALES.

Clydach (Glamorganshire).—Council School, for the Pontardawe School Managers.

Haverfordwest.—County School.

Wrexham.—North Wales Counties Asylum: alterations for an additional eighty patients (£8,000).

SCOTLAND.

Ayr.—R.C. School, Whitletts Road: extensions (£600), for the R.C. Diocese of Galloway.

Cleland.—Fifty working-class houses.

Clydebank.—Block of cottage dwellings, Boanbarron and Albert Roads (£2,000 to £3,000). Messrs. R. McAlpine & Son, builders, 29 St. Vincent Place, Glasgow.

Glasgow.—Cold Stores in Armour, Hill and Sydney Streets, for Union Cold Storage Co., Ltd.

Rushill Hospital: extensions for the Corporation; also

Police Buildings, Albert Road, Govan: additions and alterations.

Board School, Langlands Road, Govan: additions.

Works, Petershill Road and Darnick Street: extensions for Messrs. F. Braby & Co.

Greenock.—Three tenements of dwellings, corner of Lyle and Antigua Streets, for the Greenock Provident Building Society.

Motherwell.—St. Mary's Established Church.

Peebles.—Picture House, The Briggate (for 800 sittings), for Mr. W. Kidd (of Motherwell), £3,000.

IRELAND.

Ballymena.—Municipal Technical School: extension and improvement (£1,000).

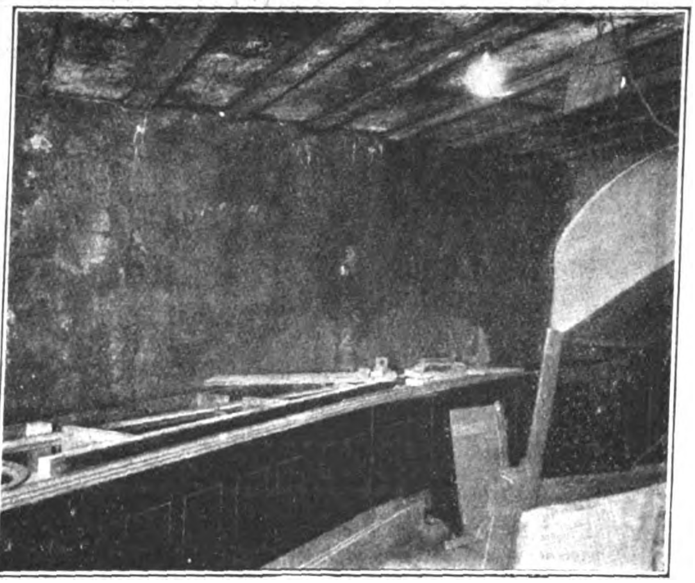
Belfast.—Stores, York Road, for the Belfast Mineral Waters Co., Ltd. Mr. W. J. Moore, architect, 35 Royal Avenue.

Limerick.—Stores, Dock Road, for Messrs. Bannatyne & Sons (£8,000 to £10,000).

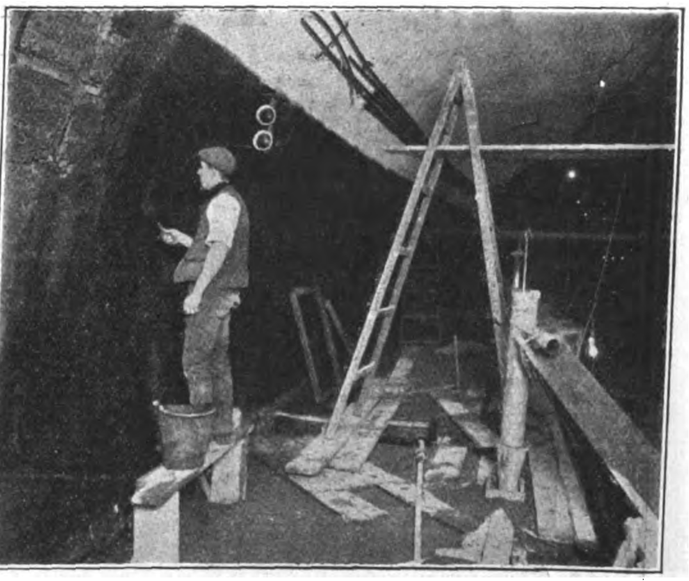
Newcastle.—Electric power house. Messrs. F. C. Neill & Son, contractors.

WATERPROOFING CONCRETE UNDERGROUND AGAINST HEAVY WATER PRESSURE.

A very difficult job has recently been accomplished by the Ironite Co., Ltd., of 1 Victoria Street, Westminster, at the new Embankment station of the Charing Cross and Hampstead Tube Railway. Through the two vertical walls of mass concrete forming the sides of the escalator pit the water was freely percolating, under a head of 40 feet of water, making it impossible to cement render these walls in that condition.



After several unsuccessful attempts had been made to stop the water, the Ironite Co. undertook the work, and have entirely stopped the percolation, and the walls have been tiled. The whole of the station interior has also been treated with "Ironite," and the roofs afterwards painted white. The work was carried out under the instruction of Mr. H. H. Dalrymple-Hay, M.I.C.E., the consulting engineer.



PATENT SPECIFICATIONS PUBLISHED. APRIL 9, 1914.

Selected and abridged by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

No. 1,204. Jan. 15, 1913.—Hermann Frank, 20 George Bahrstrasse, Dresden. Radiators for heating buildings and other purposes.

5,322.—March 3, 1913.—E. G. Stone and E. J. Siddeley, Moore Street, Sydney, N.S.W. Apparatus for making cement or concrete pipes.

12,492. May 28, 1913.—G. A. Birchley, 18 Hope Street, and Arthur Harvey, 85 Beeches Road, West Bromwich Door silencer.

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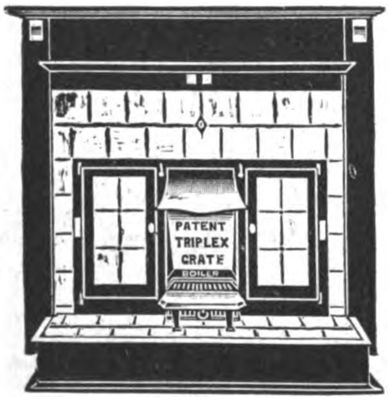

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"MARBLITE"

6,293. March 13, 1913.—C. W. Massey, Westward Ho! Ellis Road, Clacton-on-Sea. Domestic fireplaces.

6,607. March 18, 1913.—A. C. Manifold, 36 Ringstead Road, Catford, S.E. Portable shops or stalls.

8,158. April 7, 1913.—John Evans, Pant, Traianglas, Trecastle, Breconshire. Safety device for lifts.

8,434. April 10, 1913.—Thos. Eames, 1 Park Road, Wembley, Middlesex, and A. H. Eames, 5 Park Road, Wembley. Draught excluders for doors and casement windows.

12,103. May 24, 1913.—Henry Hawgood, 32 Fairlawn Grove, Chiswick Park, W. Door fasteners.

13,437. June 10, 1913.—Harry Crosby, The Ferns, Ballard's Lane, North Finchley. Holders or supports for paint and like brushes.

14,819. June 27, 1913.—Wm. Oates and F. P. Barber, Horley Green Works, Horley Green, Halifax. Urinals.

15,669. July 7, 1913.—Edwin Holland, 195 Collins Street, Melbourne, Victoria, Australia. Window adjusters and fasteners.

16,095. July 12, 1913.—James Murtagh, Carpentry Schools, Kiltimagh, county Mayo. Fire escape.

16,292. July 15, 1913.—B. G. Wilmer and Gowan Woods, 11-14 Bury Street, St. Mary Axe, E.C. Stair tread.

20,509. Sept. 10, 1913.—C. G. Bayliss, West Street, Haslemere, Surrey. Wind-directed chimney-pots and like ventilators.

20,820. Sept. 15, 1913.—Dated under International Convention April 2, 1913. Clifford Toon, senr., Public Trust Building, Cathedral Square, Christchurch, N.Z. Means for use in caulking lead joints in iron pipes, mains, and the like.

13,471. June 11, 1913.—J. R. Brown, 9 Melville Road, Brighton. Casement stays.

13,818. June 14, 1913.—Dated under International Convention June 14, 1912. C. P. Durand, 55 Avenue de Bordeaux, Poitiers, Vienne, France. Hooks for securing roofing tiles.

14,025. June 17, 1913.—Walter Burrows, 120A Tanners Hill, Deptford, S.E.; Albert Parker, 169 New Cross Road, S.E.; and Henry Byles, 31 Royal Hill, Greenwich. Fence for four-cutter moulding machine for wood.

16,369. July 10, 1913.—Louis Rasch, 84 Horseferry Road, Westminster. Chimney and flue tops.

13,422. June 10, 1913.—Dated under International Convention Feb. 1, 1913. A. S. Ramage, 547 Richmond Avenue, Buffalo, Erie, N.Y. Paints, enamels, and the like.

1,379. Jan. 19, 1914.—John Bratley, Union Lane, Sheffield. Wood planing machines.

25,689. Nov. 10, 1913.—Perfect Window Regulator Co., 43 Exchange Place, New York. Window operating apparatus.

1,453. Jan. 18, 1913.—W. L. Bullows, Long Street Works, Walsall. Tie for binding together scaffold poles and other temporary structures.

Any of the above specifications may be obtained from J. D. Roots & Co.

Correspondence

[*The Editor will not be responsible for the opinions expressed by Correspondents.*]

Registration by "Charter" or by "Bill."

SIR,—When the Institute was proposing to promote registration by statute it was stated that one insuperable obstacle to their doing so was an alleged disability due to the fact that Licentiates could not vote on the matter, and that before the Institute could proceed further with registration that disability must be removed.

If the Institute cannot legally promote statutory registration because of this alleged disability, how can they properly proceed with any other form of registration under the same circumstances? Are they sure that they are not acting *ultra vires*, as they have been on the point of doing in other matters on two other occasions?

Personally, I am more convinced than ever that the position of the Licentiates does not constitute a disability, and that there is nothing to prevent the Institute from promoting statutory registration if they choose to do so.

However that may be, I think the following comparative statement of the effect of the respective proposals for registration by "statute" or by "charter" may be of particular general interest and value at this juncture:—

The Society is promoting a Bill in Parliament for the Statutory Registration of Architects, *covering the whole profession, irrespective of membership in any architectural bodies, in the interests of the community.*	The Institute is promoting proposals for a new Charter, to enable it to establish a voluntary Register of "qualified" Architects, *in the interests of the Institute.*
Registration by Statute, as proposed by the Society.	*Registration by Charter,* as proposed by the Institute.
(*a*) Would establish a Register of persons *recognised by law* as qualified architects.	(*a*) Would establish a Register of persons *recognised by the Institute* as qualified architects.
(*b*) Would establish a governing body representative of the whole profession, with administrative and disciplinary powers, enabling them (*inter alia*) to strike architects off the roll for professional misconduct, and so prevent them from continuing to practice as architects.	(*b*) Would establish a Standing Committee with powers restricted to reporting to the Council of the Institute, whose utmost disciplinary action would be limited to removing members from the Register for professional misconduct, a proceeding which would not prevent them from continuing to practice as architects.
(*c*) Would protect *all* vested interests.	(*c*) Would protect *certain* vested interests only.
(*d*) Would give all qualified persons the right to register.	(*d*) Would reserve to the R.I.B.A. Council the right to veto qualified applicants for registration.
(*e*) Would prevent unqualified persons from practising as architects and from recovering fees.	(*e*) Would not prevent any persons, qualified or otherwise, from practising as architects, or from describing themselves as architects; *thus an abuse, which it is one of the aims of Statutory Registration to stop, would be perpetuated under such a voluntary system of registration.*

Yours faithfully,
C. McARTHUR BUTLER,
Secretary of the Society of Architects.

28 Bedford Square, London, W.C.:
April 9, 1914.

Increment Value Duty.

SIR,—I observe in the Press of March 31 that at a recent meeting of the Birmingham Chamber of Commerce a letter from the Chancellor of the Exchequer was read with reference to increment value duty on buildings and machinery. It is noteworthy that this letter is a candid admission that the price obtained for buildings and machinery may be taxed. "Increment value duty may be payable," says the letter, "not only where there has been an increase in the value of the site over the original site value, but also where the purchaser has for some reason been willing to pay for the property a price in excess of what could be obtained in the open market." This is exactly what the Land Union has contended was the result of the Commissioners' interpretation of the Statute, and it is incorrect to say that this is not a tax on buildings and machinery.

The increment tax was recommended to the country and believed by the country to be a tax on a rise in the values of sites, when such rise in values was not due to anything done by the owners of the sites. It was never understood to be a tax on an occasional profit derived from the sale of buildings and machinery. The danger of the system is obvious. Who is to be the judge of the market value of plant and machinery? And why should a tax on buildings and machinery be levied under the guise of a land tax because a purchaser is willing for special reasons to pay a price for such buildings and machinery in excess of what could be obtained in the open market?

In the case of special plant and machinery sold as a going concern, this must inevitably be a very common occurrence, and the method by which a tax can be levied in such circumstances should be strenuously opposed by the business community.—Yours, &c.,

C. H. KENDERDINE.

St. Stephen's House, Westminster:
April 9, 1914.

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THE ARCHITECT

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FORTHCOMING EVENTS.

Monday, April 27.

Royal Institute of British Architects : Special General Meeting : Registration : New Charter and By-Laws, at 8 P.M.

Architectural Association : Special General Meeting : Alteration in By-Laws, at 8 P.M.

Liverpool Architectural Society : Annual General Meeting, at 6 P.M.

Tuesday, April 28.

Royal Society of Antiquaries of Ireland : General Meeting in Dublin, at 8.15 P.M.

Institution of Civil Engineers : Annual General Meeting of Corporate Members only at 8 P.M.

Wednesday, April 29.

Manchester Society of Architects : Annual General Meeting at 6.30 P.M.

Saturday, May 2.

Institution of Municipal and County Engineers : North-Eastern District Meeting in Sheffield.

THE ARCHITECTURAL ASSOCIATION SKETCH BOOK.

Yet another volume of the perennial Sketch Book of the Architectural Association has reached completion, and without flattery it can honestly be said that there has never been a better volume issued than that for 1913. The outstanding feature of the Architectural Association Sketch Book is its utility. This is not a newly-evolved qualification, but may be said to have been characteristic of the publication from its earliest days. The source of the utility is to be found not only in the wise preponderance of measured drawings which has always been maintained in the Sketch Book, but in the thoroughness and completeness with which the work measured is illustrated, so that the several volumes form an invaluable record of very much of the best architecture that has been produced through successive ages in many countries.

It is no wonder that the Royal Institute of British Architects has arranged for the reproduction in the Architectural Association Sketch Book of a selection from the drawings submitted for the annual students' competitions. Save by a special publication, which would scarcely be practicable, it would hardly be possible to reproduce as satisfactorily as the large size of the Sketch Book permits such admirable sets of drawings as those of Blenheim, by Mr. H. C. Mason, and of Manchester Old Town Hall, by Mr. Gordon Hemm, and that the publicity of such widely interesting and generally valuable records should be confined to the occasional exhibition of the originals would be a public calamity.

Nor are these the only examples of such valuable records. Outside the prizewinners of the Royal Institute there have been painstaking and enthusiastic measurers of old work to carry on the torch of thoroughness lighted in the eighteenth century, fanned into brilliance by the Gothic revivalists, and maintained in full illumination up to the present time. Eight plates are devoted in the present volume to the set of drawings of St. Mary's Church, Finedon, Northants, by Mr. H. S. Stephens. Mr. Gordon Hemm has measured the Manchester Art Gallery as well as the old Town Hall. These two buildings of the early nineteenth-century Greek revival are of topical interest in view of the early twentieth-century resuscitation from which we are now suffering. Other valuable records of English architecture are the Royal Academy School drawings of the west front of St. Martin in the Fields by Mr. A. Bryett, and the church of St. Vedast, Foster Lane, in the City of London, by Mr. T. Hansford White.

Mr. Alan Binning, who, by the way, is the most generous contributor to the present volume, being the author of seventeen plates out of the total number of seventy-two, has given us measured drawings of the Amphitheatre, the Nymphæum, and the Pont du Gard at Nimes, thus bearing witness to the catholicity of the modern architectural student, further evidence of which is afforded by Mr. W. J. Palmer Jones, with measured drawings of the Temple of Hibis in the Kharga oasis, of which the date is given as circa B.C. 500. From this to Sir Charles Barry's Manchester Art Gallery of A.D. 1829 forms the epoch within which architecture of the past is considered worthy of measurement and illustration in the present volume of the Architectural Association Sketch Book.

As regards local distribution of subjects, we find the present volume contains forty-four plates out of the seventy-two dealing with buildings in England. Italy comes next with fifteen plates, France is represented by seven plates, Wales and Egypt contribute two each, and there is one subject illustrated from both Scotland and the Netherlands. Thus a right preponderance is given to our own country, and character rather than piquancy, excellence rather than eccentricity, has dictated to the editors the selection of examples from abroad. Carefulness in the selection of subject may truly be said to be a marked characteristic of the work performed by the four editors, Messrs. C. C. Brewer, F. C. Eden, S. K. Greenslade and A. Gilbert Scott, in maintaining the high level of value which is ever to be found in the plates of the Architectural Association Sketch Book.

It is comforting though almost surprising to find at this time of day that the majority of the plates illustrating examples of English buildings may be classed as mediæval, because it shows that, although present-day fashions in design preclude any strong probability of the detail thus studied being "useful" in everyday practice, there is an apparent recognition that the qualities of design evinced in the best mediæval buildings are worthy of study, and provide desirable lessons for the young architect. Indeed, the thought occurs to us that it may be worth the consideration of those professors who have in their hands the training of architectural students whether originality of conception is not rather more likely to be fostered by the study of old work, in which great and abiding principles of architectural design are embodied, but of which the details are not under present conditions suitable for reproduction, than by restricted devotion to Classic and Renaissance buildings, of which the features and ornament may be used without alteration as finished material merely requiring to be fitted together in composition.

Certain it is that the present superiority of English architecture in the domain of domestic work would never have been achieved had our study of architecture in the nineteenth and twentieth centuries been confined to Classic or even Renaissance work of the past, and if our position in domestic work is to be upheld in the future our students must devote their attention to matters more important in that connection than correct sciography and spatter shading. The present tendency of our schools towards monumental design and the grand manner requires much careful limitation and moderation if we are not to lose our pre-eminence. The grand manner is all very well for great buildings, but the majority of the problems which the students of to-day will have to tackle in their future career will not be those of monumental architecture.

Naturally enough the examples illustrated from Italy are of Renaissance work, with the exception of a few Roman Classical bits in the national museum at Naples, sketched by Mr. Alan Binning. From France we have the Classic work at Nîmes to which we have already referred, a late Renaissance building, the chapel of the Oratory at Avignon, and the late fifteenth or early sixteenth-century church of St. Martin at Argentan.

Whilst the large majority of the plates in the present volume are devoted and rightly to measured work, there are still a fair number of perspective drawings which are valuable both as examples of draughtsmanship and as studies of composition. Particularly amongst the former group we may notice Mr. James Macgregor's sketches of Gothelney Manor and Stokesay Castle, and Sir Charles A. Nicholson's study of the church of St. Martin at Argentan.

We cannot do other than recommend not only to all architects in embryo, but to all those of maturer experience, the very profitable investment of the small sum of one guinea for seventy-two plates of exceedingly valuable illustrations of architecture, an investment rendered possible only by the gratuitous labour of both contributors and editors.

NOTES AND COMMENTS.

We regret to learn that Mr. Reginald Blomfield, R.A., is prevented by the state of his health from occupying the presidential chair of the Royal Institute of British Architects for a third year. It is scarcely surprising that Mr. Blomfield's health has failed under the strain of the thoroughness with which he has fulfilled the duties of his office and thrown his energies into the many activities which are expected outside the Institute itself of the president of that body.

The project of cheapening London's supply of electricity by a concentration of generating power, on which the London County Council have received an expert report from Messrs. Merz and McLellan, is one of considerable interest to architecture. When electricity becomes sufficiently cheap, the question of smoke abatement will be solved, for we shall be able to do all our lighting and heating by its use. Then we shall be able to put up buildings in the metropolis without the certainty of their being covered with soot or otherwise blackened in a year or two. But even the present report and scheme, if adopted, does not promise us all that we desire, as the reduction in cost predicted is but 18 per cent. of the present, and this, it is suggested, should be devoted to writing off the cost of scrapping the present plant of the existing companies by 1931, which is the date at which the County Council may take them over. The report of the experts is summarised as follows:

(1) The concentration of generating plant on sites down the river is the correct policy to begin with, both on technical and commercial grounds, deferring the question of generating part of the energy at the coalfields or elsewhere until both the load and the load factor have grown.

(2) In order to carry out this policy with the minimum waste of capital a high voltage three-phase primary distribution system at 50 cycles per second should be standardised for London as soon as possible. In this connection a standard primary voltage should be at once adopted for all new high-pressure mains.

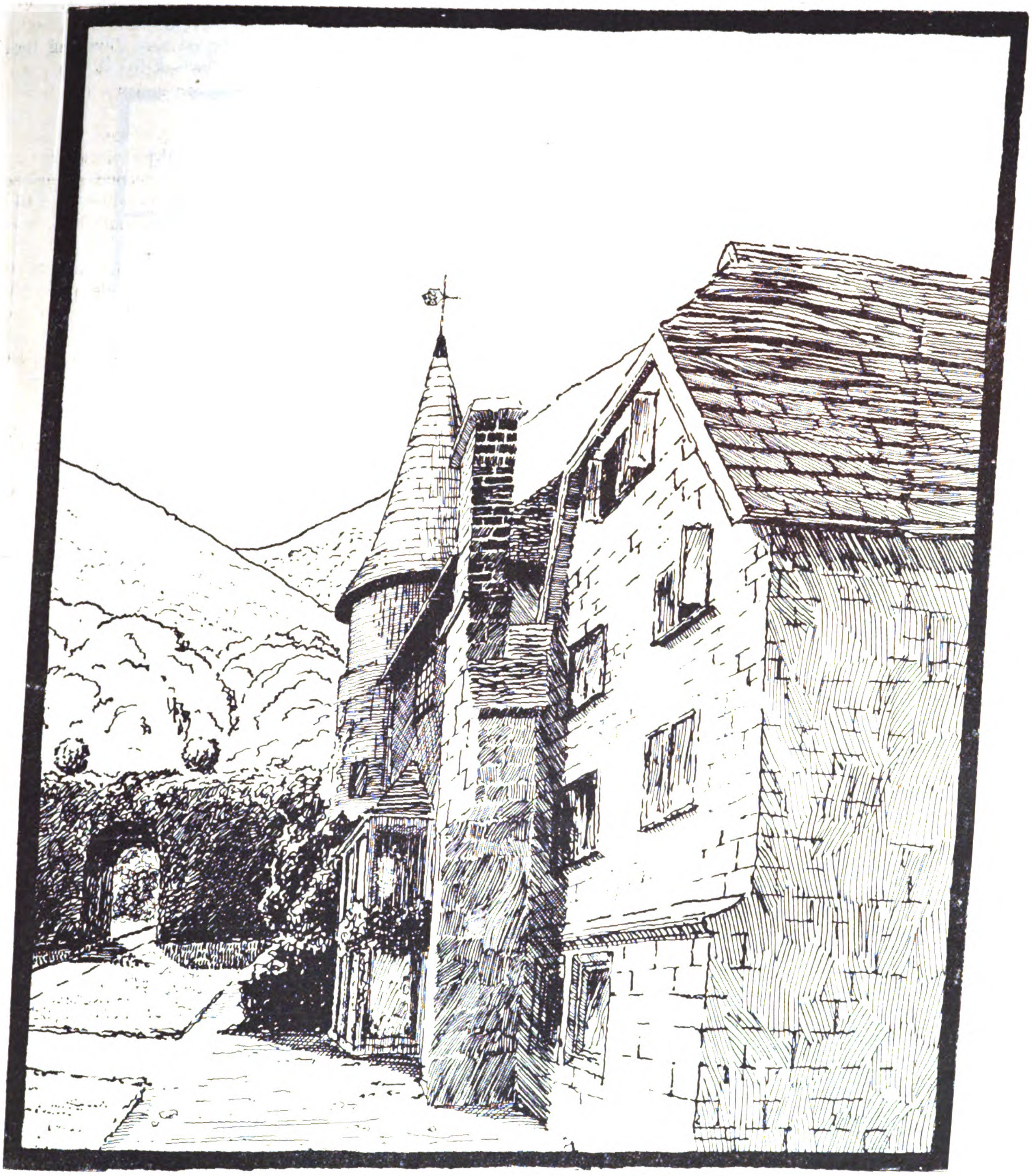
(3) If electricity is to be supplied for power and general domestic use at the lowest possible price it is also necessary, both for economical and other reasons, that the existing low pressure distribution networks should, as a rule, not be extended but be supplemented by a new three-phase network.

(4) The most satisfactory and economical method of achieving these results is the establishment of a new undertaking with such powers as will enable it gradually to concentrate production, standardise distribution, and bring about the amalgamation of all the various undertakings.

The competition for the new town plan of Dublin is not one that will be undertaken by the competent with any idea of profit or regarded as a business proposition. It may attract the inexperienced or the altruist, but the ultimate winner of the prize of £500 offered will not find that, after defraying his out-of-pocket expenses, the remuneration for his own time and thought will represent a living wage of any very high standard. And there is only one prize of £500, the premiated design for which "shall thereafter become the property of the Housing and Town-Planning Association of Ireland," which Association "is also willing to preserve for reference or exhibition the originals (or copies) of designs receiving honourable mention." How kind!

The position of our mediæval churches, like that of the Roman baths, as a factor of everyday life was very different to that of the present, and in a lecture at Carpenters' Hall Mr. C. Delisle Burns well described "The Use of Church Buildings in the Middle Ages." He said that the church was originally the public building devoted to the interests now represented in museums, art galleries, theatres, and even music-halls, and at present city churches were atrophied because their various functions had been transferred to those places. The ground plan showed that the churches were not designed mainly for the uses to which they are now put, and it was perfectly obvious from their size that they were not built as places in which people might sit down and listen to sermons. In the earliest churches there were neither pulpit nor benches, but when the friars came, and preaching began, the pulpit had to be put in. Religion in those times was dependent on what was done, and not on what was said, and it did not matter if the service was in Latin any more than German mattered when you went to a German opera at Covent Garden. The church offered opportunity for performances of a civic character within its walls; in the smaller villages it was used as the school; and it was also a place of dramatic entertainment, managed by the city companies or the guilds of the town. Mediæval drama was only religious in the sense that the material on which the dramatists worked was taken from the Bible; it was freely dealt with, and the lecturer instanced a Nativity play at Wakefield, in which the shepherds protested against the conditions of the wool industry of that day. Theatrical audiences, he said, were formed by long tradition of the Middle Ages, and unless you understood this you could not understand how the Elizabethan drama grew up, or how Shakespeare obtained audiences cultivated enough to understand his plays. It was an

"THE ARCHITECT" STUDENTS' SKETCHING AND MEASURING CLUB.



LITTLE MALVERN COURT.—An old Monastic House converted at the Reformation into a Country House.—From a Drawing by "Aucassin."

immense loss that in modern times, by an arbitrary division, we had separated amusement from instruction, the secular from the sacred.

The housing conditions of Dartmouth have incurred grave censure from Dr. F. St. George Mivart, inspector of the Local Government Board, who, in a condemnatory report, summarises his conclusions as follows: "It will be seen that a number of weighty questions, gravely affecting the good government and health of the borough, are awaiting consideration by the Town Council, whose supineness for many years past has permitted the gradual growth of a large number of insanitary conditions, many of them now difficult of abatement. The following points seem to me to demand in more special manner early attention by the Town Council:—

"1. To facilitate dealing with public health questions, the Town Council should proceed as soon as practicable to form a small efficient committee as their sanitary or health committee.

"2. The statutory obligations as to house inspection should at once be realised and complied with.

"3. The question of the sufficiency of housing accommodation for the working classes should be taken into serious consideration.

"4. Systematic attention should be given to courtlages and passages at present unpaved, in order to secure that these places shall be properly paved and drained.

"5. The Council should take steps to safeguard the purity of the public water supply. (Suggestions are given based upon the observations of Dr. Mivart and Mr. J. B. Hill, who report separately on the water supply.) Much more systematic attention should be given to the supervision of a complicated system.

"6. The Council should make by-laws with respect to the drainage of existing buildings.

"7. More efficient arrangements for collection and disposal of house refuse should be devised.

"8. The regulations under the Dairies, Cowsheds, and Milkshops Order should be much more strictly enforced.

"9. The Council should make use of the powers they possess to secure cleanliness and wholesome conditions in bakehouses, and generally much more attention than heretofore should be given to inspecting food prepared and sold in the district. Inspection of meat and other foods should be carried out systematically.

"10. As the existing temporary hospital for infectious diseases is not likely to be of much service without considerable further expenditure, the utility of which is more than doubtful, the Council should take into consideration the question of providing an efficient hospital in conjunction with other districts. A special committee might with advantage be formed to deal with this question.

"11. The Council should obtain the services of a trained and certificated inspector of nuisances, who should devote his whole time to the business of that office, including inspection under the Housing Regulations."

COMPETITION NEWS

Glasgow.—The Tramways Committee of the Corporation invite designs for a tramway shelter and convenience. Particulars may be obtained from their general manager.

Hythe.—Members and Licentiates of the Royal Institute of British Architects are advised that the conditions of the Hythe Concert Hall competition are not in accordance with the Institute regulations for architectural competitions, and the Competitions Committee are in correspondence with the promoters with a view to getting them amended.

London.—The London County Council have now formally invited architects to submit designs for public elementary schools at (1) Linda Street, Battersea, and (2) Billingsgate Street, Greenwich. Mr. John W. Simpson, F.R.I.B.A., will, as announced some weeks ago in our columns, act as assessor. The competition closes on September 7.

Middleton.—The Corporation invite competitive designs before July 16 for a town hall proposed to be erected at a cost not exceeding £18,000. Mr. Hastwell Grayson, M.A., F.R.I.B.A., of Liverpool, is to act as assessor. Premiums of £100, £50, and £25 are offered.

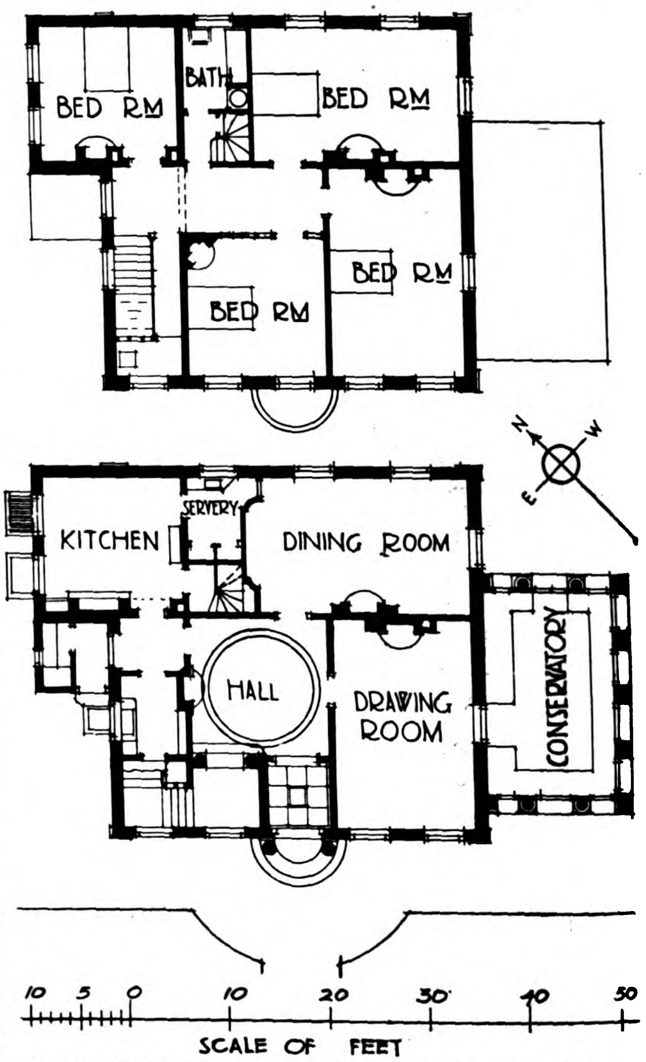
Mill Hill.—Members of the Society of Architects are requested not to take part in the Hale Grove Gardens School competition, the conditions of which are not in accordance with those approved by the Society.

The committee formed to assist in raising funds for the restoration of Whitekirk Church, N.B. (which was recently burnt by suffragettes), have issued a public appeal for subscriptions, which is signed by Lord Rosebery, chairman; the Rev. Dr. Wallace Williamson, vice-chairman; Sir G. M. Paul, hon. treasurer; and Mr. Alan L. Menzies, W.S., hon. secretary. After recalling the burning of the ancient church "by sacrilegious hands," the appeal continues as follows: "Its architectural beauty and historic associations had made it a national treasure, and an effort is now being made to carry out a reverent restoration of the building in its ancient form, and, so far as possible, with what remains of the ancient material. A sum of about £10,000 will probably be required, of which £2,000 is available from insurance. The committee believe that the piety and patriotism of Scotland will heartily respond to the present appeal, and that ere long this holy and beautiful house, trod by the pious feet of nineteen generations, will be restored to its former dignity." In terms of the report made to the heritors of Whitekirk by Sir Robert Lorimer, A.R.S.A., and Dr. Ross, with reference to the fabric of Whitekirk Church, a temporary roof is being placed over the walls of the tower to protect the burned walls from the weather, pending restoration. The architects' report specially dealt with the fine old tower, which is one of the most interesting features of the building, and pointed out that, if left unprotected, it would soon become a menace to the whole structure.

ILLUSTRATIONS.

REDCOT, BLUNDELL SANDS.

This house has been recently erected near Liverpool from the designs of Mr. R. Frank Atkinson, F.R.I.B.A.



REDCOT, BLUNDELL SANDS.—Mr. R. Frank Atkinson, F.R.I.B.A. Architect.

BLICKLING HALL, NORFOLK.

The drawing of this well-known house was made by Mr. H. St. John Harrison on his tour as holder of "The Architect" Travelling Studentship, 1913.

THE GLOBE ROOM OF THE REINDEER INN, BANBURY.

This record of the famous chimneypiece and panelling of the Reindeer Inn at Banbury will be appreciated by our readers. The old Reindeer Inn, famous during the Civil Wars as the headquarters of Cromwell, is a good example of the Jacobean style. The elaborate ceiling and panelling to the "Globe Room" are most rich and delicate in detail. Many of the buildings were ruthlessly destroyed during the Reformation. Chief among these were the church, the cross, and the castle.

OXFORD COLLEGE SERIES, NO. 136.—MANSFIELD.

Mansfield College was built from the designs of Mr. Basil Champneys, and opened in 1889. Being non-Collegiate, non-residential, and Nonconformist, it deviates from the original type of Oxford colleges on account of the change of purpose. It consists of a chapel, a hall, and common rooms, with the requisite offices, bursar's and tutor's rooms, a few bedrooms, several lecture-rooms, a large library, and a Principal's residence. In a paper read before the Royal Institute of British Architects by Mr. Edward Warren, F.S.A., the author says: "Small, long and low, stone faced, stone roofed, and thoroughly Oxonian in effect, this college, with its quiet dress of buffs and greys, falls pleasantly into place upon its pleasant site. Its Nonconformity does not extend to its exterior, which conforms admirably with Oxford." We this week illustrate the entrance tower and chapel.

ANCIENT DOMESTIC IRONWORK.—II.

(Continued from page 263.)

By J. SEYMOUR LINDSAY.

Illustrated by the Writer.

DOMESTIC lighting from the earliest time down to the beginning of the nineteenth century was greatly handicapped owing to the absence of a suitable burning oil. At the present day, with our electric light, incandescent gas, and high-grade mineral oils, it is hard to imagine one's house illuminated by unsavoury tallow-candles, rushlights, or the evil-smelling fish-oil lamps. The fish-oil lamp was not used in all localities in Great Britain, but was almost entirely restricted to districts where this form of oil was easily obtainable. They were largely used in Scotland and the islands around about by crofters, fisherfolk, and the like. They are composed of two boat-shaped cups of wrought-iron, one within the other, the inner one holding the oil and the other serving to catch any oil that syphons over the lip which accommodates the wick. Lamps of similar design are to be found in many parts of Europe dating from the fifteenth century. This form of lamp is known in Scotland as a crusie (fig. 1), in Orkney as a collie, in Cornwall as a chill (fig. 2), and in the Channel Islands as a crasset (fig. 3). An advance on this form of lamp was made by placing the oil in a closed container and the wick in a spout. Lamps on this principle were made in greater variety than the crusie, and instead of being forged out of sheet-iron, as these earlier lamps were, they were made of thin tin plates soldered together. The table-lamps were made after the common Dutch pattern with sand-weighted base (fig. 4). Other forms were pendants (fig. 5) and wall-lamps (fig. 6). An example of the latter having two wicks may be seen at the entrance of Hatchett's restaurant in Piccadilly. These

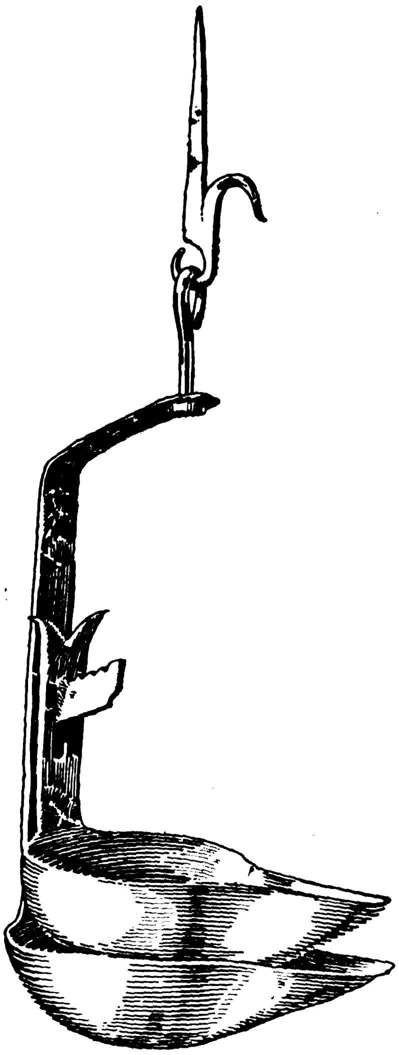


FIG. 1.

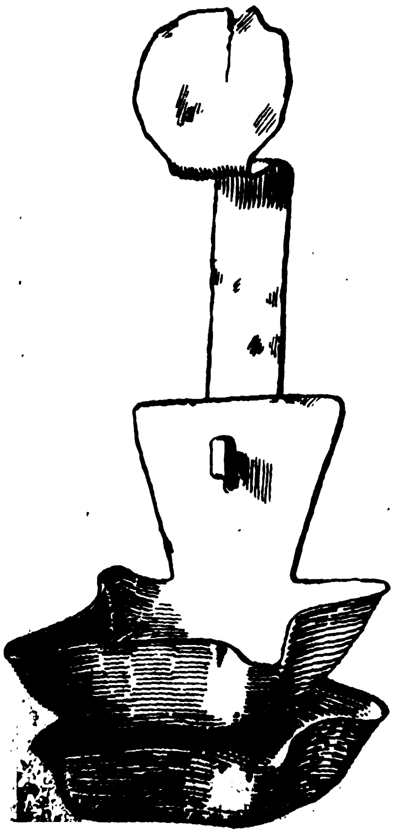


FIG. 2.

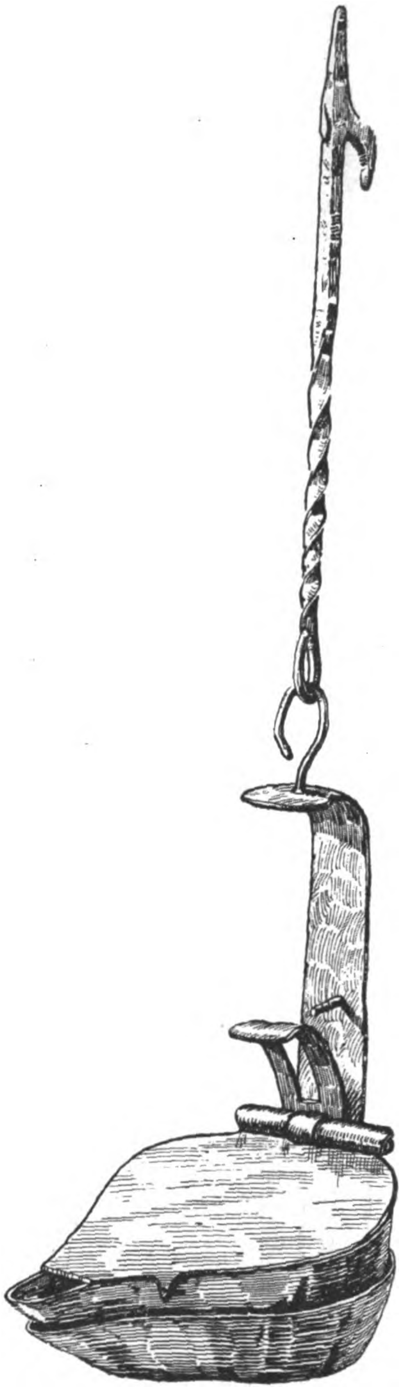


FIG. 3.

B

primitive lamps, which burned animal or vegetable oil, were used in the cottage homes, seldom in middle or upper class establishments; in these latter candles were the most common method for obtaining artificial light. The candles in use during the Middle Ages and right down to the middle of the nineteenth century were not the clear-burning candles of to-day, but were made of tallow, with sometimes beeswax added to harden the fat. The most usual method of making candles was to dip a partially peeled rush in fat time after time until it had assumed the size required; later cotton wicks were employed. The idea of casting candles in moulds originated in France, and was introduced into this country about the beginning of the sixteenth century. The mould was a thin metal tube slightly conical, so as to allow the candle to draw (fig. 7). The wick was stretched taut down the centre of the tube before the melted tallow was run in. The wicks of these early candles (both dip and moulded) required constant attention whilst burning if a steady light were desired and smell were to be avoided. For this purpose candle snuffers or candle shears, as they were called in Scotland, were introduced probably from Italy during the fifteenth century and continued to be used until the plaited wick dispensed with their services. This invention, very simple yet so efficient, was merely the introduction of a tight strand running down one side of the wick, which caused the burning end to curl down and become consumed, thus keeping the wick at a short uniform length.

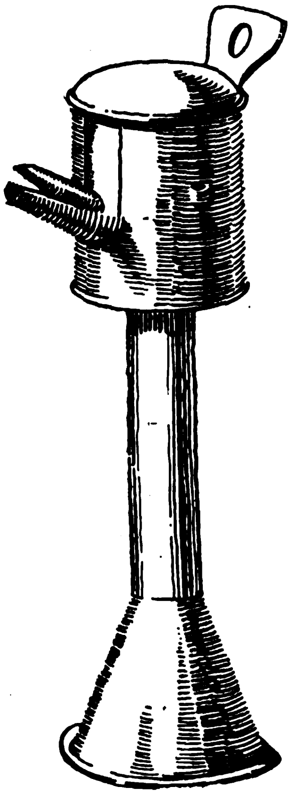


FIG. 4.

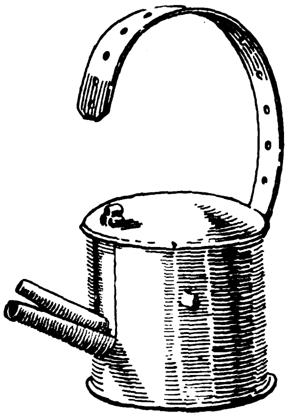


FIG. 5.

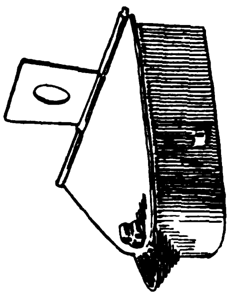


FIG. 6.

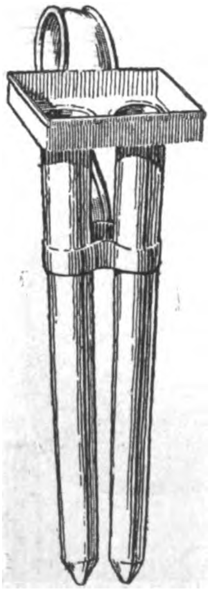


FIG. 7.

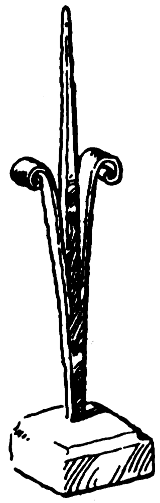


FIG. 8.

Rushlights were made in much the same way as rush candles, only instead of being dipped many times the rush was only thinly cased with fat. These from very remote times down to the first half of the nineteenth century were in common use amongst the more thrifty country folk. The earliest candle support in this country was of the pricket type; this was a metal spike upon which the candle was impaled. And the first rush-holder was a V piece of metal, which clipped the rush. Fig. 8 shows a conjunction of the two methods. Socket candlesticks were used during the latter part of the Middle Ages, and very probably before. Several examples are exhibited in the Guildhall Museum, one of which is illustrated in fig. 9. There are a number of different types of seventeenth, eighteenth, and nineteenth-century brass candle-holders, the majority of which are for table use. The most noticeable difference is that the earlier examples usually have a plain candle nozzle without a grease flange at the top; if one is provided at all it is usually about half-way down the stem (fig. 10). The brass Georgian types which have during the last few years been reproduced in large numbers are familiar to every one (fig. 11). Types of iron table candle-supports during the same periods are more restricted in type, the most common being an auxiliary candle-holder and rush-clip (fig. 12). These candle and rush-holders were also made in the form

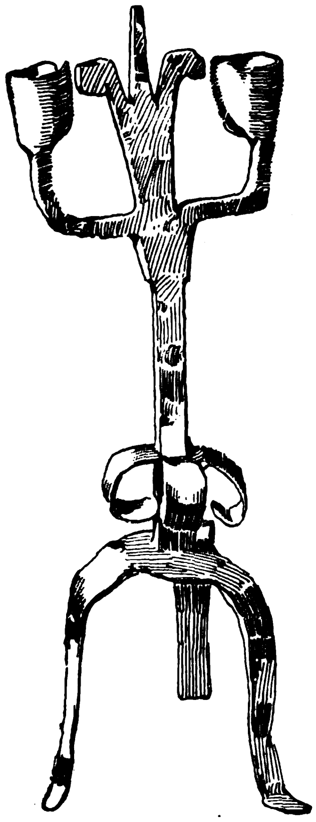


FIG. 9.

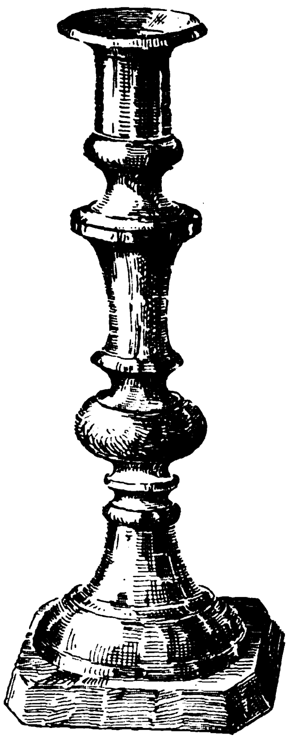


FIG. 11.

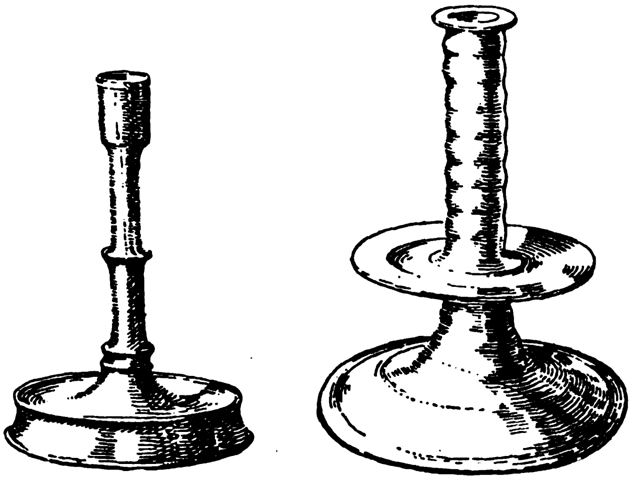

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FIG 10.

of floor standards (fig. 13) and pendants (fig. 14), but are now rarely met with outside museums or private collections. Another type of candlestick much in favour during the nineteenth century, but rapidly becoming extinct, is the kitchen table candlestick (fig. 15). The candle in this type is adjusted by a slide.

The great majority of eighteenth and nineteenth-century lanterns were constructed to burn candles, but one occasionally finds an example provided with an oil lamp. Nowadays a hand lantern is rarely numbered among the domestic equipment, but before street lighting had become so general, and when the roads were more often than not left to look after themselves, a lantern or two was very necessary to every household, especially those situated in the country. The common form of eighteenth and nineteenth-century lantern is cylindrical, with a conical top in which are perforations, sometimes protected by dormers, to give ventilation, and suspended by a ring handle, the lighted areas being either of horn or glass. The metal work was of thin tinplate ribbed for additional strength (fig. 16). Other types are hexagonal with glass panels (fig. 17). Horn lanterns are of great antiquity, but it must also be remembered that they

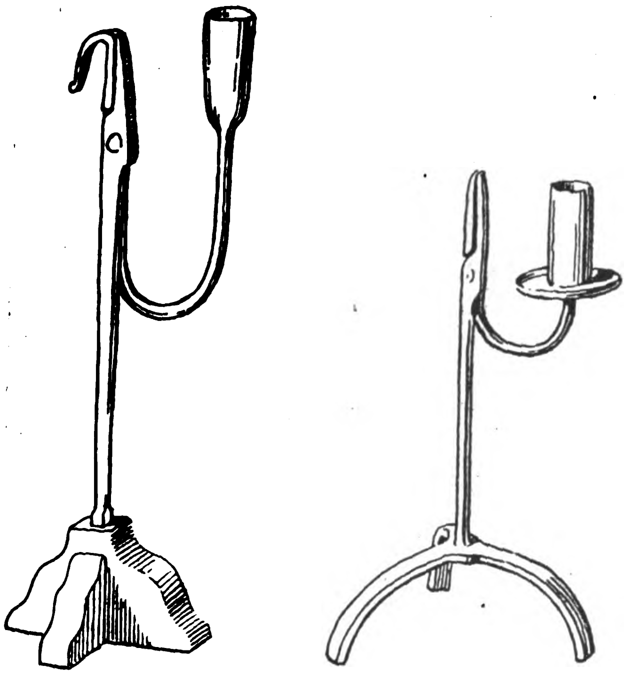
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Fig. 12

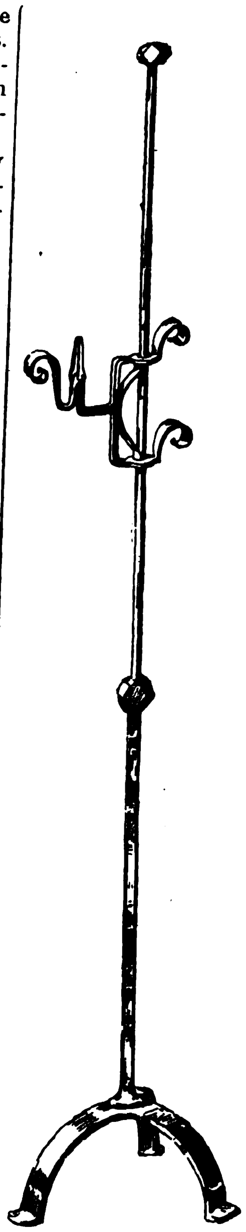
Fig. 13.

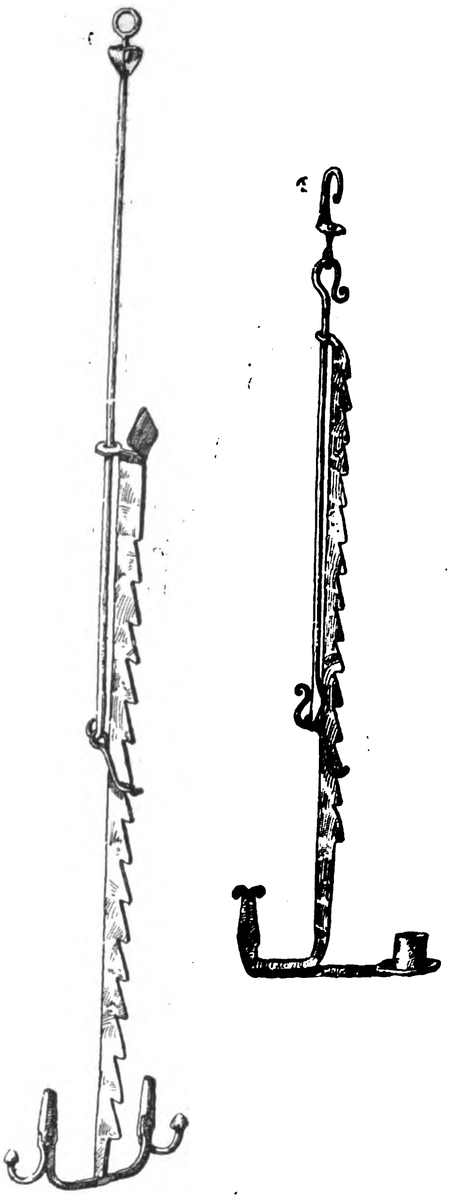
Fig. 14.

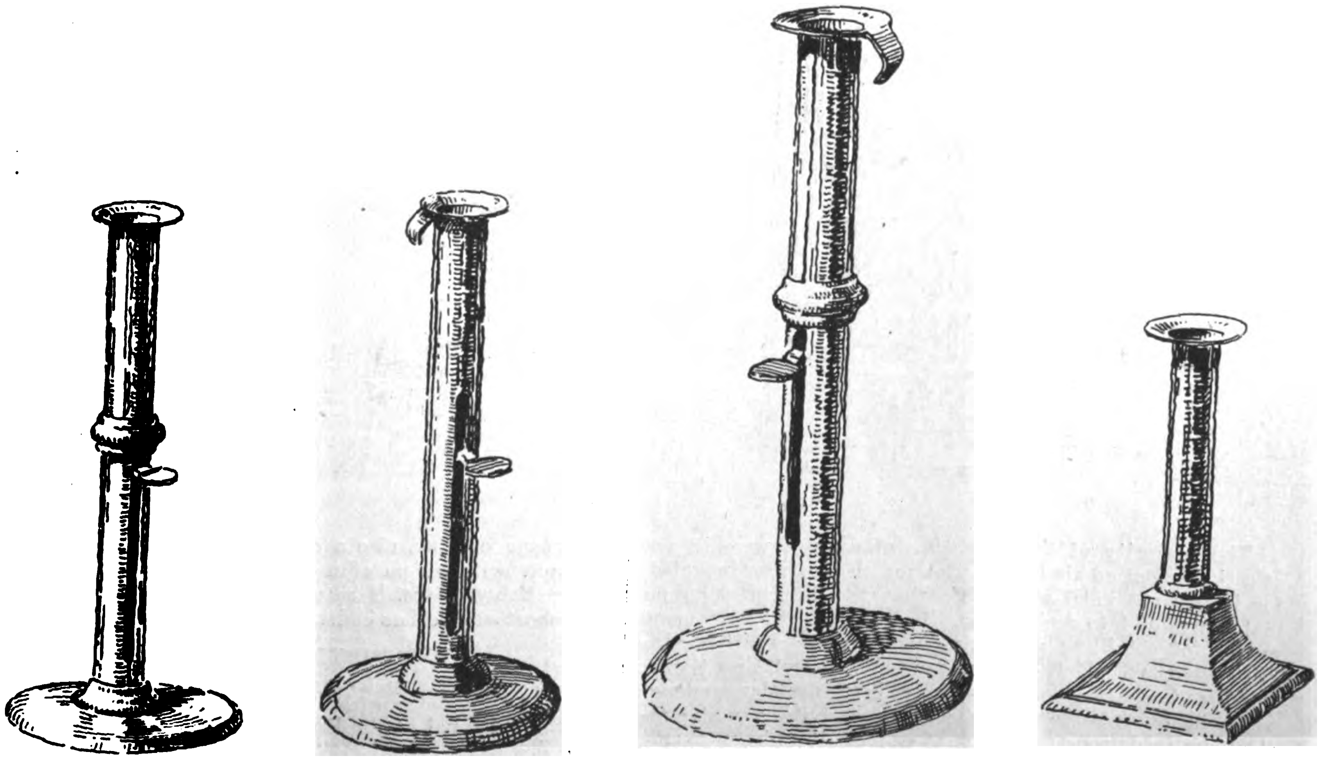
Fig. 15.

were still being supplied in the middle of the nineteenth century for farmhouse and other rough work.

Another type of lantern of comparatively modern make, though now extinct, is the wire gauze hand lantern (fig. 18). This was utilised in the cellars or back kitchens, and would be of no use in a strong wind, as the flame is only partially protected by the wire gauze.

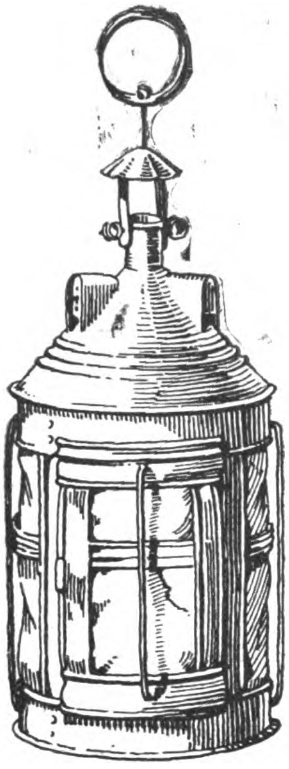

FIG. 16.

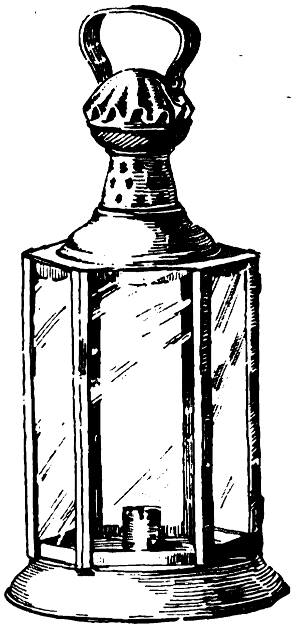

FIG. 17.

Another form of this type of lantern, an example of which is also illustrated in fig. 18, has in place of a wire gauze a thin sheet iron cylinder, which is perforated, thus allowing some light to find its way through. This example is one of some half-dozen displayed in the Brighton Museum.

up from old files, and these would have to be softened, as very highly-tempered steel is no use for the purpose. This would be accomplished when the metal was reheated for the forging of the hook or hand-piece. The tinder was usually made by scorching cotton or linen rags, although moss, thistledown, &c., were sometimes used.

Although with the flint, steel, and tinder one may produce a burning temperature, they do not actually produce flame. To do this it is necessary to continue the operation by the aid of a slip of wood, upon the ends of which is a small deposit of sulphur. The method of using these implements is as follows: The steel is held in the left hand immediately over the tinder, which is displayed in the bottom of the tinder box by removing the lid and damper, and is struck by a sharp downward movement with the flint; this blow causes minute particles of steel to break off and fall upon the tinder in an incandescent state, thus igniting the tinder, which smoulders to a red heat. The sulphur match is then placed in the glowing tinder, and after some blowing and coaxing ignites, and so the flame is produced.

The most common forms of eighteenth and nineteenth-century tinder boxes are the rectangular wooden boxes, which are divided into two compartments, one accommodating the flint, steel, and tinder, and the other the sulphur matches; and the circular metal boxes (fig. 19), which are generally fitted with a candle nozzle on the lid, and contain, in addition to the four essentials, a damper, which is a round disc of metal for extinguishing the tinder. The latter were made in large quantities by tinsmiths and journeymen tinkers, and sold for about sixpence apiece. The steels were sold separately, and at the end of the eighteenth century, according to an old trade-list, ranged in value from 8*d.* to 1*s.* 5*d.*, according to shape and finish, a few extra pence being charged for the burnished article.

There are many variations of tinder appliances and steels, both for table use and also of a convenient size, to enable them to be carried about the person. The most elaborate are the pistol strike-a-lights (fig. 20), which embody the principles of a flint lock pistol, the priming pan containing tinder in place of gunpowder, and the barrel either being dispensed with altogether or made to contain sulphur matches.

By calling to mind these primitive methods of lighting that our ancestors had to put up with, it will enable us to realise and appreciate the value of mineral oil which was introduced about the year 1853, and which not only gave to the world a cheap and efficient illuminant in the form of a burning oil, but also a cheap and very superior candle; in fact, without paraffin many of the rural districts of these isles would still be using methods that the writer of this short article has endeavoured to describe.

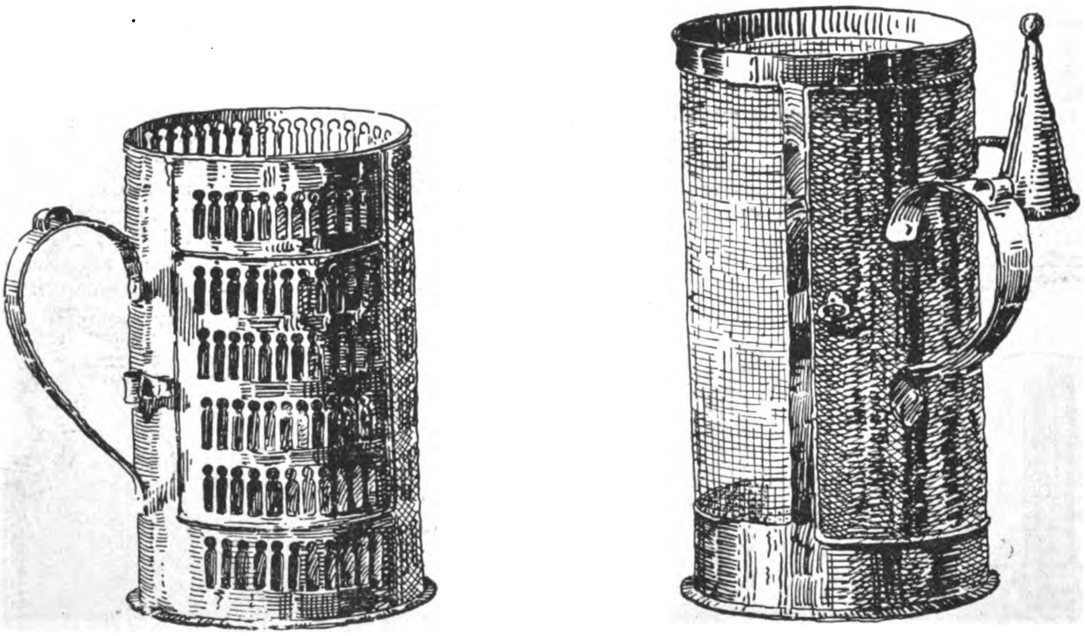

FIG. 18.

The majority of these lighting appliances were in use at a time when no kind of friction match had been invented, for it was not until about 1833 that the first phosphorous matches came into general use. Before this, the most usual method of obtaining a burning temperature was by using the tinder box, which contained a flint, a steel, and tinder. The first was a fragment of ordinary black flint large enough to be held firmly between the finger and the thumb; the steel was made in a manner that enabled it to be suspended from the hand either in the form of an oval link or a hook. Occasionally they were ornamented, but many were made

DESCRIPTION OF FIGURES.

FIG. 1.—Scotch lamp (crusie). In the writer's collection.

FIG. 2.—Cornish lamp (chill). From an engraving in vol. xxiii. "Journal of the British Archæological Association."

FIG. 3.—Jersey lamp (crasset.) In the writer's collection.

FIG. 4.—Spout lamp. In the collection in South Kensington Museum formed by the late Lady Dorothy Neville.

FIG. 5.—Spout lamp. In the collection in South Kensington Museum formed by the late Lady Dorothy Neville.

FIG. 6.—Spout lamp. In the collection in South Kensington Museum formed by the late Lady Dorothy Neville.

FIG. 7.—Candle mould. In the writer's collection.

FIG. 8.—Combined iron pricket candle-support and clip rush-holder. In the Guildhall collection.

FIG. 9.—Iron pricket and socket candlestick. In the Guildhall collection.

FIG. 13.—Floor standard rush and candle-holder. In the Sussex Archæological Association's Museum at Lewes.

FIG. 14.—Pendant rush and candle-holders. In the collection in South Kensington Museum formed by the late Lady Dorothy Neville.

FIG. 15.—Iron kitchen candlesticks. In the writer's collection.

FIG. 16.—Horn lantern. Eighteenth-nineteenth century type. In the writer's collection.

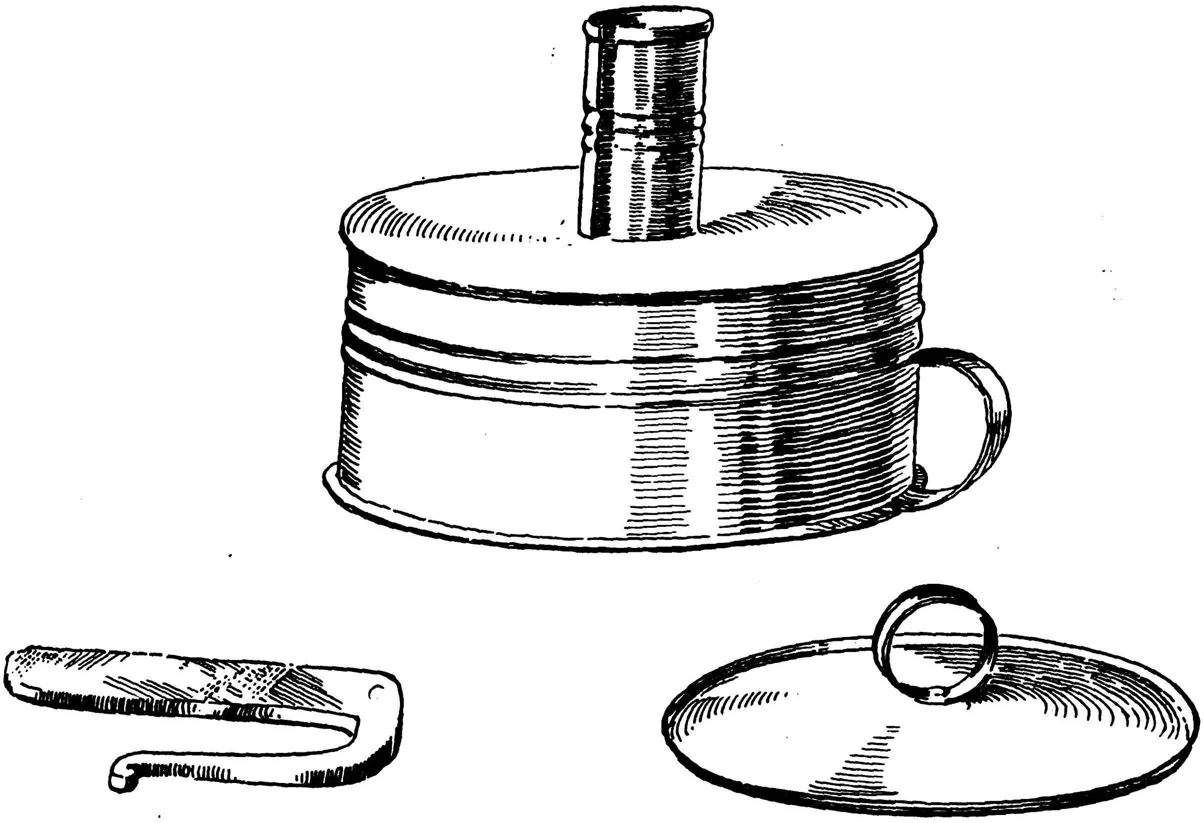

FIG. 19.

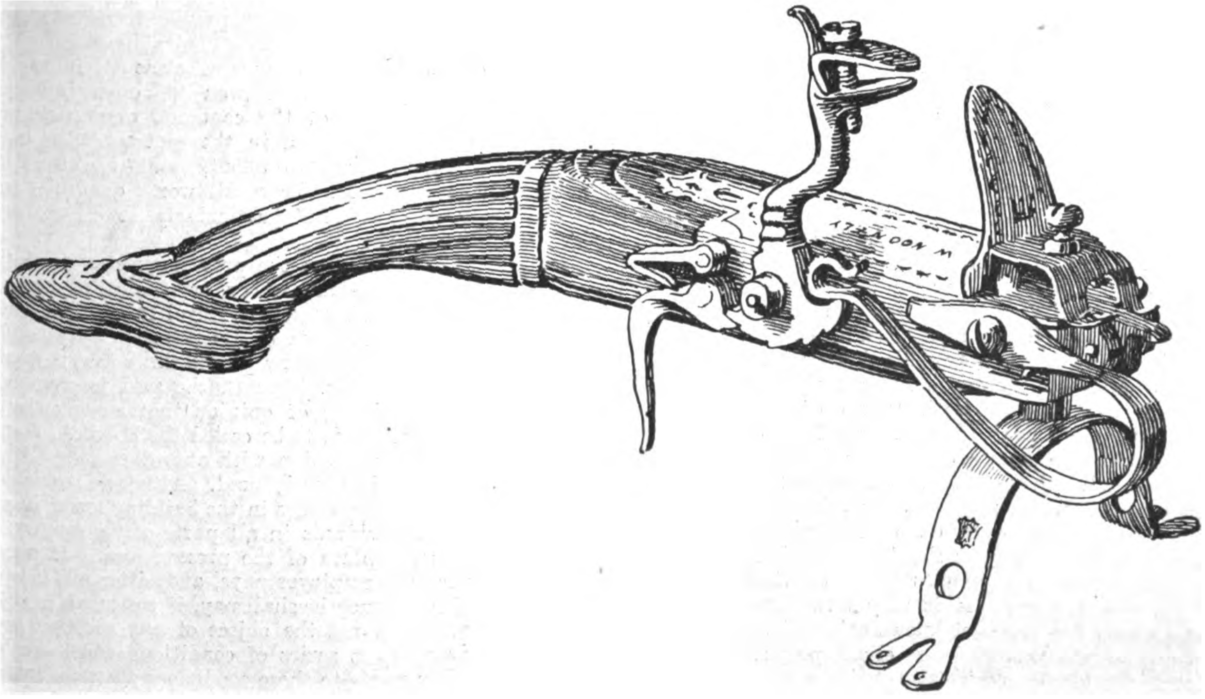

FIG. 20.

FIG. 10.—Seventeenth-century brass candlesticks. (*a*) In the Guildhall collection. (*b*) In South Kensington Museum.

FIG. 11.—Brass Georgian candlestick. Property of Mr. H. Leonard Ashford.

FIG. 12.—Combined rush and candle-holders. (*a*) In the collection in South Kensington Museum formed by the late Lady Dorothy Neville. (*b*) In the writer's collection.

FIG. 17.—Lantern. Eighteenth-nineteenth century type. In the writer's collection.

FIG. 18.—Sheet-iron hand-lantern in the Brighton Museum. Gauze hand-lantern. In the writer's collection.

FIG. 19.—Tinder-box showing steel and damper. In the writer's collection.

FIG. 20.—Pistol Strike-a-light. In the collection of M. Ch. Maurice Escaré.

(*To be continued.*)

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

An ordinary general meeting of the Royal Institute was held on Monday last, April 20, at Conduit Street, W. Mr. George Hubbard (Vice-President) occupied the chair.

The decease was announced of Mr. B. W. H. Brameld, Fellow, elected 1903, and of Mr. W. L. Carruthers, Fellow, elected 1892.

Mr. Max Clarke (F.), Vice-Chairman of the Practice Standing Committee, then read a paper entitled

Professional Practice and Conduct.

In his opening remarks he explained that the paper was chiefly addressed to the junior members of the profession with a view to helping them to avoid a few of the difficulties which now beset a man in practice.

One of the cardinal troubles arose from the fact that few clients really grasped what a building would be like, or how it will look, from an architectural drawing, although they may pretend to do so, the result being that the client wishes alterations made while the work is in progress, or even after completion. In this way considerable sums of money are wasted and friction created between architect and client. For this there seemed at present no remedy, as architects cannot as a rule have models made of their buildings, although it would be a most desirable practice. Another type of alteration was the "improvements" in design or construction thought of by the architect during the execution of the work. These are generally a fruitful source of trouble with the employer, and involve extras. More careful consideration given to the design in the early stages and less hustle will probably obviate such necessity.

The sequence in obtaining and carrying out a commission is usually as follows: (1) Receiving instructions from the client; (2) preparing preliminary sketches; (3) making an approximate estimate of the cost; (4) preparing the working drawings, some details, and the specification; (5) procuring tenders for the work; and (6) arranging a contract between the client and a builder. Mr. Max Clarke then proceeded to deal with these items seriatim, making observations and criticisms on each.

Receiving Instructions.

Under this head one naturally turned to the Schedule of Charges, as to which there has been considerable debate and difference of opinion of late. Personally, he was not in agreement with the scale of which they had heard so much. For it seemed to him inconsistent that an architect should get, say, 6⅔ per cent. on a small house or a lych gate, to cost perhaps £1,500, and the same percentage on a warehouse, factory, or the like. The much more reasonable way to charge was on a sliding scale based upon the nature of the work as well as on the cost. Such a schedule has already been proposed by the American Institute of Architects. Furthermore, he believed that the status of the particular man should be the first consideration in determining the percentage. A junior might be well paid at the rate of 2½ per cent. for a job for which members of the Institute ought to charge 10 per cent. A great difficulty was that anyone could call himself an architect, however rudimentary his knowledge; and this is further accentuated by trade firms making designs for all sorts of architectural work "free of cost" to the client, so that they may do work free from supervision. Work on these lines usually costs more in the end. Time will no doubt solve the problem. It may be that architects will combine the carrying-out of the work with the designing. This has already been done in some instances, and there seems no reason why it should not be both legitimate and successful from the client's point of view if carried out in the proper spirit. It is very unwise to embark on a scheme which the architect knows cannot be provided for the amount of money which the client proposes to spend. Architects should be most careful in counting the cost before it is too late.

The Preparation of Preliminary Sketches and the Approximate Estimate of Cost.

A man may prepare a scheme which from the architect's point of view is perfect, but does not suit the ideas of the client, and so the architect is, shall we say, vexed that he and the client do not see eye to eye, and a fresh sketch design has to be made. It may make a considerable difference in the future whether the words "a sketch design" or "sketch designs" are used, and for those who wish to put a hard-and-fast interpretation on the words used, it may lead to trouble on one side or the other.

Preparation of Working Drawings and Specifications.

The architect should be careful before doing much under this head to make an inspection of the site. Do not trust the eye that it is level. Ascertain the nature of the ground, have some trial holes dug, get the local by-laws or other requirements of the authorities, and see that as far as possible the scheme complies with them. People seem very prone to leave these matters until the last instead of making them the first, consideration. Local materials and customs should be utilised as much as possible. Most working drawings leave too much to the imagination; technical difficulties being left to be decided by the quantity surveyor, the person who gets out the details, the builder, or more generally his foreman. Some architects consider that a specification should be as general as possible. But if the architect does not decide the knotty points he ceases to have a proper grip of the work. Similarly if, as is very usual, the quantity surveyor writes the specification, the work must lose some of the individuality of the architect. The specification, whether in general or precise terms, should be clear, for it is the foreman who has to deal with it.

Procuring Tenders.

In inviting tenders the architect should try to arrange that the firms asked to compete should be about the same standard with regard to the quality of their work and ability to carry out the particular building contemplated. When tenders have been obtained from selected firms those competing should always be notified as to the amount of the various tenders and the names of their competitors and name of the firm selected to carry out the work. This tends to fair and honourable dealing between all concerned.

Arranging the Contract between Client and Builder.

In arranging a contract the various documents should, of course, agree. We hear of cases in the Law Courts where the specification says one thing and the articles of agreement another. The architect should be quite open with his clients, whether they be public or private ones; he must conceal nothing, explain every point inquired about, and if possible make notes of interviews, explanations, and the like. If quantities have been prepared it will be a question whether they should form a part of the contract. Should a lump-sum contract be preferred, the drawings and specification which, taken together, form its basis, should be most carefully prepared, as any item omitted from them will probably be claimed as "an extra" if ordered by the architect, although it may be included in the quantities. If, on the other hand, the quantities form a part of the contract, every item provided in the bill is included in the contract. The latter seems the fairest method to adopt, and to afford the smallest chance of error. In small works quantities tend to increase the cost, and particularly so if the work consists of alterations.

Opinions are divided at the present time as to whether the Institute Form of Contract, or, as it is called more properly, the form agreed between the Royal Institute of British Architects and the Institute of Builders in the year 1903, is all that it should be. Many people think that it requires thorough revision. Mr. Max Clarke said he went much further than that, being of opinion that an entirely new form should be prepared, to be called the R.I.B.A. Form of Contract, not in consultation with any other body. If this were done it would be largely used. Although it might not meet the views of some bodies in the building trade, it would be accepted by individuals in all parts of the country, and gradually take the place of the present form. It must be recollected that the employer pays, and, after all, it is only a question of how much he shall pay, if ridiculous conditions are inserted. It is not the object of any architect or employer to draw up a series of conditions which would be unfair to either party to those conditions; but the intention should be quite clear. The present form is not clear, being vague on many points and erroneous in some. He could not imagine that any architect worthy of the name would be desirous of cheating the builder, and, on the other hand, an architect does not wish the client to be cheated.

The Practice Committee have received many complaints from various parts of the country as to defects, and suggestions for the revision of various clauses in the Schedule of Conditions; and it would be most desirable that the Council should appoint a strong committee early next session to deal with the whole matter.

Mr. Max Clarke then proceeded to deal seriatim with the various clauses which in his opinion especially require attention in whole or in part. These were Nos. 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 17, 20, 21, 23, 27, 28, 29, and 30.

Dealing particularly with Clause 20 (Sub-Contractors), Mr. Max Clarke characterised it as being quite inadequate to meet the present-day requirements as to sub-contractors. It may have done very well when the Form of Contract was originally drawn up, but at the present time, when sub-contractors or "specialists" play such a large part in every contract, the clause should be drafted on entirely different lines. The whole question of the position of sub-contractors with relation to the main contract is receiving much-needed consideration.

It is quite out of the question that the general contractor should be allowed to select the specialist. If this were conceded, there would always be the risk that a specialist quoting a low price would be employed, and inferior work put in. The question of how and when the specialist is to be paid is also a most important one. The general contractor is inclined to pay the sub-contractor promptly, so as to secure what is called a "cash discount," whereas it may be very much to the advantage of the client that a portion of the sub-contractor's money should be retained for a period to meet the expense of making good possible defects.

The employment of sub-contractors and their payment has been the subject of much litigation, and an effort should be made to clear up the present uncertainties and secure a business method of dealing with such a large and important part of any building contract. The custom which prevails in the North, of a separate contract for each trade, should, at any rate, be considered.

Some contractors have an idea that six months is a sufficiently long period during which to be responsible for "defects, shrinkage, or other faults or damage," but Mr. Max Clarke considered a very much longer period should be universal. If good materials and workmanship are put in there is nothing to fear, but if the reverse is the case six months' responsibility is not nearly enough. A summer and a winter at least should pass before the liability terminates. On this point there will, no doubt, be much diversity of opinion.

Mr. Max Clarke said in conclusion that it would be noted the paper had not referred to "professional conduct." He thought it was unnecessary to say more to an audience of members of the Royal Institute of British Architects than that they should Fear God and Honour the King—their patron.

DISCUSSION.

Mr. R. L. Harrison, in moving a vote of thanks, stated that, as a lawyer, he had occasionally found the difficulties of his clients accentuated by the absence of a business equipment in architects' offices. Although they belonged to an artistic profession, the business side of it was very important. As to the Form of Contract, it did not seem to be quite recognised how quickly such a document became out of date. It was a great surprise to him that the R.I.B.A. Form was not torn into shreds years ago. The Insurance Act, for example, may render necessary all sorts of conditions and changes. The present Form required drastic alteration and revision. It was the result of conferences between the Royal Institute of British Architects and the Institute of Builders. There were many points on which each had to give way. It now had to be decided whether the Institute would put forward their own Form or whether they would try and get a document which would be approved of by the builders. His personal view was that it would be better for the Institute to prepare their own Form and bring it forward. In conclusion, Mr. Harrison gave it as his experience as a lawyer that the architect should act as the arbitrator, for he had always been impressed at the highly impartial views so taken.

Mr. Boydell Houghton said he could describe the paper in all sincerity as an admirable one and full of well-digested matter. It did not require to be an architect to appreciate how Mr. Max Clarke's advice would commend itself for its common sense and expedience. That part of the paper written for the younger men of the profession was most admirable. There was not a line which did not seem full of sound wisdom. The result of his experience was to cause him to agree with the condemnation of the R.I.B.A. Form of Contract, for it had become an anacronism, and ought to be revised. For a long time he had felt unable to understand the genesis of some of the clauses which to his mind appeared conceived in the interests of the building owner and some in the interests of the builder. The Builders' Institute would naturally be fighting in the conferences to get the best terms they could for the builders. The architects had no such interest, but were trying to arrive at a fair contract; probably they were, in consequence, not quite so keen in holding out against the builders as they should have been. Some of those provisions obviously inserted for the builders had in his experience turned out to their disadvantage. The arbitration clause was one such. The early Form was a "body-and-soul" contract, and gave the builder no chance of appeal against the architect except on a charge of fraud. Now there was an extreme on the other side. His experience was that architects acted in a judicial spirit in matters of arbitration. In only one case had he known an architect to transgress. There were several ways in which the position might be modified in dealing with disputes.

Mr. F. G. Rice (President of the Institute of Builders) remarked that at one part of the paper he came to the conclusion that that room was no place for a builder. Many of the vexed questions which arose in carrying out a job would be solved if the details were sent on to the contractor in good time. Architects must remember there were many things to do in the organisation of a job, and therefore the quicker the details were forwarded the better chance of the work being finished in time. Mr. Max Clarke had paid a tribute to the District Surveyors; these gentlemen could be extremely helpful in dealing with questions which would facilitate the execution of the job, and they ought to be consulted very early. The more simple and the more straightforward the form of contract could be made the better. The present R.I.B.A. Form had been prepared by the joint bodies representing Architecture and Building, and it did not seem to him quite fair for builders to be now excluded from assisting in any proposed form. If the builders' difficulties were put before the Institute it would better enable the latter to prepare a document free from difficulties. The arbitration clause was put in for the sake of the builders, but it was not expected to be used to the detriment of either party. The success of an arbitrator was generally thought to be measured by his inability to please either side. He agreed that the sub-contractor was necessary for carrying on building at the present day, and that the specialist sub-contractor should be selected by the architect. But in some cases it might be hard for a sub-contract to be taken away from the general contractor—as, for example, for joinery—if he were qualified to carry it out. A sub-contractor could easily cause friction unless the sub-contract defined the rights of each party. Any new form of contract should take seriously into account the sub-contractor. He considered that builders were absolutely entitled to "cash discounts" when they paid a sub-contractor promptly. If a builder was in a position to finance sub-contractors, why should he not receive discounts for the use of his money? In conclusion, he would again express a hope that the Royal Institute would accord the same privilege to the builders as to the sub-contractors, and that they would take steps to learn their difficulties, and so prepare a form of contract which would be satisfactory to all.

Mr. William Woodward remarked that the paper just read provided food for thought for both young and older men. Mr. Max Clarke's own opinion was that an entirely new Form of Contract should be prepared, to be called the R.I.B.A. Form, not in consultation with any other body. He (the speaker) believed that such a suggestion was absolutely impossible. The contract was made between the client and the builder; surely, if the contract was to work satisfactorily, the builder, of all men in the world, must be a party to its drawing-up. When tenders are invited, the first thing the builder does is to ask whether the R.I.B.A. conditions will be used, for they are the result of an effort to be fair to both sides. He was sorry to say he entirely disagreed with Mr. Max Clarke's suggestion that in future the contract should be made by one body only. He might mention without any divulging of confidence that their Council had that afternoon determined that the whole conditions of contract should be brought before the Practice Committee for revision. Builders and architects had many years ago determined upon a fair set of clauses; but these had since been upset by gentlemen in the Royal Courts of Justice, who had put their own interpretation upon them.

Sir Henry Tanner considered that quantities should form part of the contract. In the Office of Works they had their own Form of Contract, which was amended from time to time. He thought the Institute might well keep their own Form up to date. He very much doubted whether they would succeed in getting a contract as perfect as the present one had been at the time of its inception if they drew it up alone.

Mr. Blanco White pointed out that an architect, unlike other artists, had to bring businesslike methods to his work. And in matters of business one must not treat other people as though they were gentlemen. It appeared to him that anyone connected with the Royal Institute was in a safe position in the matter of a Schedule of Charges. In a Form of Contract it was necessary for an architect to make up his mind either to leave a great deal unsaid or to have a very long and full Contract. The present Form possibly fell between the two stools. Such a one was necessarily largely a matter of compromise between the architect, who has to think of the man for whom he works, and the builder. Any contract drawn up without the help of the builders must be more or less unfair, and will be very rightly distrusted by them. The present Form needed revision. He had come across home-made Forms of Contract, and these were astonishingly bad. Any architect of inexperience would do well to adhere to the R.I.B.A. Form until he knows positively he can draw up a better one himself.

Mr. Edward Greenop expressed regret that Mr. Max Clarke had dropped out of his paper all consideration of professional conduct. He would like just to mention that he disagreed with a vast deal of what had been said in it. As a member of the Practice Committee for the past thirteen years, he had heard everything that could be alleged against the R.I.B.A. Form. It possessed, at all events, the advantage of being a precedent, and cases had been fought out on it. If an architect can say the Form he is using is the Institute's, it relieves him of a vast amount of responsibility.

Mr. George Hubbard, in putting the vote of thanks to the meeting, said that at the time when the present R.I.B.A. Form of Contract was drawn up it was a very good contract. Its faults arose from altered conditions. He disagreed from Mr. Max Clarke's suggestion that the proposed Contract should be drawn up without consulting the Institute of Builders.

The vote of thanks was then passed with acclamation.

Mr. Max Clarke, in a brief reply, disclaimed any idea of suggesting that a young architect should draw up his own contract. The Form they had now got might be bad, but at the moment they possessed nothing better. He suggested the Institute should have nothing to do with the contract between the builder and his sub-contractors. The contract entered into between the contractor and the specialist was another matter.

A Special General Meeting will be held next Monday, April 27, to consider the Council's proposals for a new Charter and By-laws as printed in the Supplements issued with the last two numbers of the *Journal*.

The Annual General Meeting will be held on May 4, when the Council's Annual Report will be presented.

THE SOCIETY OF ARCHITECTS.

The thirtieth annual dinner of the Society of Architects was held on Tuesday, April 21, at the Hôtel Cecil (Victoria Hall). Mr. Percy B. Tubbs, F.R.I.B.A., President, occupied the chair.

Among the members and guests were the Right Hon. Herbert L. Samuel (President of the Local Government Board), the Right Hon. Lord Saye and Sele, Mr. Justice Bailhache, Colonel Sir T. H. Holdich, R.E., K.C.M.G. (chairman, Royal Society of Arts), Mr. A. O. Goodrich, J.P. (vice-chairman, L.C.C.), Sir Laurence Gomme, J.P. (clerk, L.C.C.), Mr. W. Edward Woolley (President, the Surveyors' Institution), Mr. George Hubbard, F.S.A., V.P.R.I.B.A., Mr. A. W. S. Cross, M.A., V.P.R.I.B.A., Judge Atherley-Jones, K.C., Mr. A. A. Hudson, K.C. (President, Tribunal of Appeal), Sir Henry Tanner, C.B., I.S.O., F.R.I.B.A., Mr. H. V. Lanchester, V.P.R.I.B.A., Mr. F. G. Rice (President, Institute of Builders), Mr. W. S. Wallis (London Master Builders' Association), Mr. A. R. Jemmett, F.R.I.B.A., Mr. R. Goulbourn Lovell, A.R.I.B.A. (hon. secretary, Beaux-Arts Committee), Mr. E. P. Wells, J.P. (President, Concrete Institute), Colonel F. S. Leslie, R.E. (Past V.P., hon. secretary), Mr. C. E. Jackson, Major R. Cecil Davies, V.D. (member of Council), Mr. R. G. Lovell, A.R.I.B.A., Mr. Max Clarke, F.R.I.B.A., and Mr. B. R. Tucker.

The Royal toasts having been proposed by the President, Mr E. C. P. Monson, F.R.I.B.A., V.P.S.A., proposed "The Houses of Parliament." Architects as architects, he said, were greatly interested in the work of Parliament—at least, that part of it which was for the good of the community, whether it be carried out by a Tory or a Liberal Government. There were, in fact, no politics in architecture. But it would be a poor world if everything done was agreeable to everyone. In the House of Lords there were many shrewd and trusty men. One of them was Lord Saye and Sele—their honorary member—who had promised to pilot the Society's Registration Bill, who had taken the very keenest interest in the Beaux-Arts atelier (which was to a very great extent a child of the Society of Architects), and who had attended all the meetings connected with it. The House of Commons had been taken as a pattern by many other countries, and it was represented that night by the President of the Local Government Board. The Town Planning Act was admittedly very good, but it would be carried out much cheaper than at present when local authorities show to land owners the iron hand in the velvet glove. The Society of Architects was founded in 1884 for the express purpose of providing for Registration, so that no one should be able to practice unless they were registered. The Society had a Bill which had been approved by the Council, but it had not been yet put before Parliament. It would only be through Registration that people could hope to get architecture which they could look up to. There were so many in this country who could practise architecture and combine such work as undertaker, builder, antique-furniture maker, and architect. That should not be. He looked forward to the day when the architect will belong to a limited profession, and every architect be well qualified. It would be to the interest of the community at large.

The Right Hon. Lord Saye and Sele, in responding for the House of Lords, confessed the belief that it would not disturb the nation if both Houses had a notice on its door, "Closed for Repairs."

The Right Hon. Herbert L. Samuel, M.P. (President of the Local Government Board), who also responded, said he had expected architects, as belonging to the class which paid super tax, would incline to the more conservative doctrines. Strangely enough, audiences which wanted Parliament to take a long rest usually consisted of people who wished for legislation for their own special behoof. The Society of Architects, who wanted the legislature to turn an eye in their direction, might rest assured that their Bill will certainly receive "careful consideration." There was a close connection between the work of the Local Government Board and the architectural profession. The action of the local authorities might exercise great influence for good or ill on the development of cities, and the action of the Board might have great influence on those authorities. He could imagine no greater pleasure than for an architect to sit down and design an ideal city—even though the scheme got no further than the illustrated papers. But unless an architect could see with the eye of imagination an ideal city he could not design a £500 shop. Such an ideal city would be vastly different to Bermondsey, Southwark, Leeds, Sheffield, or any other of our industrial towns. London may develop into something splendid; but most of the industrial towns were developing into something far short of what was even tolerable, and far short of the cities of Germany or across the Atlantic. The task before the present generation was nothing short of rebuilding such towns, so as to escape the reproaches of those who came after. The Housing and Town Planning Act was making provision for that. Two hundred and twenty schemes in various stages had been submitted by nearly 200 separate local authorities to the Local Government Board, and seventy-eight schemes covering an area of 116,000 acres of land had been approved already. Architects understood the need for town planning, and should make their influence as individuals felt locally, for anyone who was keen could accomplish an extraordinary amount. The question of the pollution of the air by smoke interested both him and those present. There would be a much better chance for the erection of buildings which would show their beauty for long periods to come if they were not covered by grime from factory chimneys. He had just appointed a strong committee, with Sir Aston Webb, R.A., representing the architects, to investigate the whole subject. Architects were fortunate in that their work did not die with the doer; it represented also the genius and characteristics of their generation. The present-day school, which was so much higher than that of Victorian days, would, he trusted, make future generations feel the greatness of the time to which they belonged.

Mr. Justice Bailhache, in proposing "The Society of Architects," said that when he was at the Bar he had had from time to time a good deal to do with architects and builders. It so happened that after he was made a Judge his very first case was one in which architects, surveyors, builders, and building owners were very much mixed up; evidence which had left him confused came from eminent architects, equally confident, on both sides on the simplest matters. The judgment he arrived at gave the liveliest dissatisfaction to all the parties. He had no notion whether it was right or wrong; but, as it was coming to the Court of Appeal, he hoped for the best. With regard to the toast of the evening, for there was nothing so interesting to us as ourselves, he might say that architects had been divided into classes—first, the class that can design very beautiful buildings to look at, and, second, the class who can design buildings suitable for the purpose for which they are intended. The audience must acquit him from making such an invidious distinction. Personally, he had come to the conclusion that a great deal of his own life had been misspent, and it was his misfortune that he had never followed the profession of architecture. He became the more convinced of this when he heard Mr. Samuel state that all architects paid super-tax, for no one could say that of the Bar. They of the grand profession of architecture had one enormous advantage in that they were producers, and added to the sum total of the wealth of the world. This barristers could hardly claim to do, for they merely transferred money from one pocket to another. There was a time when architects were producers in a still more obvious sense: when a Michel Angelo, having designed a building, would go and carve the statues to adorn it. There was nothing made by man which was more permanent than architecture, unless it be great words and thought in literature or nursery rhymes; no building in the world was as old as "Ba, Ba, Black Sheep." Architects spoke, however, to a much bigger audience; their works were in the public eye to be seen. If they were good works and worthy, people came from all parts to look at them. Architects also had to do judicial work when they sat in judgment under the arbitration clause on their own acts and deeds. No Judge sat in judgment on himself; but an architect, like an engineer, does. That fact had always been a wonder to him, and it spoke volumes. When architects judged these things they did not judge them as the legal profession did, for the latter paid some attention to the building contract, while, so far as he had been able to ascertain, the architects paid none. The building contract, when signed, had fulfilled its object, and was consigned to oblivion. The architect does what seems good in his own eyes. That was an enormous advantage over Judges. He was glad the Society were promoting a Bill which would enable them to regulate their profession, for he quite agreed that it required regulating. The Society had his fullest sympathy, and if he were in either House of Parliament it would have his enthusiastic support.

The President, Mr. Percy B. Tubbs, F.R.I.B.A., in replying to the toast of the evening, said that the thirtieth year of the Society's existence found it in a very sound and strong position for carrying on its work in the direction of the objects for which it was founded.

The Society had always prominently identified itself with architectural education, in the belief that the practice of architecture demanded that the practitioner should first of all have received a liberal education, and have been properly trained in the many subjects embraced under modern conditions of practice before he is permitted to hold himself out to the public as a person capable of practising the art.

The Society's investigation into the present system of architectural training in design in Britain had resulted in the formation of the Beaux-Arts Committee to promote improved methods of teaching design, by the establishment of architectural ateliers, carried on under the direction of diplome architects of the Ecole des Beaux-Arts. The first of these ateliers in London had been established more than a year ago, and had achieved results which had justified its promoters in undertaking the responsibility. There was evidence that there were other architectural educationists and bodies who were coming round to the same point of view in regard to the method to be adopted in teaching design, and it was rumoured that rival ateliers were to be established on similar lines in London, and possibly in other parts of the United Kingdom. This was all to the good, as it would stimulate a healthy rivalry. He was convinced that the atelier method of working was the best one, and that very soon not only architects but painters and sculptors would be working on similar lines, and that all those ateliers would be grouped around a central establishment under the control of a Ministry of Fine Art, a proposal which was already well within the field of practical politics.

The question then arose as to the position of the fully equipped architect in relation to that section of the public having dealings with architects, and how the latter could distinguish qualified from unqualified practitioners. It was a popular fallacy that everyone calling himself an architect had been properly educated and trained for that profession. That, of course, was not necessarily the case, and there were numbers of persons who used the title "architect" without the least qualification, and who thereby imposed upon the public, and frequently brought the profession into disrepute. It was to stop this kind of thing and to enable the public to distinguish between a qualified and unqualified architect that the Society of Architects advocated Statutory Registration; they had in the past promoted Bills in Parliament to that end, and at the present moment had a Registration Bill on the stocks ready to introduce into Parliament at the first favourable opportunity. The present occasion was not one on which he wished to introduce any contentious matter; they were gathered together for quite another purpose, but he felt that the members would expect him to make some statement regarding the Society's registration policy, and he could do that at once by stating that the policy of the Society in this respect had never changed during the whole thirty years of its existence, and it was not likely to do so. They were pledged to accomplish Statutory Registration, and it was their intention to continue to promote that object so long as they held those views. Some few years ago a proposal for the fusion of the Society with the R.I.B.A. in view of the promotion of a Registration Bill by that body was on the eve of being consummated. The fates, however, decreed otherwise, and within the last few months the Institute had changed its policy, and was coming forward with a suggestion for a voluntary system of registration within the Institute. It was, of course, quite competent for them to do so, but what he wished to point out was that such a scheme was not, in the opinion of the Society, one which would stop the abuse which existed in the profession in the present day, whereby any person could call himself an architect. As a matter of fact, it would accentuate it, for it was proposed that certain persons should be entitled to call themselves "chartered architects" and others "registered architects" under the ægis of the Institute. It was obvious, therefore, that the very men who, under Statutory Registration would be prevented from describing themselves as "architects," would, under the proposed scheme to which he had referred, have a monopoly of the title "architect."

However, it was a matter which the profession must decide, but so far as the Society and its members were concerned they were convinced that nothing short of Statutory Registration would meet the case. Personally, he sincerely hoped that eventually the views of the two parties might be synchronised, and some compromise effected which would enable them to agree once for all on this question of architectural politics, and enable them to devote their whole attention to other matters more congenial to them as architects.

He still thought that his suggestion made some time ago—that the Institute should look after the art of architecture and leave the Society to deal with the business side of the profession—was one which had considerable possibilities. It had met with adverse criticism from the professional Press at the time, but recently it had been brought forward by one of the leading journals as their own proposal, and he was, therefore, not alone in expressing these views. There were just one or two matters of what he would call domestic interest to which he would like to refer, because of their bearing on the profession generally. One was the establishment by the Society of an Advisory Committee, backed by a Professional Defence Fund, for the purpose of assisting members who might be involved in litigation on questions of principle affecting the whole profession. They had not yet been called upon to take up a case of this kind, but in at least one instance the fact that such facilities existed induced the opposite party to settle the matter out of Court. They also had evidence that the high standard of professional ethics which was insisted upon in the Society was of the greatest moral support to its members in enabling them successfully to resist suggestions which were sometimes made to them, he was sorry to say, by public bodies and others, such, for instance, as inviting them to compete for professional work on the basis of fees. A matter which the Society had recently taken up was an investigation of the reason for the high cost of building in London, with a view to presently endeavouring to show that the cost of building in this country is very much greater than in others, and to find the reasons for this. It was a somewhat colossal undertaking, and the inquiry was one which must extend for many months; but even if they were only able to point out the weak spots and suggest a remedy, he thought they would have accomplished a useful work. One of the problems which arose out of this matter was that connected with labour disputes and the methods adopted in this country for dealing with them, as compared with those of other countries. One difficulty was that even where the available machinery in this country had been put into force and disputes had been settled, the parties thereto had ignored the terms simply because there was no legal obligation upon them to carry them out. What was wanted, in his opinion, was statutory powers to make a breach of the terms a penal one.

Colonel F. S. Leslie, R.E. (Ret.), Past Vice-President, proposed "The Guests."

Mr. A. O. Goodrich, J.P. (Vice-Chairman of the London County Council), and Mr. W. Edward Wooley (President of the Surveyors' Institution) replied.

During the evening an entertainment was given by Miss Nellie Innes, Professor R. Anders, Mr. Sivori Levey, and Miss Edith Buchanan (at the piano).

THE ARBITRATION CLAUSE.*

By W. Valentine Ball, M.A., Barrister-at-Law.

(Concluded from last week.)

Grounds for Objecting to an Arbitrator.

It does not follow that because a man is named as arbitrator in a contract he will necessarily be allowed to act, or that the parties will necessarily be compelled to submit their disputes to him. Circumstances may arise which render it inequitable that he should act. He may have become biassed by his position, as where for instance (to take an extreme case), he were to enter into partnership with one of the parties to the contract. I do not propose to consider all the various grounds upon which an arbitrator may be objected to, but there is one aspect of the matter which it is important to deal with.

A question has arisen in many recent cases whether a person employed and paid by one party to a contract can properly act as arbitrator in the settlement of disputes. This point is hardly germane to a discussion of Clause 32 of the R.I.B.A. Form, because it is there impliedly, if not expressly, declared that the arbitrator shall be an independent person. Thus (as we have already seen when perusing the clause), disputes are referred "to the arbitration and the final decision of A. B. or, in the event of his death, or unwillingness or inability to act, of C. D., or in the event of his death or unwillingness or inability to act, of a person to be appointed on the request of either party by the President for the time being of the Royal Institute of British Architects, and the award of such arbitrator shall be final and binding on the parties." It is manifest that the architect—that is to say, the architect acting under the contract—could hardly be the arbitrator within the meaning of this clause. If he were, he might be placed in the absurd and anomalous position of having to review his own decisions.

But many of you may have clients who are groaning under an arbitration clause. Thus, in contracts with local authorities it not infrequently happens that disputes are all referred to the county or borough surveyor, and the builder or contractor may very well take exception to his acting when the time comes. I need hardly point out that he cannot be objected to merely because he is in the employment of and is paid by one party.

It has long been settled law that this does not disqualify him. But the cases go further. They show that even where a man may possibly be biassed or has expressly declared himself on a matter he is not necessarily disqualified. In Jackson *v.* Barry Railway Company (1893, 1 Ch., 238) objection was taken to an engineer of a railway company acting in the capacity of arbitrator, because in a preliminary correspondence he had expressed a view adverse to the interests of the contractor. This fact did not induce the Court of Appeal to say that he was unfit to act. Lord Justice Bowen said: "To an adjudication in such a peculiar reference the engineer cannot be expected nor was it intended that he should come with a mind free from the human weakness of a preconceived opinion. The perfectly open judgment, the absence of all previously formed or pronounced views—which in an ordinary arbitrator are natural and to be looked for—neither party to the contract proposed to exact from the arbitrator of their choice. They knew well that he possibly or probably must be committed to the prior view of his own, and that he might not be impartial in the ordinary sense of the word. What they relied on was his professional honour, his practice, his intelligence, and the contractor certainly had a right to demand that whatever views the engineer might have formed he would be ready to listen to argument, and at the last moment to determine as fairly as he could, after all had been said and heard."

The doctrine above enunciated has been considerably modified by certain recent decisions. Thus, it has been held by various judges that a reference to the surveyor or architect of one party will not be enforced: (*a*) if the question to be decided is one which cannot be properly determined without the cross-examination of the surveyor (Freeman *v.* Chester Rural District Council, 1911, 1 K.B., 783); (*b*) if the dispute be as to the existence and terms of an agreement made between the surveyor (acting for the building owner) and the contractor (Aird *v.* Bristol Corporation, 1912, 28 T.L.R., 278); (*c*) if the question is whether the surveyor did or did not act unreasonably—e.g., by making alterations and amendments in drawings, by delaying the delivery of drawings and materials, and by rejecting suitable material (Blackwell *v.* Derby Corporation, 1909, 75 J.P., 129); (*d*) if, although acting honestly, the surveyor has lost his independence by conferring with and accepting advice from one party to the contract (Roberts *v.* Hickman, 2 H.B.C., 3rd Supplement, p. 10); (*e*) the contractor will not be compelled to submit if the matter in issue is an unseemly personal dispute raising a vindictive feeling between the engineer and the contractor, and the engineer has so strongly expressed his view that it amounts to a prejudgment (Nuttall *v.* Manchester Corporation, 1893, 8 T.L.R., 513).

I think it may be said that in the above cases the Courts have gone as far as they are likely to go in the direction of relieving contractors from the arbitration clause. I heard of the following attempt to extend the doctrine. A dispute was on foot between a contractor for the erection of a county hospital and the local authority. The contractor had made a large claim for extras, and the architect had quoted the county surveyor, who was named as arbitrator in the contract, as having said that in allowing for extras he had already taken the contractor's claim into account. In these circumstances the contractor sought to have the reference to the surveyor set aside on the ground that the surveyor had already committed himself to a view of the matter. He failed in his attempt.

It may seem odd that a reference should in any case be ordered to proceed when one party takes serious objection to the arbitrator, but when considering this class of case it is well to remember that the parties have voluntarily bound themselves to submit disputes to a certain person. In the stress of competition your builder or contractor makes a tender and rushes blindly in without considering the arbitration or any other clause. He has only himself to blame if, when disputes arise, the judge who is to consider them is not altogether to his liking.

Conduct of the Arbitrator.

Having said thus much about the arbitration clause, I should like to devote the rest of my time to the conduct of an arbitrator. Perhaps a few hints on this matter from the point of view of a lawyer may be found useful. The function of an arbitrator is similar to that of every judge. He is there to "hear and determine." *Audi alteram partem* is an injunction which he should keep constantly in mind. One side is all very well until you hear the other. The evidence which a witness gives in chief may be fairly convincing until you hear what he says in cross-examination. The case for the plaintiff may sound unanswerable as presented by counsel in his opening speech; but it is essential for the arbitrator to keep an open mind. Let me remind you of what one of the greatest chancellors of all time said concerning the duty of a judge. "Judges," wrote Lord Bacon, in his essay entitled "Of Judicature," "ought to be more learned than witty, more reverend than plausible, and more advised than confident." And again, "Patience and gravity of hearing is an essential part of justice, and an overspeaking judge is no well-tuned cymbal. . . . The parts of a judge in hearing are four—to direct the evidence; to moderate length, repetition, or impertinency of speech; to recapitulate, select, and collate the material points of that which hath been said; and to give the rule of sentence."

It would be almost impossible to state the whole duty of a judge in smaller compass. .

There is much to be learned from watching the cross-examination of the witnesses. Close attention to the

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*** A Paper read before the Society of Architects on April 16.**

demeanour and unconscious actions of the man in the box may help to elicit the truth. Anyone who ever attended the County Court at Whitechapel or Bloomsbury in the lifetime of Judge Bacon must have been struck by the fact that while a witness was in the box the learned judge never took his eyes off him. Even when, in the days of the insanitary oath, the plaintiff or defendant was in the act of kissing the book, the watchful eye was always open. "The witness has not been sworn," the judge would say, "he only kissed his thumb." It was by dint of this minute observation that justice could be done in a court where perjury was often regarded by litigants as quite a minor offence.

The power of being able to keep an open mind until all that can be said has been said, is also an integral part of the judicial faculty. A celebrated judge (who is still living) was once chaffed for having changed his mind during the course of an argument. His only comment was, "I rejoice to think that I am not so old as to be incapable of being convinced by argument."

The relative importance of the evidence given by various witnesses must of course be decided on the spot. It is well, however, to beware of the witness who is too glib, and of the expert witness who is obviously trying to fight the case of those on whose behalf he is appearing.

The architect sitting as arbitrator must of necessity use his own judgment in deciding technical matters. He has scarcely any need to rely on the evidence of experts, although it is very desirable that he should give due weight to their opinions. He must not, however, refuse to hear evidence and argument. I know of a case in which an engineer had been asked to settle a dispute about a motor-car. After hearing counsel for the plaintiff, he asked to see the vehicle in question, which was brought to a convenient place outside the Court. Having seen the car, the arbitrator said: "I have made up my mind about this matter, and do not want to hear further evidence or argument." An award made in such circumstances could be set aside as not having been made by the arbitrator in the proper discharge of his duty.

Consulting a Lawyer.

Arbitration is sometimes resorted to as a means of adjusting disputes without invoking the assistance of the lawyer. There are many arbitration cases where legal aid can well be dispensed with; but the arbitrator should remember that he is entitled to consult his solicitor either for the purpose of drawing up his award or in connection with other matters arising during the proceedings. For instance, suppose a question arose during the hearing of a case as to whether a particular document was admissible in evidence, the arbitrator might take the opportunity during an adjournment of consulting his solicitor on the point. Again, for the purpose of drawing up his award, the arbitrator will do well to consult his solicitor. I had a case within my own personal experience where the arbitrator, an eminent engineer, was accompanied by his solicitor throughout the proceedings. I should say, however, that he asked the consent of the parties beforehand. There should, however, be a limit to the delegation of his duties by an arbitrator. The parties before him want his opinion, not that of a lawyer. I know of one case where the arbitrator, having procured a copy of the transcript of the shorthand note of the proceedings, submitted the whole matter to a member of the Bar, to draw up his award for him. That was not, in my opinion, a proper discharge of his duty, although I do not know by what method it could be attacked, seeing that the award, as finally issued, was duly signed by the arbitrator, and otherwise in order.

Power to State a Special Case.

It is well to remember that it is the right and privilege of every arbitrator to state his award in the form of a special case for the opinion of the Court. Thus, if a difficult question of law arises, the parties may be willing that the arbitrator shall decide it. In that event he ought to decide it to the best of his ability. He must, however, if so requested by one or other of the parties, state his award in such a way that the Court will decide the point of law and allow the award to go in one event for the plaintiff and in the other for the defendant. It would also seem that if the arbitrator himself desires to have the assistance of the Court to decide a point of law, he may state his award in the form of a special case on his own mere motion.

Costs.

The general rule in litigation being that the unsuccessful party must pay the costs, the principle may well be adopted by an architect sitting as arbitrator. *Væ victis* might almost be said to be a maxim of the law. But there is a rule of procedure with which arbitrators do not always appear to be familiar, and of which I should like to remind you. It is that if the defendant to an action pays into Court more than the amount recovered he gets the costs incurred after the date of payment in. Again, if before action brought the defendant has tendered enough or more than enough to cover the claim, and the tender has been refused, the defendant gets the whole costs of suit. So, when acting as arbitrator, you should take into account any firm offer that the defendant may have made before the proceedings were commenced. For instance, suppose a builder claims £1,000 for extras, and before the reference the building owner makes a firm offer of or tenders £500. Having considered the case in all its bearings you come to the conclusion that £500 or even less is all that is due. You would then be fully justified in making the builder pay the whole cost of the proceedings.

Fees.

A brief word upon the sordid but not wholly unimportant question of fees. The arbitrator may fix his own fee if nothing is said about the matter when he undertakes the reference, but subject to this, that if he makes an exorbitant charge it can be recovered from him by action (Fernley *v.* Branson, 20 L.J.Q.B. 178). It is well, however, to give the parties some notion beforehand as to what the cost will be; so much for the retainer, so much for a view of the *locus in quo*, and so much *per diem* while the hearing lasts.

As to the amount to be charged I need not say much. Suffice it that fees run high, and properly so, for an arbitration takes up all the working hours of the day and interferes considerably with the practice of a profession. That the Judges recognise this fact appears from the case of Mason *v.* Lovatt, 23 T.L.R. 486.

In that case a quantity surveyor had acted as arbitrator in a dispute between a firm of plumbers and a builder. The reference lasted for twenty-two days, and the arbitrator was subsequently employed for thirteen days in considering the case. He also took the advice of a solicitor and counsel on certain points of law. He charged £527 10*s*., which included ten guineas a day for thirty-five days, and £110 6*s*. for fees paid for legal advice. The District Registrar, disregarding the evidence of surveyors in good position, held that five guineas a day was sufficient, and reduced the above amount by £283 0*s*. 6*d*. The Court of Appeal set this judgment aside. Dealing with the surveyor's remuneration, Lord Justice Moulton said: "The evidence is all one way, that the price charged by him was fair for a person belonging to his profession and occupying the position which he occupied in that profession. The District Registrar was not entitled to set that evidence aside. The true standard, in my opinion, of what should be paid in such a case is what a fair-minded man in the position of the referee would have required if a bargain had been freely made beforehand. In this case, there is no ground for supposing the referee has charged more than would have been required by a fair-minded man in a free bargain."

There is one satisfactory point about fees, and that is that the arbitrator should have but little difficulty in recovering them. He is entitled to keep back his award until the fees are paid. As a rule, he saddles the party who is unsuccessful with payment of his fees, making them part of the costs.

LONDON BEFORE THE FIRE.*

By W. W. JENKINSON (Fellow).

(Concluded from last week.)

IN the little church of S. Peter ad Vincula were buried many headless bodies: the two Queens Anne Boleyn and Katherine Howard; the unhappy "Queen Jane" (to give her the title of a day) and her husband; Thomas Cromwell; James Duke of Monmouth; John Fisher; and, not least, Sir Thomas More, who met his fate with a blithe heart and a jest on his lips. Lord Herbert of Cherbury tells the story of the execution in 1541 of that staunch old dame the Countess of Salisbury, who, when "commanded to lay her head on the block, refused, saying 'So should traitors do, and I am none.' . . . So, turning her grey head every way, Shee bid him if he would have her head, to get it as he could: so that he was constrained to fetch it off slovenly."

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* **Abstract of a Paper read at the ordinary general meeting of the Surveyors' Institution on Monday, March 30.**

To be "committed to the Tower" meant in so many cases a tragedy that it is refreshing to hear of a joyful exit. If our visit had happened to be on a certain day in the year 1558 we might have left the Tower and pursued our way in cheerful company amidst the plaudits of an excited and happy populace; for Elizabeth the Queen, no longer Princess Elizabeth, prisoner, was starting on her Royal progress through the city of Westminster, there to be crowned. We can follow the route of the Queen without joining the throng, and linger as we list. We pass through the Minories and enter the City by Aldgate, remembering that Chaucer was once lodged there. John Stow's house was near by, and he tells us of a summary execution in the street, the unfortunate victim being innocent of any real offence, and given no time to prove his innocence.

"I heard the words of the prisoner, for he was executed upon the pavement of my door."

John Stow "died Apr. 5, 1605, and is buried at the Upper end of the North Isle of the Quire of Saint Andrew, Undershaft."

This church escaped the Fire, and the memorial to Stow is worth a pilgrimage. Here, at the corner of St. Mary Axe, so-called from an ancient church S. Mary-at-the-Axe, Cornhill formerly commenced, and at the corner of Gracechurch, or more properly Grasschurch, Street, from the grass market, there stood the Leadenhall built in 1419 as a gift to the City by Simon Eyre. He arranged "that in the midst thereof, there should be a market-place kept every Munday for Leather where the Shoemakers of London, for their more ease might buy of the Tanners without seeking any furthur."

During the Civil War the place was a storehouse for arms, and in 1648 the apprentices "mastered the magazine, crying out for God and King Charles."

At this point we must diverge a little to the northward towards Bishopsgate. Heywood in his play of "Edward IV." makes Sir John Crosby say:

> "In Bishopsgate Street a poor house have I built
> And, as my name, have call'd it Crosby House."

Stow says built "of stone and timber verie large and beautifull." It occupied a spacious area, but only the banqueting hall remained to our own time, and may still be seen in the place of its exile at Chelsea. Crosby was knighted in 1471, the year that Henry VI. died, and he enjoyed his home for only four years after, dying in 1475.

The priory and church of St. Helen's was in the rear of Crosby House, and the church still remains, one of the few ancient Gothic churches that escaped the Fire. But, as in Stow's time, so now, it still "wanteth such a steeple as Sir Thomas Gresham promised to have builded in recompense of ground in their church filled up with his monument."

It was in the vicinity of Shoreditch about 1576 or 1577 that the first playhouses were erected. The following from John Northbrook's treatise (1577) is one of the earliest allusions to them.

"Doe you speake against those places also which are made uppe and builded for such playes and enterludes as 'The Theatre' and 'Curtaine'? . . . for I am persuaded that Satan hath not a more speedie way and fitter school to worke and teach his desire."

There are interesting references to "The Fortune" Theatre, built by Henslowe and Alleyn in Golden Lane, Cripplegate, in 1599. There were difficulties because of an order of the Privy Council "to restrain the excessive number of Plaie-howses," but the Queen evidently had a say in the matter, "hir matie beinge pleased at sumtimes to take delight and recreacon in the sight and hearinge" of plays, and the building was allowed to proceed.

In the Henslowe Papers the contract for building "The Fortune" has been preserved. It provides that in all important details the new theatre was to be an exact copy of "The Globe." Amongst other things: "A Stadge and Tyreing howse to be made, erected and sett up wthin the saide fframe wth a shadowe or cover over the saide stadge . . . contryved and fashioned like unto the stadge of the saide Plaie howse called The Globe."

The contract was with "Peter Streete, Carpenter," who had built "The Globe," and it would appear that an architect or surveyor was considered unnecessary, and that plans and specifications were superfluous; £440 was the contract price, but there were evidently heavy expenses in fitting up not included in this sum. At this time Alleyn was only a leaseholder, but he bought the freehold in 1610.

In 1621 the theatre was burnt down. Alleyn at once prepared to rebuild it, and devised the novel scheme of creating ground rent and raising building capital by dividing the property into twenty-four shares. A separate lease was granted for each share at a ground rent of £5 6*s*. 11d. for a term of fifty-one years, each lessee paying down a contribution of £41 13*s*. 4*d*. towards the rebuilding. Alleyn thus obtained a ground rent of £128 6*s*. per annum (worth in present money perhaps something over £600) and a sum of £1,000 in cash for his building. It should be noted that only three years before the Fire the playhouse had been let at £200 a year "and also two rundletts of wyne the one sack and the other Clarett of ten shillings a peece price to be delivered at the feast of Christmas yearely."

Alleyn made over the property to the Dulwich trustees, but its later career could not have been profitable to the twenty-four shareholders, especially after the closing of the theatres in 1642.

In 1660 the Court of Assistants ordered the sale of the materials in consequence of their inability to find a tenant, notwithstanding their "utmost endeavours . . . by posting of bills in the Citie of London and putting it into the newes bookes."

In the *Mercurius Politicus*, February 1661, there was an advertisement "The Fortune play-house—with the ground thereto belonging is to be let to be built upon, where 23 tenements may be erected with gardens and a street may be cut through."

The mention of Edward Alleyn suggests the great act of his life, the erection and endowment of Dulwich College. In the builder's contract, an interesting specimen of Alleyn's method, a minute and detailed description is given of every part of the buildings in lieu of plans or specification, but the contractor, who was termed "bricklayer," was to provide a "plott," *i.e.* ground plan. The bricks and other materials were provided by Alleyn, and the price paid to the builder for the work was at the rate of 40*s*. per rod.

In the year 1565 the site at the junction of Threadneedle Street and Cornhill, a triangular area then covered with houses, was purchased by the City for upwards of £3,532, and the buildings "solde for 478 pound to such persons as should take and carry them thence, and then possession thereof was given to Sir Thomas Gresham, Knight, thereupon to build a Bursse, or place for marchants to assemble in, at his owne proper charge." "A glorious Burse," Lyly calls it. It was the Queen herself at the opening in 1570 that dubbed it "Royal."

The Exchange became a great place for shopping, there being a covered arcade called "The Pawne."

There is a curious and scarce little book without either author's name or date, but written cir. 1540, entitled: "The Boke for to Lerne a man to be wyse in buyldyng of his howse for the helthe of body and to hold quyetnes for the helth of his soule."

These are a few of the author's injunctions: "The house must be 'commodious and pleasaunt. He must dwelle at elbowe rome . . . having water for to washe and wrynge to bake and to brewe.' Everything must be 'desent and fayre to the iye not onely within the precynct of the place . . . but also it may be placable to the eyes of all men to see and behold. . . . The builder of it should have a respect to his posteryte.'"

The writer adds directions as to what we term sanitary arrangements, calculated to shock the modern inspector.

An instance has already been given of Thomas Cromwell's high-handed dealing with land adjoining his own, possession of which he desired. Here is a case about a hundred years later showing how some kind of compensation was awarded where property was required for a public improvement:—

"Because the surveyors brought in that the greatest part of the houses in the Parishes of S. Faith and S. Gregorie are within the wall of S. Paul's Churchyard . . . to the nuisance and detriment of the Church and might in reason and justice be ordered to be pull'd down . . . the Sub-Committee should call before them such owners and inhabitants and deal with them effectually for some annual contribution . . . and make some recompense for the loss which would fall upon them by the taking down of their dwellings."

As we have already seen, the leasehold system was in force in Elizabeth's time, but we do not hear much of the building lease, especially for ninety-nine years as we know it.

Here is a case, after the Restoration, of a building lease, but only for forty-one years, for the erection of the new "Drury Lane" Theatre:—

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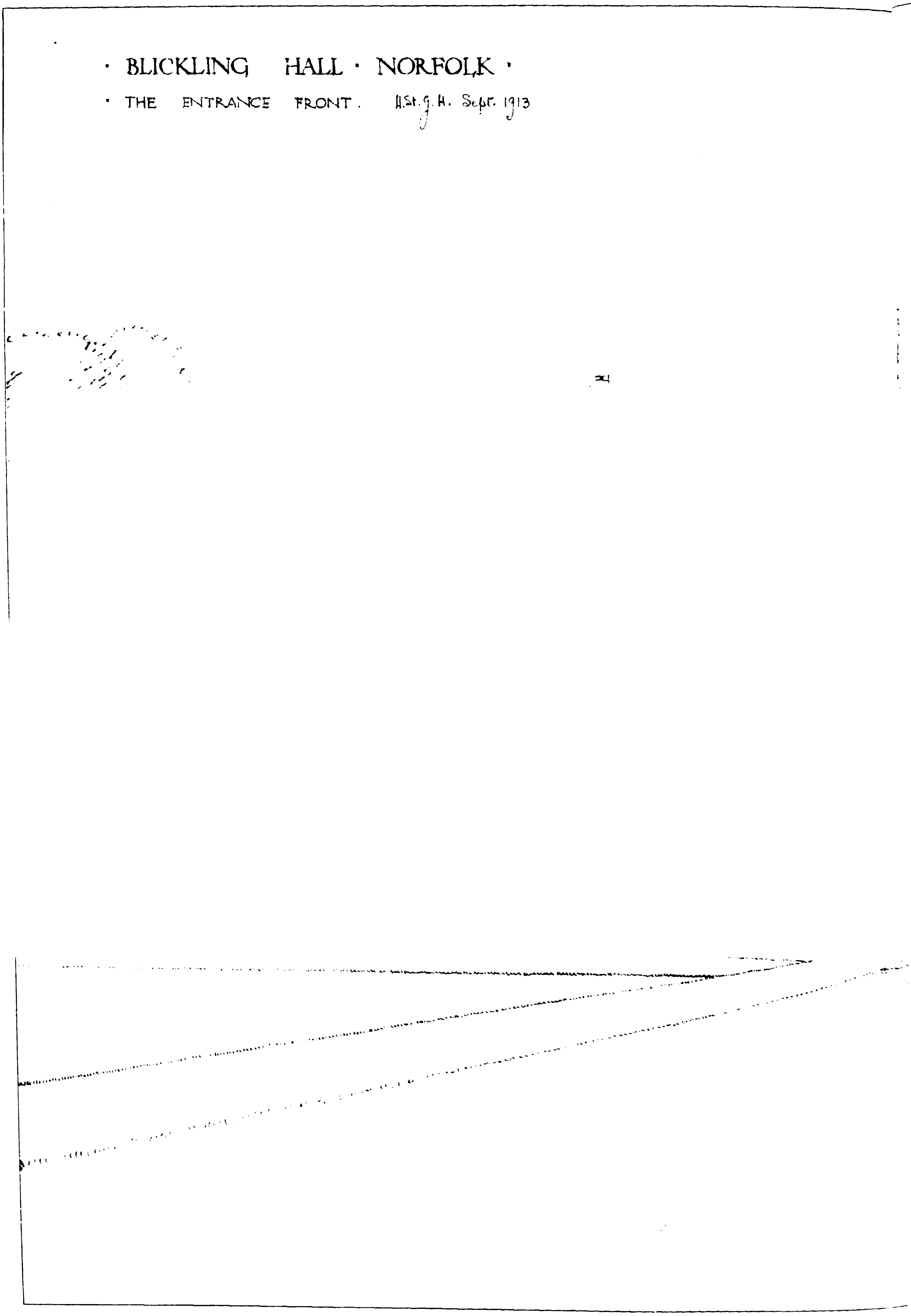
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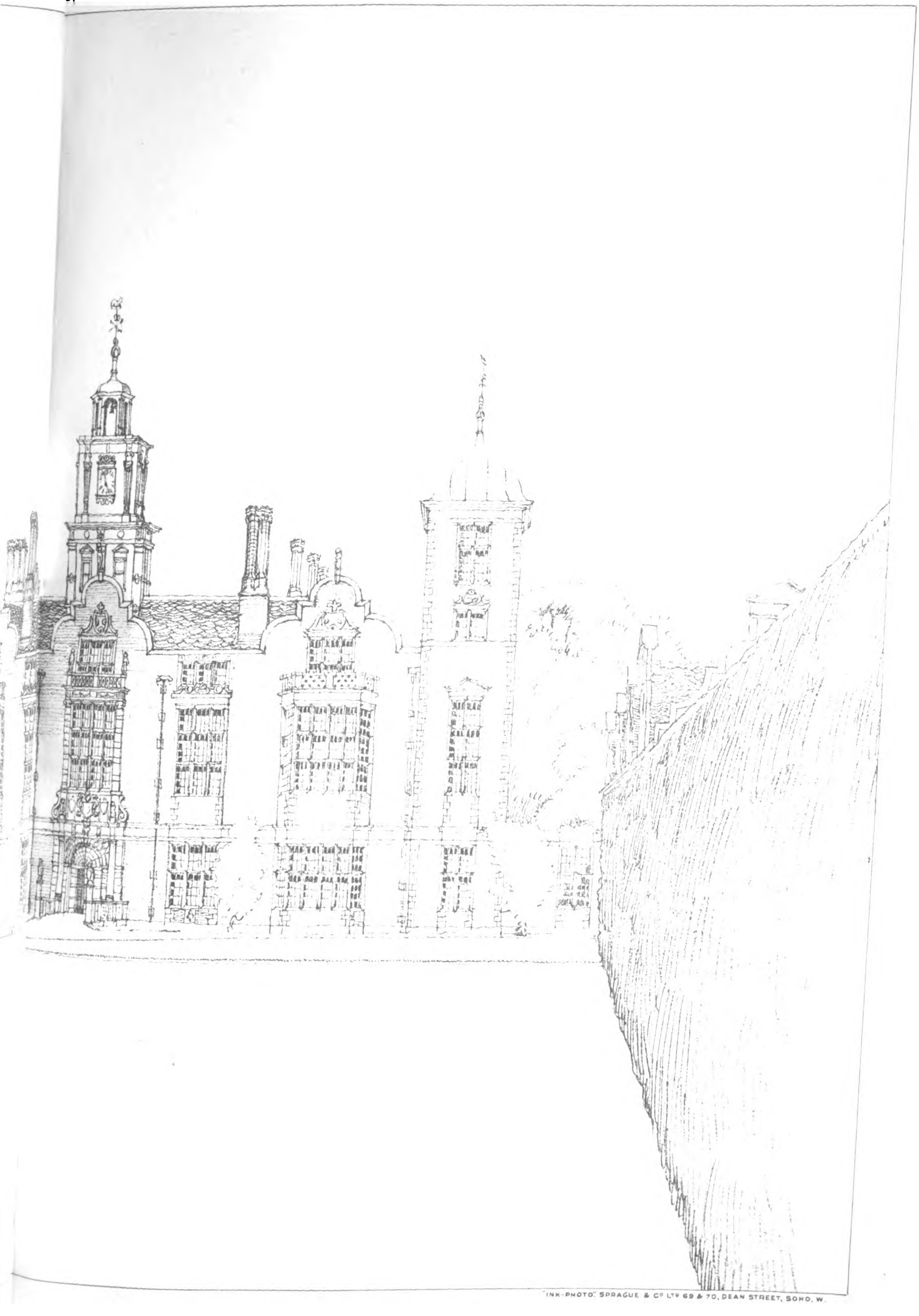
· THE ENTRANCE FRONT . H.St.G.H. Sept. 1913

"THE ARCHITECT" TRAVE

From a drawing by Mr.



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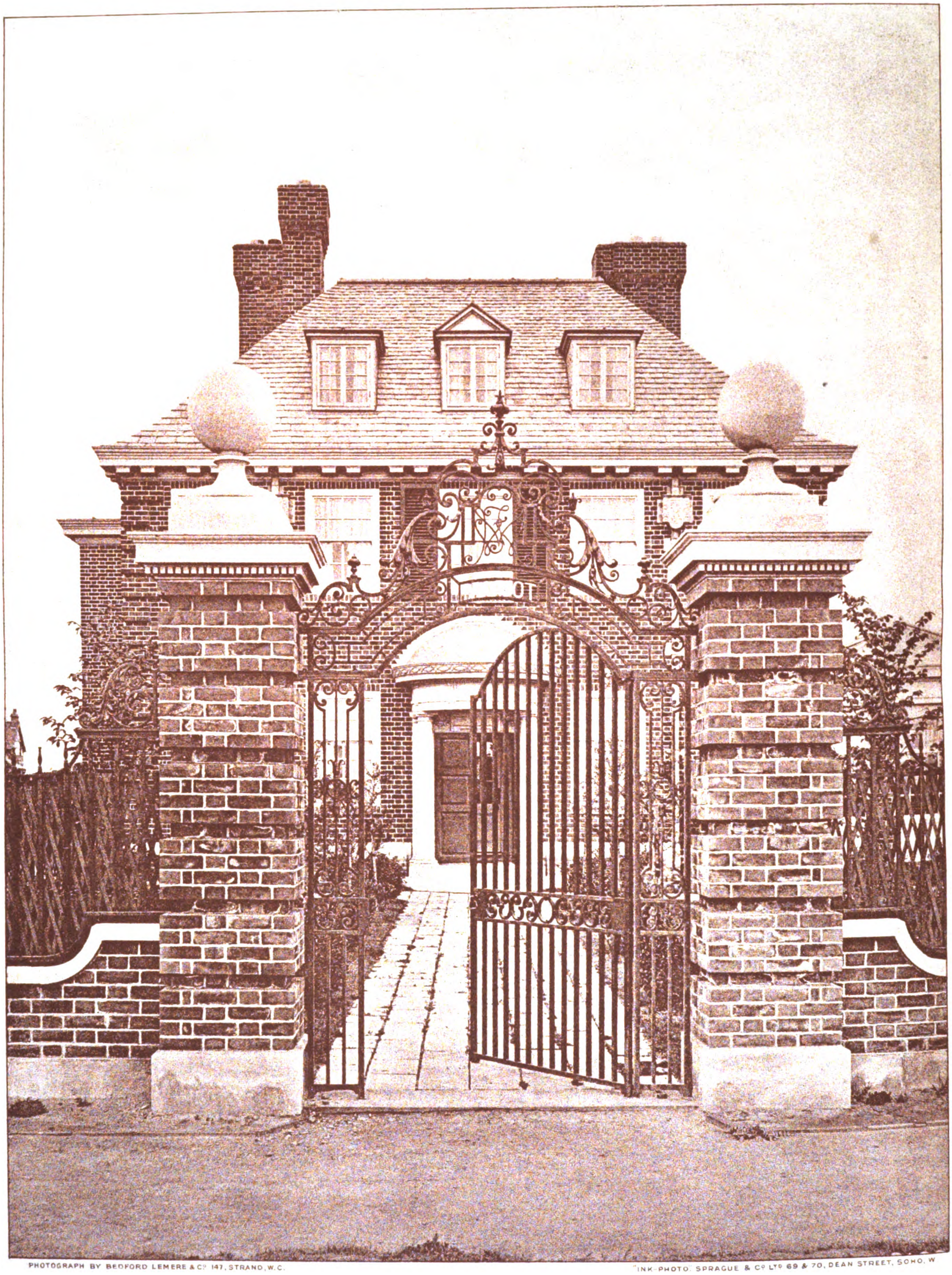
ING STUDENTSHIP, 1913.

JOHN HARRISON.

The Architect, April 24th 1914.



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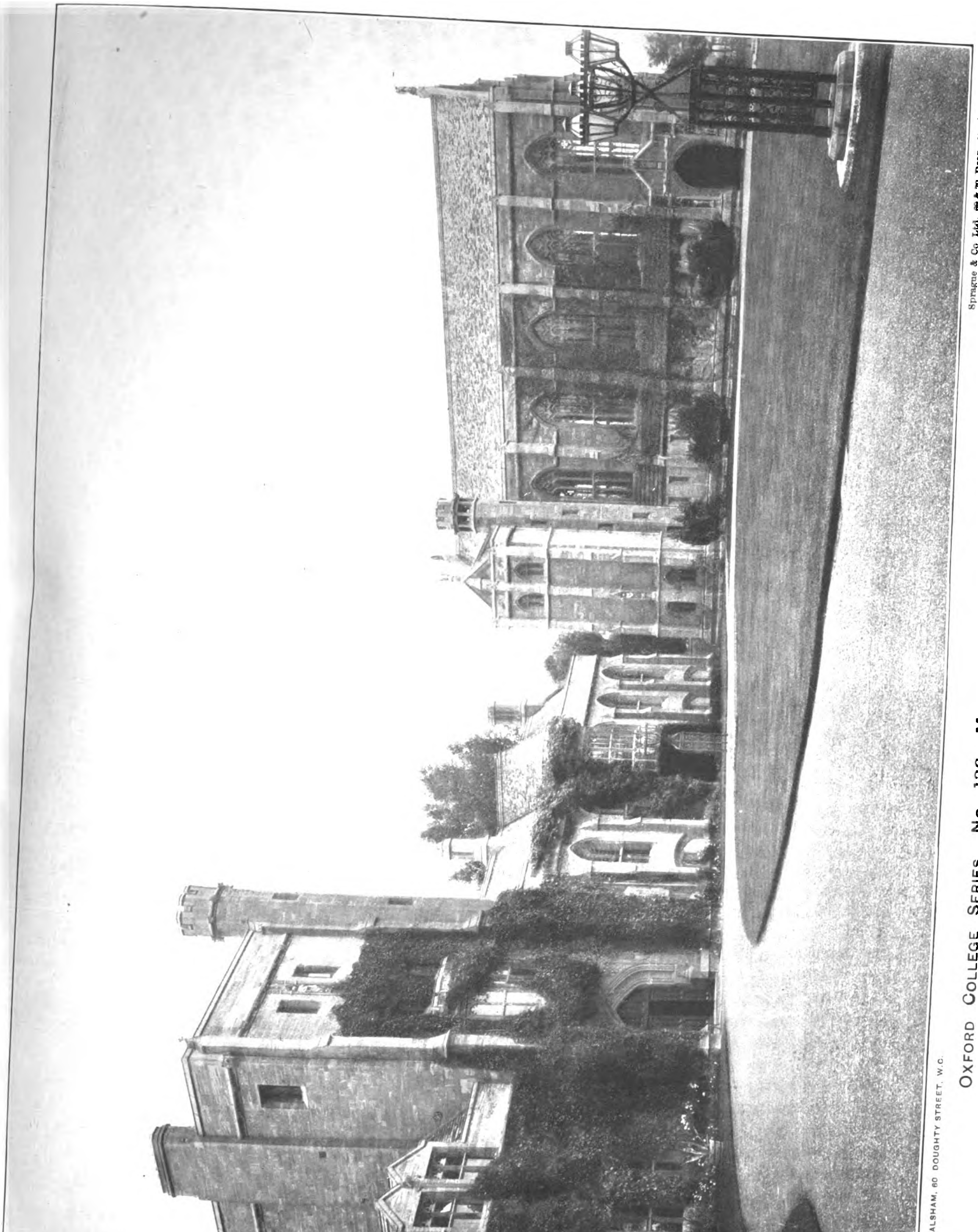
"REDCOT," BLUNDELL SANDS, NEAR LIVERPOOL.

Mr. R. FRANK ATKINSON, F.R.I.B.A., Architect.



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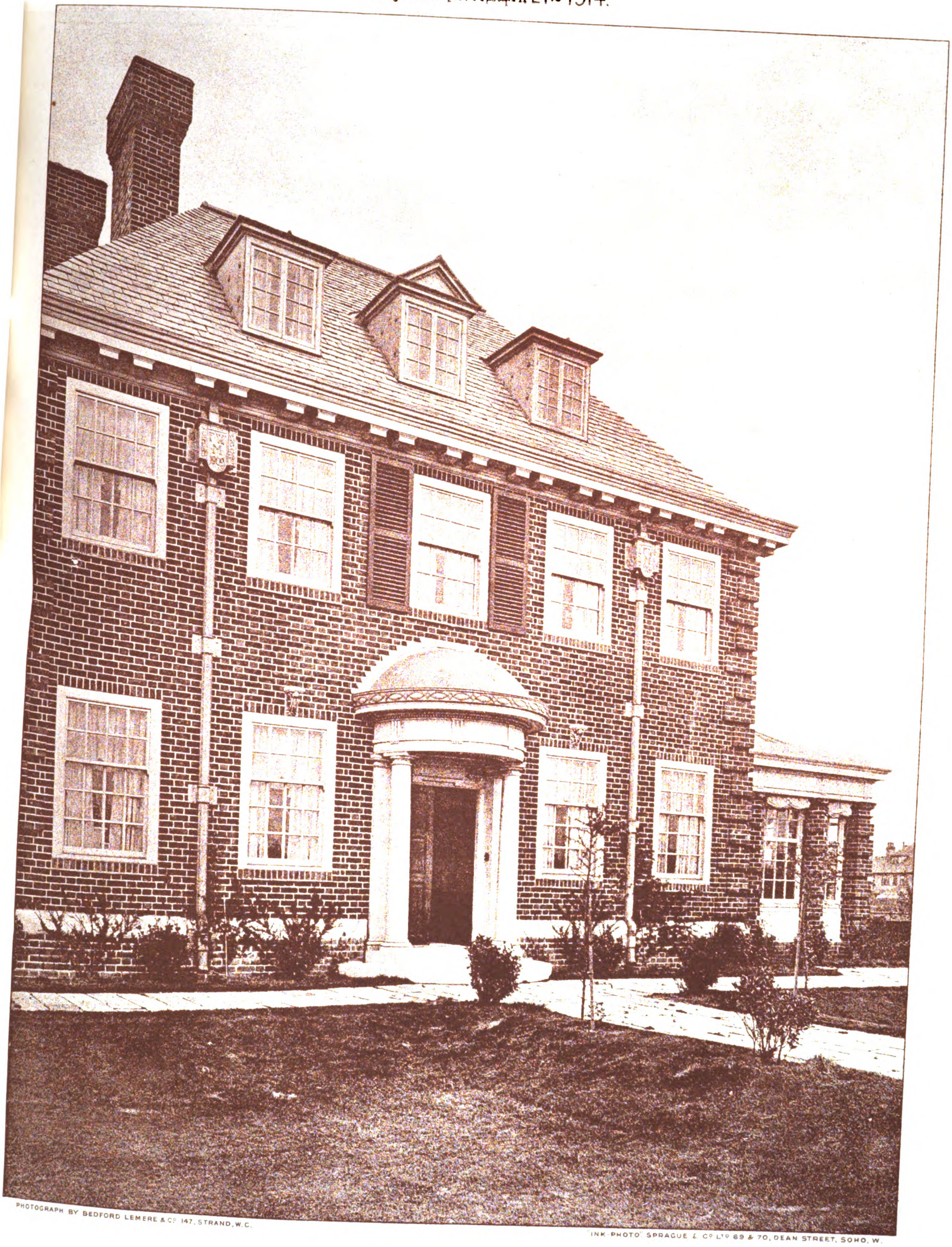

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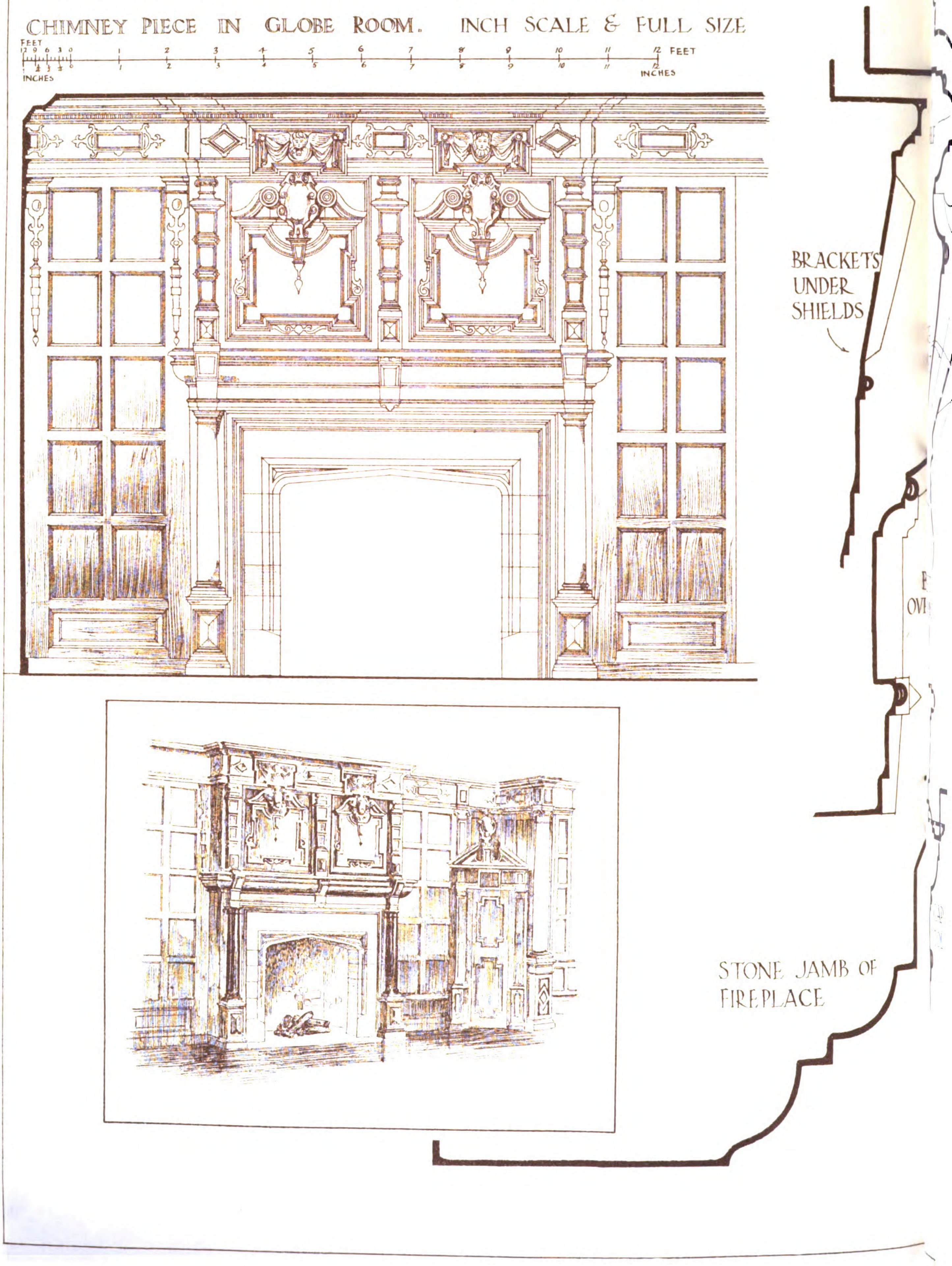
"REDCOT," BLUNDELL SANDS, NEAR LIVERPOOL.

Mr. R. FRANK ATKINSON, F.R.I.B.A., Architect.

YE OLDE REIN DEER INN, BANBURY, OXON.

CHIMNEY PIECE IN GLOBE ROOM. INCH SCALE & FULL SIZE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"THE ARCHITECT" STUDENTS' SKET

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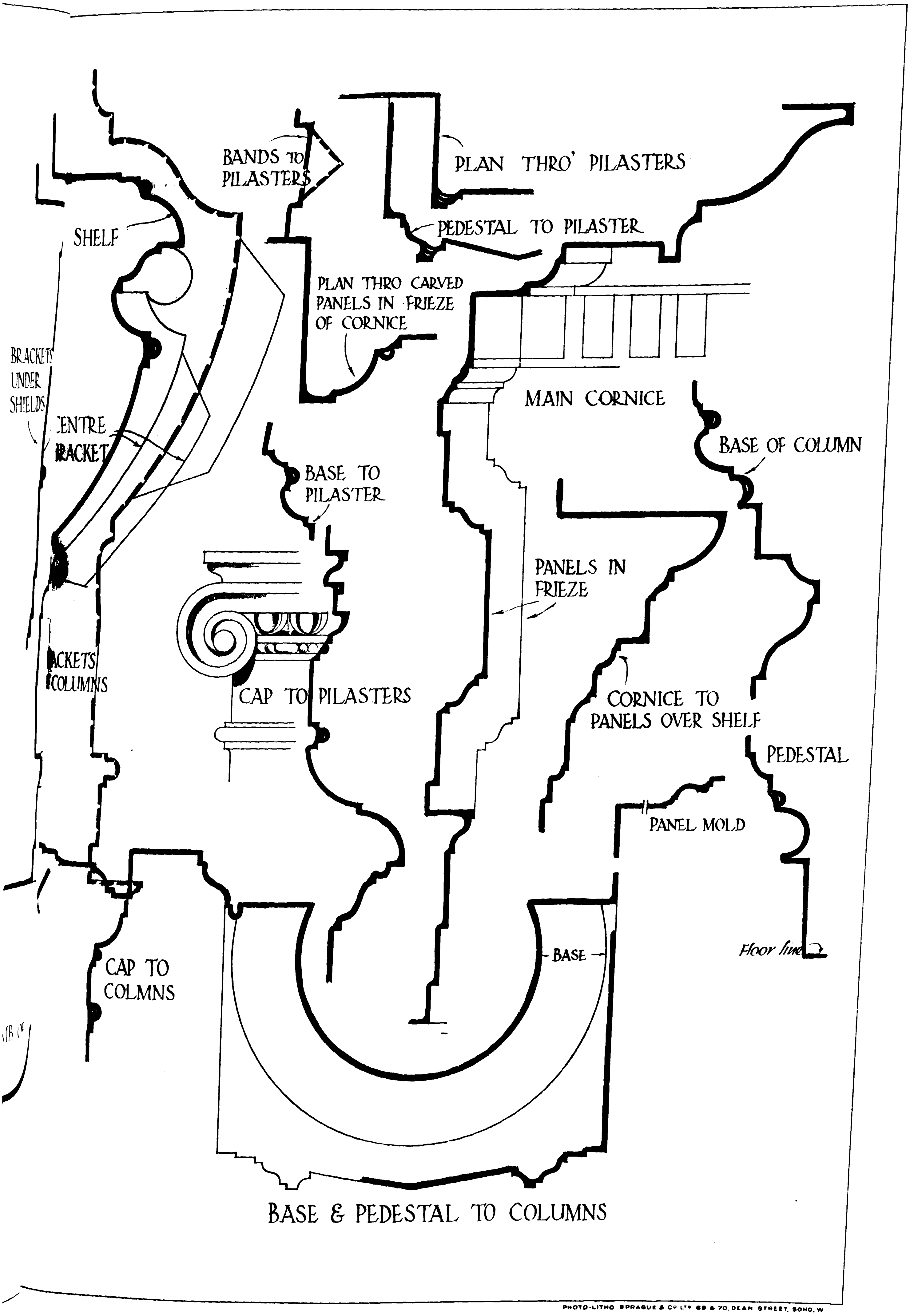
The Archt. Jul 24th 1914.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CAP TO COLMNS
BASE & PEDESTAL TO COLUMNS

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HING AND MEASURING CLUB.
LATO."

"1663. Killigrew obtained a piece of ground called Riding Yard for 41 years of Earl of Bedford in parish of S. Martin and S. Paul's, C. G.—he to expend 1,500£ and to pay 30£ ground rent. The Theatre was 112f. in length from east to west and 59 from N. to S."

Leases were often alluded to as marketable property and of a beneficial character, and in 1564 they are classed with chattels in a curious Order in Council.

After the Restoration the tide of building operations flowed more rapidly, and the large grounds surrounding the houses of the great families on both sides of the Strand and in Holborn began to disappear, and streets bearing their former owners' names are with us to this day.

The great increase of houses made the smoke question a prominent one, and Evelyn wrote on the subject in a tract called *Fumifugium.* His idea of a remedy was: "The melioration of the Aer of London by way of Plantation. . . . Low grounds on the south . . . fields of 20 to 40 acres planted with odoriferous shrubs." Although Lambeth Marsh is now covered with buildings, Evelyn would be delighted to see his dream partially fulfilled by the transformation of the swampy Battersea Fields into a well-timbered park of real beauty, which has taken place in our own time.

I shall conclude with a few words on the great metropolitan cathedral, but it will be only with reference to a case of dilapidations of some magnitude.

The church had for many years been in a state of disrepair. Both James I. and Charles I. made efforts to improve its deplorable condition. King Charles "spent part of his treasure," and recommended to the nobility and gentry "the raising of a large contribution."

"Poor Pouls look like a great skeleton, so pitifully handled that you may tell her ribbs through her skin." So James Howell wrote. It was in 1633 that Archbishop Laud wrote to the King that "The Cathedral Church suffers much for want of glass in the windows and that the Churchyard lies very undecently and the gates down."

Some money was certainly raised, and Heylin tells us part of the profits derived from Westminster lands was "laid out for reparation to the church of S. Paul's," possibly giving rise to the by-word "Robbing Peter to pay Paul."

Matters were worse during the Protectorate, and for a time the nave of the cathedral was used by the soldiers for stabling. Even after the Restoration, five years or more elapsed before any serious steps were taken in the matter. We read in Evelyn's *Diary*, August 27, 1666: "I went to S. Paule's Church where with Dr. Wren . . . the Bishop of London, the Deane of St. Paule's and several expert workmen, we went about to survey the generall decay of that ancient and venerable Church."

Within a week the Great Fire broke out, and the cathedral church—the glory of London for six centuries—in Evelyn's words, "one of the most antient pieces of early piety in ye Christian world" was laid in ruins.

Here it would be seemly to conclude, but I ask your indulgence for an afterthought on a surveyor who occupied an important position, and, moreover, filled other parts in life with distinction. Sir John Denham, who died in 1669, after a varied and eventful career, made his will in 1668, one clause of which reads as follows:—

"As Surveyor-General for the rebuilding of S. Paul's, I doe give and bequeath all my fees (being twenty shillings per diem) gratis towards that noble and pious worke, and as a further remembrance of my affection to the same, doe give the sum of one hundred pounds to the said Church of St. Paul's, to be paid when the said church shall begin to be in some forwardness to be rebuilt."

ART IN LONDON.

At the Fine Art Society's Galleries.

It was with an amount of pleasurable anticipation that we approached the doors of 148 New Bond Street, conscious, as we were, of their giving entry to an exhibition of works by Sir W. B. Richmond, R.A., whilst Mr. Keith Henderson also helped to provide variety with his oil paintings and coloured chalk drawings. With these, however, we will deal presently. For the time our attention is to be directed towards the paintings of scenery in Umbria and Assisi, as seen by Sir W. Richmond. That he understands his architecture is naturally a source of satisfaction to us; he is no mere copyist, but a sympathetic expressionist—we fight shy of the word impressionist. Regard, in the first place, the striking "Rocca S. Angelo" (51), than which there is nothing better in the whole collection: it is instinct with the breath of living Nature, and is as near perfection as human technique and presentation will admit. So, too, "Purple Night" in its own very different scheme ranks with the work just mentioned. "In the Wood of Carceri" (75) we perceive an unusually dainty sketch, for daintiness is not a prevailing characteristic of Sir William's brush. Other works we must select for mention are "The Stairs of Sa. Chiara, S. Damiano," "Rocks and Cell of Hermit—the Carceri," "The Refectory of Sa. Chiara," and "The Cloisters," the two latter sketches being from S. Damiano. And though much more detailed notice may be desirable, we must, however reluctantly, pass on and see what Mr. Henderson has provided for the public delectation. Rightly or wrongly, we cannot regard with the same degree of interest, or as being on the same high plane of artistic expression, any work that is executed in coloured chalks in preference to oil or water-colour media. But once having given utterance to this view, it is necessary to add that, so far as execution is concerned, Mr. Henderson's chalk studies are *facile principes*, as compared with his other work. Included in the former are a series of posy pictures, for the most part lacking in much interest, the vases exhibiting a disregard for correct drawing, which is regrettable; but No. 3 is exceptional and at the same time unexceptionable in treatment. In the majority of instances these chalk drawings require the adventitious aid of removed (not necessarily distant) inspection to do them justice; notably is this the case with "Burleigh" sketches, Nos. 5 and 10. "In the Turlo Valley" is a very effective study of clouds, half-veiling a mountain peak. "On Minchampton Common," "Osprey," "The Giant's Washpot—Ulster," "The Common, near Burleigh," and "The Arch at Cushendun—Ulster," stand pre-eminently in the exhibition, "Osprey" recalling the excellent qualities of the late Joseph Crawhall in his bird-studies. For the most part silence is the most charitable exercise in regard to the paintings, but we can commend the esprit and composition in "A Country Wedding," whilst we may concede that for decorative purposes "The Mysterious Rider" might attract some people, though of that number we should not form a section. As for "Dancing," "Charming Larry," "Waiting for the Horses," "The View," and "The Enchanted Balloons," verily they would not enchant or charm us at all—for other people we cannot speak.

Old Dudley Art Society's Spring Exhibition.

What is the quality which differentiates the sensation of satisfaction in a display of Art from one of discontent, that compels ungrudging admiration on the one hand or a more limited and comparative approval on the other? It does not suffice to attribute it to poor technique or poor colour or poor draughtsmanship, though these are factors in no degree negligible. There must be something else which affects us, and we are inclined to regard this most important factor as the presence or absence of sympathy and enthusiasm (the former more than the latter) on the part of the artist.

At the present moment we have in mind two exhibitions, mainly devoted to water-colour works—the one presented by the Royal Society of Painters in Water Colours and the other, which is the subject of the present notice. In the former we are impressed by a really good collection with but a modicum of mediocrity or worse; whereas in the other the general effect is of mediocrity, with a few works not so much of notable as of comparative merit.

We would suggest as a test of the accuracy of this view that a visitor to either exhibition should, in the first instance, merely walk round the gallery to obtain a general impression and then immediately visit the other in the same spirit, before regarding either in detail. This was not the method which we ourselves employed, but then we had no need to test the accuracy of our own impressions.

But let us now more closely examine some of the works here exhibited. "A Grateful Earnest of Eternal Peace," by Mr. W. H. Allen, R.B.A., is sufficiently pleasing, with a well-limned sky, and Mr. J. Carlisle's "Welsh Mountains" shows good work. Mr. H. S. Kortright's "Summer Flowers" is attractive, with its stone cistern and the background of massed herbage. Miss Gibson's "Atlantic Cliffs" is not merely comparatively but absolutely praiseworthy, and exhibits that quality of sympathy for which we plead. Mr. J. Paul Brinson, R.B.A., has excellent work in "When Day Departs," with its contrasting luminous sky and dull stream, and the trees effectively massed in the composition.

The President, Mr. Burleigh Bruhl, is seen to most advantage in "Winter's Mantle" and "Dawn," the latter

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being a good study in browns; and Mr. Parkyn's "Cardiff" and "On Braunton Burrow" deserve notice. "Nearly Home," by Mr. Charles Collins, schemed in greys, is rhythmical, and would attract notice anywhere; and we must not fail to notice Miss Ollivant's "A Yorkshire Moor" and "Storm on the Moor."

Mr. Terry's "Drowsy" and "Great Expectations," Mr. Robert Morley's "Indian Tigress" and "African Lion" (crayon studies), Mr. J. Hall's "The Old Mill," Mr. Dixey's "Crabbing Cove in Cornwall," Miss Eleanor Brace's "Wild Duck," Mr. Roscoe's "Ben Nevis," Mrs. Moberley's "Most Inquisitive"—these and a few more (ten per cent. of the whole exhibition), despite their good qualities, fail (as we remarked) to give a general air of excellence. Miss Warren in "York Minster" conveys the proper "interior" atmosphere, where others fail. We might reasonably include by name Mr. R. S. Standen and Mr. Robert Walker in the above list; but of this same list some are merely notable in an exhibition of mediocrities.

In the Near and Far East with a Flavour of the West.

The work of two lady-artists confronted us recently at the Modern Gallery, New Bond Street, and was to us a revelation, not alone for the technical quality, but for the fairly uniform maintenance of that and other qualities.

Both artists have the merit (not to be slurred over in these days) of possessing a good sense of colour, and both show a knowledge of their subjects. But though Miss Rose S. Rogers is thus enlightened, we must confess that her drawing of architecture is weak for the most part. Exceptions there are to this criticism, such as "A Street in Josselin" and "Elgin Cathedral," and "The Harem Window in a Cairene Court" is sufficiently forceful. We seem to trace in Miss Rogers' work a larger proportion of artistic sympathy than in Miss Blofeld's; but that is merely comparative. "Evening Light in the Temple of Luxor" suffers from its parallel-perspective presentment, the "end-on" view of the columns destroying what might be a highly-interesting subject. But we need only regard such works as "Before a Sandstorm, near Assiut," "Telephone," "Afterglow, near Luxor," "The Nile of Bedrashein," "Bougainvillia," and other of the Oriental studies, to recognise how admirable is Miss Rogers' art. Nor do her Western sketches suffer by comparison.

When we proceed to inspect Miss Blofeld's work (mainly representing India and Kashmir) we see even a brighter palette than Miss Rogers'; but with this access of brightness there is apt to be a spottiness in technique and a lack of adequate finish, which renders a more distant inspection advisable. Eminently is this the case in "The Mohurrun Procession, Poona," where we cannot regard as Art the pointillistic treatment of the human crowd. "Sunset, Darjeeling," deserves special note for its effective treatment of the sombre fore-greens, the blue middle-distance and the sun-capped peaks beyond. Other works we may mention are "The Taj Mahal" (67), "The lonely Temple of Mârman, Pahlgam," "The tired end of the Day" (86), "The Harbour Light," "A Gloucestershire Garden" and "Stokesby."

No short notice, however, can do fit and proper justice to the exhibition of these two ladies' industrious exploiting of East and West. To them has Nature revealed her secrets, which are at last no secrets to the artistic soul and temperament; for, to the discerning, Nature and her half-sister Art are ever ready to advance half-way along the path of recognition.

BUILDING PROGRESS IN THE PROVINCES AND SUBURBS.

A LIST OF WORKS PROJECTED OR COMMENCED.

(N.B.—Local Authorities, architects, and others are invited to submit full particulars for insertion in this weekly list. Where districts are not entered against names of architects and builders the address is as a rule local.)

ENGLAND.

Bedfordshire.

Bedford.—Six houses, Dents Road, for Messrs. Jones Bros.

Stables, &c., Midland Road, for the Bedford Progressive and Industrial Co-operative Society, Ltd.

Workshops, St. Mary's Street: additions, for Messrs. Nicholls & Son.

Berkshire.

Abingdon.—Tuberculosis Hospital.

Cheshire.

Little Weston.—P.M. Church.

Cornwall.

Bodmin.—Proposed Fire Station. Council surveyor.

Penzance.—Market House: alterations (£1,100).

Redruth (near).—House at Bucketts, for Mr. T. Williams.

St. Dennis.—Stores for the Co-operative Society of St. Columb Road.

Truro.—Royal Cornwall Infirmary: Dorrington Home for Females (£1,540). Mr. A. J. Cornelius, architect, 81 Lemon Street.

Derbyshire.

Derby.—Council School, Clarence Road: additional 300 places.

Glossop.—Parish Church: additions. Messrs. C. & C. M. Hadfield, A.R.I.B.A., architects, 19 St. James Street, Sheffield.

Dorset.

Poole.—Four houses, Parkstone Avenue, for Mr. C. H. Belben.

House, Stevenson Crescent, for Messrs. Bradford & Fox.

House, lodge, and garage, Canford Cliffs Road, for Mr. J. McMeekin.

House, Clifton Road, for Mr. J. Wright.

"The Holt," Danecourt Road: addition. Messrs. Wilson, builders, Church Street, Parkstone.

"Parkstone House": additions. Messrs. Burt & Vick, builders, Market Street.

House, Hermitage Road, for Mr. J. Matthews.

House, Jubilee Road, for Mr. S. Sims.

Farmhouse, Lake Road, Hamworthy: conversion into two houses, for Lady Wimborne.

House, Panorama Road. Mr. H. Kendall, architect, Towngate Street.

"Sherbourne," Princess Road: additions, for Mrs. Wiltshire.

House, Ringwood Road. Mr. S. Yeatman, builder, Albert Road, Upper Parkstone.

House, Tolstoi Road: additions, for Mr. G. Bartlett.

No. 40 Market Street: alterations, for Mr. H. Saunders.

Secondary School: additions. Borough surveyor.

Durham.

Herrington Burn.—House and shop, for Messrs. Sharpe & Berryman.

Kibblesworth.—48 houses, for Lord Ravensworth.

Low Moorsley.—House: addition, for Mr. W. S. Hilton.

Sunderland.—Day Training College: men's hostel and Principal's house.

Essex.

Chadwell Heath.—House, Gordon Road, for Mr. W. Ford.

Six houses, Tenby Road, for Messrs. Baskett & Brown.

Dagenham.—Bungalow, White Barn Lane, for Mr. W. H. Dines.

Hutton.—Church for 300 sittings (£3,000). Mr. Hare, architect.

Tolleshunt Major.—Workmen's dwellings (£1,100), for Maldon R.D.C. Mr. W. Almond, Council surveyor.

Upminster.—House, Hall Lane, for Messrs. Griggs & Co., Ltd.

Gloucestershire.

Fishponds.—Morley Memorial Congregational Church, Causeway: class-rooms and vestry.

Gloucester.—Stores. Mr. E. A. Pryer, architect, 18 Clarence Street.

Nailsea.—Wesleyan Methodist Church (£1,000).

Hampshire.

Bournemouth.—House, corner of Truscott Avenue and Bingham Road, for Mr. F. Holly.

Four houses, Kimberley Road, for Mr. H. G. Ives.

Christchurch.—Post Office, High Street.

Portsmouth.—Picture Theatre. Mr. E. J. Thomas, architect, 120 High Street, Gosport.

Winchester.—Fifty Council houses.

Herefordshire.

Hereford.—All Saints' Church: tower restoration (£2,200).

Hertfordshire.

Bishop's Stortford.—Herts and Essex Girls' High School: hostel.

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ENGLAND—*continued.*

KENT.

Bromley.—Workhouse: proposed new infirmary for 160 beds (£40,000). Mr. F. D. Smith, architect.

Canterbury.—St. Mary Bredin's and Broad Street C.E. Schools: enlargement.

Theatre. Messrs. Jennings & Gray, architects, 4 St. Margaret's Street.

Gillingham.—Shops, &c. Messrs. A. B. Clifford & Co., architects, Balmoral Road.

Gravesend.—The Ragged Schools: crèche.

Sevenoaks.—Fourteen Council workmen's cottages (£4,550).

Wrotham.—14 cottages, for Wrotham Tenants' Co.

LANCASHIRE.

Atherton.—Wesleyan School. Mr. H. C. Anderson, A.R.I.B.A., architect, Longford Street, Heywood.

Bury.—Workhouse: additions. Messrs. A. Hopkinson & Son, architects, 15 Agur Street.

Farnworth.—Five cottages, Harrowby Street. Mr. S. J. Hodgkiss, builder, Longcauseway.

Two houses, Lower Street, for Mr. W. H. Brooks.

Warehouse, Booth Court, for Mr. L. Rushton.

Kirkham.—Mill. Messrs. Holgate & Spivey, architects, Market Street, Colne.

Manchester.—Picture House and Billiards Hall, Brick Street, Gorton. Messrs. W. Townson & Sons (of Bolton), architects.

Picture Theatre, Princess Road, Moss Side, for Mr. A. Cummings.

LEICESTERSHIRE.

Ellistown.—Council School, for Coalville U.D.C.

LINCOLNSHIRE.

Immingham Dock.—Restaurant and Refreshment Rooms: extensions (£4,000). Mr. J. Gardner (Engineers' Office, G.C.R., London).

Lincoln.—House, West Parade. Mr. R. L. Holland, builder, 195 West Parade.

House, William Street, for Mr. J. W. Land.

MIDDLESEX.

Hornsey.—St. Mary's proposed Parish Hall (£3,500).

Willesden.—St. Mark's Church, Harlesden.

NORFOLK.

Gimingham.—Four cottages, for Erpingham R.D.C.

NORTHUMBERLAND.

Newcastle-on-Tyne.—Elementary Council Schools, Benton and Scrogg Roads.

Girls' School (in the old Grammar School): assembly room (£4,000), for the Education Committee.

Technical College, Bath Lane: extensions (£30,000).

SHROPSHIRE.

Oswestry.—Additions to premises, for the Co-operative Society. Mr. W. H. Spaull, F.R.I.B.A., architect, The Gables.

STAFFORDSHIRE.

Chase Town.—R.C. Schools for 185 places. Messrs. Harrison (F.R.I.B.A.) & Cox, architects, 109 Colmore Row, Birmingham.

Wesleyan Methodist Sunday Schools (£700).

Lichfield.—Two villas, Levett's Fields. Mr. J. R. Deacon, builder, Lombard Street.

Twenty workmen's cottages, Beacon Street. City surveyor.

Stafford.—Two houses and shops, Smallman Street. Messrs. G. Sandy & Co., builders, 2 Blackwalls North.

Tamworth.—Catholic Elementary School, Ludgate and Moorgate, The Leys.

Walsall.—One hundred and twenty-five Council dwellings. Borough surveyor.

Wolverhampton.—Works, Fallings Park: extension (for an additional 250 hands), for the Efandem Electric Company.

SURREY.

Bagshot.—Police Station (£3,500).

Banden Hill.—Elementary Council School.

Dorking.—Police Station: additions and alterations (£1,100).

Godalming.—Church Room (£1,500). Mr. D. Fry, contractor, Bridge Street.

Haslemere.—Police Station (£3,750).

SUSSEX.

Horsham.—Council School, Northchapel (£1,500).

Worthing.—Eight houses, King Edward Avenue. Messrs. F. Sandell & Sons, builders, Railway Approach; also

Thirty houses, Westbourne Avenue.

Seventeen houses, Brighton Road. Messrs. Cogswell & Hagger, R.I.B.A., architects, 5 Highworth.

Three houses, Grafton Road, for Mr. B. J. Blaker; also

Two houses, Heene Road.

WARWICKSHIRE.

Astley.—Parish Reading Room.

Atherstone.—Two houses, Coleshill Road, for Messrs. Pratt & Ingram.

Birmingham.—Judges' Lodgings, Hagley Road: additions and alterations (£1,300).

Coventry.—Baptist Chapel, Webster Street.

Hartshill.—Two houses, for Messrs. G. & F. Wilson.

Polesworth.—Two houses, Birchmoor Road, for Messrs. B. & G. Ghent.

House and shop, Grendon Road, for Mr. T. Ryle.

YORKSHIRE.

Crosshills.—House, Lothersdale Road. Mr. J. Hartley, architect, Swadford Chambers.

Diggle.—Council School (£3,000), for West Riding Education Committee.

Luddenden Foot.—Public Slipper Baths.

York.—The "Reindeer" Inn: alterations, for Messrs. J. Smith & Co. (Tadcaster).

WALES.

Denbigh.—Church Institute and Sunday Schools.

Four houses, Factory Ward. Mr. J. Hughes, architect, Park Street.

Holyhead.—Proposed Church House.

Llanelidan.—Proposed Parish Hall.

Velindre.—School-room. Mr. J. E. Davies, architect, Water Street, Aberavon.

SCOTLAND.

Buckhaven.—Proposed Cinema Palace, College Street, for Messrs. Forsyth, Storrier & Maidment.

Dundee.—City Hall (£100,000).

Dunfermline.—M'Lean School: extension (£6,600).

Edinburgh.—Electric Light Station, Portobello (£15,000).

Galashiels.—Public Baths, Wilderhaugh.

Harthill and West Benhar.—One hundred workmen's houses.

Irvine.—Five blocks of workmen's houses, Kirk Vennel.

Kilbirnie.—Public Hall and Offices.

Kilmarnock.—Infirmary: extension.

Paisley.—Works, Dyers Wynd: additions, for Mr. A. A. Gardner.

West Benhar.—(See above.)

IRELAND.

Dromore.—First Presbyterian Church. Mr. S. Stevenson, architect, 83 Royal Avenue, Belfast.

Letterkenny.—Sanatorium. Mr. P. McGrath, M.R.I.A.I., architect, 6 Castle Street, Londonderry.

BRITISH PATENT SPECIFICATIONS.

Selected by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

The first date given is the date of application; the second, at the end, the date of the advertisement of the acceptance of the completed specification.

No. 4,892. Feb. 26, 1913.—System of reinforcing concrete by means of bars of ordinary type, combined with links of special form. O. B. Rattenbury, of H.M. Dockyard, Devonport. This system consists in framing together longitudinal bars in any desired number by means of links, which, when used in conjunction with the bars and with each other, constitute a framed structure suitable for use as armouring for reinforced concrete. Each link is triangular in shape, with loops at each corner of the triangle, and connects together three bars, each loop passing round one bar. The sections shown in fig. 1 show the positions of the links A, B, C, D, E, and F on the bars *a*, *b*, *c*, *d*, *e* and *f*. A, B, C, D, E and F are successive links along the frame as shown in the elevation, and form one complete group. After link F has been fixed the next link will occupy the same relative position on link A, and in the elevation fig. 1A is indicated by A1. Fig. 2 shows

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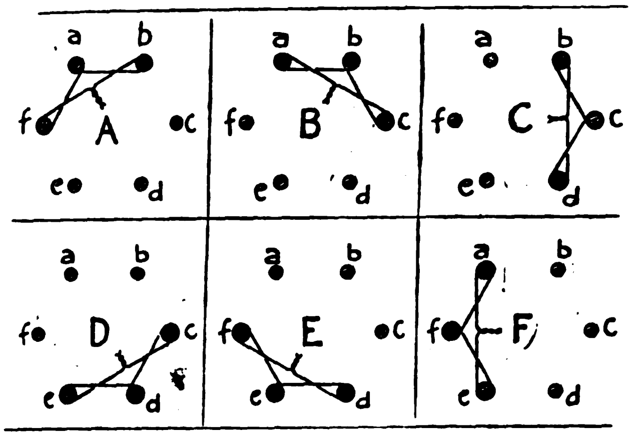
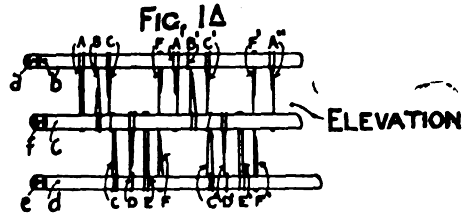
an adaptation of the triangular link to the case of a number of bars *a*, *b*, *c*, and *d*, arranged around a central bar *e*, each link passing over the central bar *e* and two of the surrounding bars. Fig. 3 shows a similar arrangement, but in this case the central bar is much enlarged and might be hollow. In consequence, one loop of each of the triangular links is also much enlarged, in order to pass round this central bar. In fig. 4 one loop of the link has been so much enlarged as to enclose the whole of the bars *a*, *b*, *c*, *d*, *e*, *f*, *g*, and *h*, the other two loops each enclosing one bar. In the figure the bars enclosed individually by the smaller loops are *a* and *b*. The next loop might enclose *b* and *c* individually, and so on until the frame is established. Instead of the large loop enclosing the whole of the bars externally, and so preventing outward radial movement of the bars, it might be in contact internally with them, and so prevent inward radial movement.—March 11, 1914.

FIG. 1





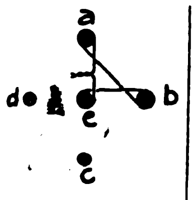


FIG. 2

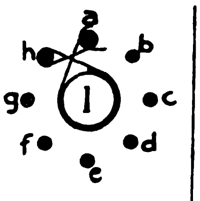


FIG. 3.

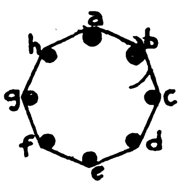


FIG. 4

PATENT SPECIFICATIONS PUBLISHED. APRIL 16, 1914.

Selected and designed by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

No. 4,365. Feb. 20, 1913.—Jean Bouillet, 80 Faubourg Saint-Denis, Paris. Machine for projecting sand or other pulverulent material against surfaces for cleaning or graining purposes, &c.

7,210. March 26, 1913.—Walter Wright, 9 Westdown Road, Catford, S.E. Walls for buildings (not subaqueous).

7,373. March 28, 1913.—Joseph Burley, 4 Beaconsfield Road, St. George, Bristol, E. Skylights.

7,424. March 28, 1913.—W. M. Still & Sons, Ltd., and F. E. Abbott, 29 Charles Street, Hatton Garden, E.C. Aair-gas apparatus.

7,534. March 31, 1913.—P. McIntosh Smith, 280 Howe Street, Vancouver, B.C., and J. G. Mitchell, Suite 15, Florence Court, corner of Georgia and Butte Streets, Vancouver, B.C. Spring hinges.

8,216. April 8, 1913.—W. K. Couper, Crookedholm House, Hurlford, Ayrshire. Fireplaces.

8,426. April 10, 1913.—W. C. Phipps, West Lodge, Walkergate, Newcastle-on-Tyne. Accessory device for woodworking machines.

9,041. April 17, 1913.—Geo. Wilkinson, Beech Mount, Otley Road, Harrogate. Apparatus for automatically controlling temperature.

9,075. April 17, 1913.—Alphonse Reis, 7 rue De Bom, Antwerp, Belgium, and Adolphe Picha, 2 rue des Deux Ponts, Gand, Belgium. Metallic bracing for reinforcing cement or concrete and for use as fencing.

10,288. May 1, 1913.—L. F. Kaye, 6 Colosseum Terrace, Regent's Park, W., and the British Silicate Engineering Co., Ltd., 70 Chancery Lane, W.C. Manufacture of bricks, artificial stone, and similar products.

11,755. May 20, 1913.—Gustave Markt, of the General Accessories Co., Ltd., 70 Worship Street, E.C. Electric ceiling roses.

12,719. May 31, 1913.—Wm. Cairns, junr., 16 Burnaby Street, Chester Road, Sunderland. Chimney and ventilating shaft tops.

14,999. June 30, 1913.—F. L. Keppler, architect, 204 Friedrichstr., Berlin. Glazed ferro-concrete structures, such as floors and partitions.

16,883. July 23, 1913.—William Williams, Ltd., and A. H. Williams, all of Reliance Works, Chester. Apparatus for the manufacture of metal frames, applicable to casement windows and the like.

22,831. Oct. 9, 1913.—F. R. Bradshaw, 75 Rosebery Avenue, East Ham. Construction and apparatus for carving and ornamenting wood mouldings and the like.

1,364. Jan. 17, 1914.—Dated under International Convention Jan. 18, 1913. Karl Schroder, Wilhelmstr. 30, Gleiwitz, Upper Silesia, Germany. Steam-heated radiators.

18,689. Aug. 18, 1913.—E. P. Marley, Wych Elm, Wylde Green, Warwick. Apparatus for releasing one or more doors when locked or latched.

19,274. Aug. 25, 1913.—R. G. Howson, of George Howson & Sons, Ltd., Eastwood Sanitary Works, Hanley. Fixture of lavatory basins and other sanitary ware.

19,398. Aug. 27, 1913.—Walter Grossheim, 7 Bachstrasse, Elberfeld, Germany. Imitations of stained glass.

27,012. Nov. 24, 1913.—G. W. Lundy, Peterborough, Ontario, Canada. Split handles for shovels and the like.

22,736. Oct. 5, 1912.—John Shanks, Tubal Works, Barrhead, Renfrewshire. Urinals.

21,590. Sept. 25, 1913.—Arthur Pollard, 1 Middleton Street, Nottingham. Swimming baths.

24,758. Oct. 31, 1913.—R. R. England, 442 City Road, Sheffield. Screws for securing the handles of saws and the like implements.

24,888. Nov. 1, 1913.—Hall & Kay, Ltd., Daniel Hall, and J. H. Kay, all of Stockport Road, Ashton-under-Lyne. Ventilators.

26,129. Nov. 14, 1913.—Jakob Schroiff, 61 Kaiserstr, Bielefeld, Germany. Reinforcement for concrete floors.

Any of the above specifications may be obtained from J. D. Roots & Co.

Correspondence

[The Editor will not be responsible for the opinions expressed by Correspondents.]

Hale Grove Gardens School Competition.

Sir,—I much regret to find that the notice vetoing the competition for a school at Mill Hill was sent out from my office on the 7th inst. headed simply "Mill Hill School Competition," instead of bearing the full description, "Hale Grove Gardens School Competition, Mill Hill." I should mention that it is the custom to style a competition briefly by the name of the district where the building the subject of the competition is to be erected, and in so designating it in this case the fact was lost sight of that the notice might be taken to refer to the public school at Mill Hill, which is widely known as "Mill Hill School." I am extremely sorry that this unfortunate oversight should have been the cause of annoyance to the authorities of Mill Hill school, and should be greatly obliged if you would allow me to express in your columns my sincere regret at its occurrence.—Yours faithfully,

Ian MacAlister,
Secretary.

Royal Institute of British Architects,
9 Conduit Street, Hanover Square, London, W.:
April 21, 1914.

[In the notice which appeared in *The Architect* of the warning to members and Licentiates of the Royal Institute we correctly described this competition as "The Hale Grove Gardens School Competition."—Ed.]

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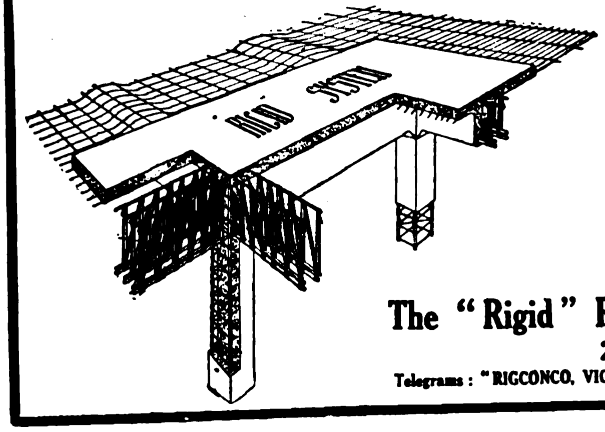

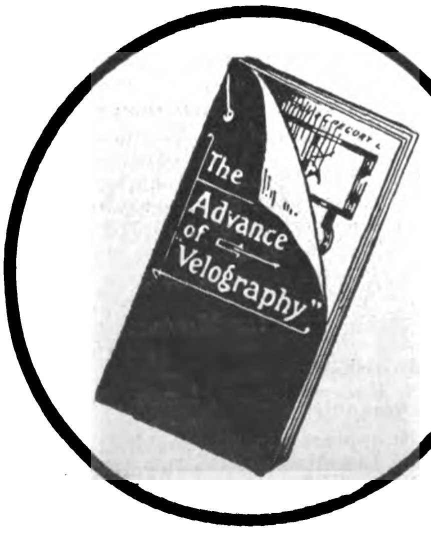

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THE ARCHITECT

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FORTHCOMING EVENTS.

Saturday, May 2.

Institution of Municipal and County Engineers : North-Eastern District Meeting in Sheffield.

Monday, May 4.

Royal Institute of British Architects : Eightieth Annual General Meeting at 8 P.M.

Surveyors' Institution : Resumed Discussion on Mr. Dawbarn Young's paper, entitled "Comments on the Land Inquiry Committee's (Urban) Conclusions," at 8 P.M.

Wednesday, May 7.

Royal Archæological Institute : Paper, entitled "Carvings of Mediæval Musical Instruments in Exeter Cathedral Church," by Miss E. K. Prideaux, at 4.30 P.M.

Thursday, May 8.

Royal Archæological Institute : Spring Meeting. Visit to four London Churches, viz., St. Bartholomew the Great, Smithfield ; St. Helen, Bishopsgate ; St. Catherine Cree and Southwark Cathedral Church.

MONUMENTAL CLASSIC ARCHITECTURE.

THE anticipations of the character of Mr. Richardson's newly published book* on Monumental Classic Architecture in Great Britain and Ireland during the eighteenth and nineteenth centuries which we formed from the preliminary prospectus have been more than fully realised by the appearance of the book itself, which will hold a place amongst the most sumptuous productions of the house of B. T. Batsford, Ltd., and completes the trilogy dealing with the Renaissance architecture of Great Britain and Ireland so well commenced by the volumes devoted to early work by Gotch and Talbot Brown, and to later work by Belcher and Macartney. The precise portions of the eighteenth and nineteenth centuries from which Mr. Richardson has drawn his examples date from 1730 A.D. to the death of "Greek" Thomson.

The history of architecture during this period in Great Britain and Ireland, although it has seen, even through the days of the Gothic revival, a continuous sequence of design based upon Classic tradition, has been so far from showing development upon regular and generally accepted lines, that it is a matter of great difficulty for a historian to subdivide it into periods, stages, or phases, and to label each appropriately. Difficult though it may be, it seems to be an accepted canon amongst writers on architectural history to attempt the task of differentiating the work of each period and describing it by appropriate denomination.

Mr. Richardson accordingly divides the scope of his historical treatment into the Roman Palladian phase, from A.D. 1730 to 1780; the Græco-Roman phase, from A.D. 1780 to 1820; the Greek phase, from A.D. 1820 to 1840; and the Culmination, in the Neo-Grec and Italian phase. Now it seems to us that from the date when Mr. Richardson commences his review of Monumental Classic Architecture, 1730 A.D. to the present time, the modern spirit of eclecticism in architectural design has been its predominant characteristic, and Classicism has in no sense progressed towards a culmination, but has continually reverted to former types, whether favoured by Greek, Roman, or Italian in the past, and has started from a fresh base over and over again to evolve something in the spirit rather than in the letter of the prototype selected for the moment.

With the exception of the short twenty years that he assigns to the Greek phase, from A.D. 1820 to 1840, it appears that Mr. Richardson in his quest for labels has been unable to escape the evidence of eclecticism, and it is not quite clear that the Italian version of the Roman treatment of Greek material has not been ever taken as a starting-point during the periods that our author delimits as phases under the distinctive names of Roman Palladian, Græco-Roman, and the Culmination in Neo-Grec and Italian. We cannot forget the example of Baldassare Peruzzi, for instance, in distinctly reverting to the original Greek for the basis of his detail rather than accepting the Roman version of the same original. The architectural designer who is working in the Classic manner must ever be conscious that the *fons et origo* of his vocabulary is Greece, and that, whether his design be denominated Græco-Roman, Greek, or Neo-Grec, the distinction is but one of more or less deviation from the original source, a distinction that may be also held to apply to Roman, Palladian, or Italian. We might, indeed, do worse than include all the various phases under the comprehensive term of Neo-Classic, to direct attention to the monumental qualities and academic aspect of which, "from the period of its inception at the beginning of the seventeenth century until the brilliant culmination during the second half of the nineteenth century," Mr. Richardson, in his preface, sets out as the object of his present volume.

As to the meaning of the term "Monumental Architecture" Mr. Richardson, following Matthew Arnold, says: "The monumental quality in architecture, as in all other aspects of art, is relative, and its definition depends on the proportion it bears to Nature's primal laws. Therefore it becomes the essential duty of the true artist to inquire into the cult of the monumental; to determine not only the universal laws which govern evolution, but to establish an academic rule which can be applied to any particular manifestation of it. To view the many forms of architecture from a critical standpoint, to subject them to drastic comparison with those which have survived the test of time and received the approbation of the ages, is the surest method of judgment. All the great works of art and literature are not only the *product* of intellectual creative activity, but owe some part of their lasting qualities to the refining function of constructive criticism."

---

* *Monumental Classic Architecture in Great Britain and Ireland during the Eighteenth and Nineteenth Centuries.* By A. E. Richardson, Fellow of the Royal Institute of British Architects. Illustrated in a series of photographs specially taken by E. Dockree, and measured drawings of the more important Neo-Classic buildings, with descriptive text. (London : B. T. Batsford, Ltd. 84s. net.)

Turning now to the Roman Palladian phase, or the period from A.D. 1730 to 1780, we find included the Parliament House, Exchange, Custom House, King's Inns, and Four Courts, Dublin; John Wood's Royal Circus at Bath; John Carr's Court House at York; the work of the Brothers Adam at Whitehall and Edinburgh University; buildings in and near Lincoln's Inn Fields, London; Sir William Chambers' work at the Royal Bank of Scotland, Edinburgh, at Somerset House, and the Casino Marino, Clontarf; and the Mansion House, London, and Newgate Prison by the Dances. Now, although it must be recognised that the principles of Roman architecture as understood and interpreted by Palladio also influenced the designers of the period in question, yet it is impossible to ignore the fact that the work of John Carr, the Brothers Adam, Sir William Chambers, and even the Irishmen, Gandon and Cooley, owed a good deal of its character to a study of Greek, if not at first hand, at least in the Pompeian or Italian development from the original Classic forms and detail of antiquity. Thus we have clear proof that not to Palladio alone, or in conjunction with Roman Classic, is to be attributed the basis of the monumental architecture of the fifty years between A.D. 1730 and 1780. The Neo-Classic of this period is of Græco-Roman-Italian origin, with a possible predominance of the Italian element.

In the Græco-Roman phase, A.D. 1780-1820, we have included the work of Stuart and Revett, Henry Holland, Thomas Hardwick, Samuel Pepys Cockerell, Thomas Harrison, James Wyatt, Jeffrey Wyatt, Sir John Soane, John Nash, George Repton, J. Johnson, David Laing, the Brothers Pain, Robert Reid, Charles Heathcote Tatham, George Ledwall Taylor, John Linnell Bond, the Rennies (father and son), and William Tierney Clark. In the work of these architects there is as much Palladianism as Greek, and at least a combination of Græco-Roman-Italian elements even when specific details from ancient Classic sources are copied literally.

The Greek phase, A.D. 1820-1840, marks a period of short duration in which the Classic architecture of ancient Greece was very exactly reproduced, but even here we have, as for example in Sir Charles Barry's Art Gallery at Manchester and the National Gallery, London, by William Wilkins, distinct manifestations of the influence of Italian versions of Roman development of Greek architecture.

In the culminating phase of Mr. Richardson's classification we have still further evidence of eclecticism in the adoption and adaptation of motifs from Greek, Roman and Italian treatment of Classic principles and Classic detail, for whilst on the one hand we find such close approximation to purity of original motif as in the work of "Greek" Thomson, we have, on the other, such a combination of Greek, Roman and Italian as is exhibited in Professor C. R. Cockerell's Taylor and Randolph buildings at Oxford. This latter it would be improper to label as either Greek or Neo-Grec, Roman or Italian. It is reminiscent of all, and in that respect is characteristic of the Neo-Classic spirit.

With such examples of the great architecture of the Classic masters of the eighteenth and nineteenth centuries as are so admirably described and so superbly illustrated, both by collotype and half-tone reproductions of photographs as well as by geometrical drawings in the beautiful production of Mr. Richardson and B. T. Batsford, Ltd., we can adopt for ourselves the view which the author tells us was that of Professor Cockerell, who "regarded the architect as the historian of his times, and never regretted advising his students to study the productions of their native land; he looked upon the orders of architecture as the letters of the alphabet, which awaited genius to cast them into discourses."

NOTES AND COMMENTS.

THE visit of several members of Parliament for a personal inspection of the roof of Westminster Hall on Thursday in last week convinced them, we have no doubt, of the extreme skill of the designers and artificers of the magnificent hammer-beam roof, as well as of the enormous extent of the mischief wrought by the larvæ which have for years past been attacking the timber. The visitors were attended by Mr. Baines, the principal architect of the Ancient Monuments department of the Office of Works, and, in the course of a lecture delivered *in situ*, he pointed out that the scientific and artistic mind which designed this, the greatest timber roof in the world, had originally worked out the factor of safety to something like four. The factor of safety now, if all the stresses and strains were worked out, would be minus something. Yet so good was the principle and so excellent the workmanship and material that the roof was still supported, despite all that had happened. In this way we saw how the theory was even better than the practice, and had come to its aid in the hour of need.

Another interesting thing said was that the controversy about the sort of timber, and where it came from, was settled at last. Mr. Baines had found the original documents for the material of the hall. The material is oak, and it came from the forests of St. Albans and Sussex. The vastness of the oak trees from which these timbers were cut could be imagined from the fact that the hammer-posts, which are each about 22 ft. high and weigh about 3½ tons, are 3 ft. 10½ in. by 2 ft. 7 in. in thickness. A roll moulding about two inches thick, which runs round the base and upright of timbers a little less in diameter, are all part of the one solid piece.

The simplest description of the construction is that the principal rafters that run up to the ridge of the roof are supported by a structure based on the mighty hammer-beams that are fitted on to the top of the stone wall and held in their place beneath by a wall-post which rests on a corbel below the windows, and are jammed down from above by the end of the principal rafter that fits above it. Near the end of the hammer-beam rises a huge hammer-post supporting the great arched ribs which spring from the wall above the corbel on either side, and meet in the centre, forming a complete arch over the hall. Over that and pinioned into it is a collar-beam spanning the hall, which supports a king post and two queen posts, rising to a frame which holds the roof ridge and supports the principal rafters there.

The spaces between the principal timbers are filled with carved wooden uprights and tracery with trefoil heads. It was curious to see how, when many of the chief timbers had been so eaten away by insects and decay that they were no longer performing their structural duty, these elegant and ornamental screens of woodwork were now standing up nobly to the work, and in many cases bearing strains themselves.

In moving the vote in the House of Commons for £34,700 for the Houses of Parliament buildings, Mr. Wedgwood Benn gave an interesting historical account of the Westminster Hall roof. He said that Richard II., desiring to make the hall more glorious, designed, with the assistance of his master carpenter, the great roof. No less than 90 per cent. of the timber now in the roof was put there by Richard II.'s carpenter, who introduced new principles which had made the Westminster Hall roof one of the architectural glories of the world. Even at the present day there was no other wooden roof in the world, save one recently constructed in Russia, which had such an extensive span. There was no reason to suppose there had been any extensive repairs until shortly after the restoration of Charles II. In 1780 an inquiry was made into the condition of the roof, and a very alarming report was presented as to its condition. Nothing, however, appeared to have been done until the beginning of the nineteenth century, when Sir John Soane undertook the first extensive restoration of the Hall and roof. At that time the lower part of the north-west and north-east towers were flanked by two coffee-houses. These were removed, and the towers were restored to their original design. Nothing further was done to the roof until when Sir Charles Barry was rebuilding the Palace of Westminster the House of Commons instructed him to make a survey of the roof. Apparently under a misconception as to what the principle of the roof was, Sir Charles Barry put in steel ties and shoes. He also put in struts, which were a great defacement of the beauty of the roof. Since then practically nothing on a large scale had been done. Last year a complete survey was made. Every joint was examined and every timber was sounded with the hammer. This examination showed that there were four causes of the present decay of the roof—dry rot, certain surface decay, there was an insect known as the goat-moth at work, and, most important of all, very extensive ravages by a small grub known as *Xestobium tessellatum*. This last was a very active grub, of which he would be happy to exhibit a specimen in the tea-room. Of the 40,000 cubic feet of the roof some 35 per cent. had been affected by this insect.

Describing the proposals of the First Commissioner for the repair of the roof, he said that they must ensure stability, stop the decay, and have regard to the beauty and historical value of the work. A great deal of damage had been done owing to defective ventilation, and the ventilation, therefore, was to be improved. Experts were considering the subject of decay, and he hoped they would soon come to a decision. As to the strengthening of the roof and the ensuring of stability, they proposed to place on William the Second's walls a steel structure which would in effect be a roof in itself, strong enough to support its own weight and to support the weight of the roof, resist wind pressure, and support the weight of the timbers already in the roof. This steelwork would enable them to preserve all the timber save about 35 per cent. They would be able to conceal the steelwork, so that it would hardly be possible to say that it was steelwork. It would be painted, and, as far as possible, merged into the general colour of the wood. They had, he continued, established beyond doubt that the wood was oak and not chestnut. The work would not be put out to contract, and it would probably extend over six years. The cost, he thought, would be about [illegible]. Although this was a large sum, he hoped the House would not consider it excessive. They hoped to take this roof of the first and greatest of our public buildings and secure it from decay for all time.

Eltham Palace and its beautiful hammer-beam roof, which, if less scientific than the earlier one of Westminster Hall, is an estimable monument of mediæval carpentry, has already received skilful preservative rather than restorative treatment at the hands of the architectural staff of the Office of Works, and it is expected that these works will be completed in about four months' time. Eltham has not only great architectural and artistic interest, but is historically important also. It was a Royal manor under Edward the Confessor. Henry III. kept Christmas there in great state in 1270. In the early fourteenth century it was held by Anthony de Bek, Bishop of Durham, the splendour of whose entertainment was surpassed only by the King. Prince John was born at Eltham in 1315, and Edward III. held Parliaments and entertained King John of France at the Palace. A stranger guest, the exiled King of Bohemia, was banqueted here by Richard II. After that it declined in Royal favour, and Henry VIII. preferred Greenwich. Elizabeth spent a few days here in 1559, and the last king who visited it was James I. The churchwardens' records show:—"Paid for Ryngers when the kynges magestie came to lie at Ealthom, 12d." Prince Frederick of Wales was created Earl of Eltham in 1726, but beyond that Eltham faded out of history as thoroughly as though it had been razed to the ground. The Commonwealth sold it for the benefit of the public.

The position that garden cities, suburbs, and town planning has taken in the minds of the public may be gathered from the fact of the rejection of the London Northern Junction Railway Bill on its second reading in the House of Commons by a majority of 181 to 104. The War Office, the Roads Board, and, naturally, the Great Northern Railway, the Great Central Railway, and the London and South-Western Railway were in favour of the scheme, but the opposition organised by such societies as the Garden Cities and Town-Planning Association and the National Housing and Town-Planning Council, supported by local members of Parliament—Mr. Percy Alden (Tottenham), the Earl of Ronaldshay (Hornsey), Captain J. R. P. Newman (Enfield), Mr. Herbert Neild (Ealing), and Mr. W. S. Glyn-Jones (Stepney)—was sufficient to wreck the Bill.

The letter appealing for funds for the preservation of Thaxted Church, Essex, which appears in our "Correspondence" column is one that has our cordial sympathy. Thaxted Church has been called, with some reason, the most beautiful church in Essex. It is undoubtedly one of the finest parish churches in England. It is one of the few examples of the ultimate development of Gothic architecture, in which the massive walls of earlier times are replaced by a mere framework of stone tracery and glass, supporting, for all its frailness, large expanses of carved roofing. Archbishop Parker might well ask of the Lord Treasurer "convenient allowance in maintaining this edifice, builded of good zeal and devotion of our predecessors." The church is remarkable, not only for what it is, but for its situation. Built on a hill, its fair structure dominates the landscape for miles.

The piers of the nave of Thaxted Church probably date back to the reign of Henry III. The earliest vicar was officiating about 1300. The tradition is that the chancel was the work principally of Edward IV. The north porch may be as late as the time of Henry VIII. The remarkable font is said by an old tradition to have been presented by Catherine of Aragon, whose badge, the pomegranate, figures so constantly in the carvings of the roof of the church.

ARCHITECTS' BENEVOLENT SOCIETY.

THE annual general meeting of this Society was held on Tuesday, April 28, at 9 Conduit Street, W., at 5 P.M. Mr. J. MacVicar Anderson, PP.R.I.B.A. (Trustee), was in the chair.

Among those present were Messrs. H. L. Florence, Edwin T. Hall, Henry Lovegrove, A. Saxon Snell, Edward Greenop (Hon. Auditor), Sydney Perks, Wm. Woodward, W. Hilton Nash (Hon. Treasurer), Percival Currey (Hon. Secretary), and R. Dircks (Assistant Secretary).

The following report of the Council was submitted:—

The Council, in submitting their sixty-fourth annual report, have the pleasure to state that they have been able to afford relief in the case of all applications which have been found deserving. The sum of £753 10*s*. was distributed in seventy-one grants, and £256 5*s*. was paid to the Society's ten pensioners, the total sum distributed in relief being £1,009 15*s*.

The amount received in subscriptions was £677 0*s*. 6*d*., and in legacies and donations £1,438 8*s*. 6*d*. Included in the latter amount is the sum of £1,200 received from the executors of the late Mr. William Glover, under the terms of whose will (referred to in the last annual report) the Society benefits both on the realisation of his estate and later as part residuary legatees. The sum of £100 was also bequeathed by the late Mr. Herbert Winstanley, an old subscriber of the Society. Among the amounts received as donations was £50 from the Chelsea Arts Club, as well as the following amounts: Mr. Arthur Ashbridge, £25; Mr. J. S. Gibson, £12 12*s*.; Mr. Thomas Dinwiddy, £10 10*s*.; Architectural Association, £10 10*s*.; Mr. W. Tillott Barlow, £5 5*s*.; as well as various smaller sums.

During the year the Council have had under serious consideration, in view of the fall in price of Consols, the question of the sale and re-investment of certain stocks held by the Society. It was ultimately determined, with the consent of the Trustees, to sell the Consols and to re-invest the amount in stocks yielding larger interest. The re-investments were made in Queensland 3½ per cent. Inscribed (1930) Stock and Victoria 3½ per cent. Inscribed (1923) Stock.

The Council wish to express their grateful appreciation of the efforts of Mr. Alex. N. Paterson, the President of the Glasgow Institute of Architects, for promoting the interests of the Society in his district.

During the year twenty-eight new subscribers have been added to the Society's list.

The Council have to report with much regret the death during the year of the following members of the Society: Mr. R. H. Burden, Mr. J. Oldrid Scott, and Mr. T. H. Watson.

The following, being the five senior members, retire by rotation from the Council: Mr. T. E. Collcutt, Mr. George Hubbard, Mr. A. Saxon Snell, Mr. W. L. Spires, and Mr. Rowland Plumbe. To fill the vacancies caused by these retirements the Council have the pleasure to nominate Mr. W. D. Caroe, Mr. B. Champneys, Mr. Chatfeild-Clarke, Mr. Stanley Peach, and Mr. H. Porter.

The Council have the pleasure to nominate Mr. H. L. Florence and Mr. Reginald St. A. Roumieu as Vice-Presidents.

As the applications received by the Society are thoroughly investigated, the Council would wish to take this opportunity of suggesting the advisability of members and others communicating with the officials before responding to requests for assistance from persons who are unknown to them. Help is often privately afforded in response to a begging letter, a plausible tale of ill-health or adverse circumstances, which proper investigation proves to be groundless. Assistance granted in such circumstances goes to swell the number of begging-letter writers.

The thanks of the Society are due to the Royal Institute of British Architects for office accommodation and to the staff for much helpful assistance.

The above report was adopted on the motion of the Chairman.

The Council for the session 1914-15 was elected as follows: President, the President R.I.B.A.; Vice-Presidents, Mr. H. L. Florence and Mr. Reginald St. Aubyn Roumieu; Ordinary Members, Mr. Henry Lovegrove, Mr. E. Arden Minty, Mr. Basil Champneys, Mr. W. D. Caroe, Mr. Chatfeild-Clarke, Mr. Stanley Peach, Mr. Horace Porter, Mr. Wm. Woodward, Mr. Arthur Ashbridge, Mr. Sidney F. Bartlett, Mr. E. Guy Dawber, Mr. Wm. Grellier, Mr. C. K. Baker King, Mr. Andrew T. Taylor, and the President of the Society of Architects.

After the customary votes of thanks had been carried the meeting terminated.

NOTTINGHAM AND DERBY ARCHITECTURAL SOCIETY.

A satisfactory state of affairs was disclosed at the annual meeting, held in Nottingham on Tuesday, April 21, of the Nottingham and Derby Architectural Society. The retiring President, Mr. E. R. Sutton, occupied the chair.

The Council's report for the year ended March 31, 1914, disclosed a membership of 119—an increase of twenty-eight over the previous year. The approval of the Sheffield Society having been obtained to the rearrangement of the boundaries of the Sheffield, Nottingham, and Derby Societies, the amalgamation of the two last named took place in May. A committee are now considering the revision of the rules. The Council had appointed a committee to deal with all matters within their province under the Town Planning Act of 1909.

The statement of accounts showed that the balance in hand had increased from £26 9*s*. 5*d*. at the outset to £62 17*s*. 9*d*. at the close.

The Town Planning Committee regretted a lack of enthusiasm on the part of the city authorities for any cohesive scheme of town planning, and trusted that the example set by smaller towns would have its influence.

The Vice-President, Mr. Harry Gill, M.S.A., Licentiate R.I.B.A., was elected President, and Mr. H. G. Watkins, A.R.I.B.A., Vice-President. Mr. F. M. Royle was reappointed Hon. Secretary and Treasurer. Messrs. W. Bond, A. N. Bromley, A Eaton, E. R. Sutton, A. E. Heazell, T. H. Thorpe, H. P. Hill, C. E. Howitt, and J. Woollatt were elected on the Council. Messrs. F. W. Gregory and C. W. Hasledine were appointed Auditors, and Messrs. J. Woollatt and R. Spencer reappointed Hon. Secretary of the Designing Club and Librarian respectively.

It was decided to nominate the retiring President, Mr. E. R. Sutton, for the Council of the Royal Institute.

COMPETITION NEWS

Bishops Castle.—The Shropshire Education Committee have agreed to invite competitive plans for a proposed secondary School at Bishops Castle and to appoint Mr. H. Beswick as assessor at a fee of £15 15*s*.

Bulgaria.—The first premium of £400 in the international competition for a new Royal Palace proposed to be erected at Sofia has been awarded by the Ministry of Public Works to M. Chedanne, of Paris, architect to the French Government and a winner of the Prix de Rome. A Bulgarian architect, M. Lazaroff, has won the second premium of £280.

Burnley.—The Committee of the Victoria Hospital for Burnley and District invite architects desirous of taking part in a limited competition for additions and alterations to the hospital to send in applications to Mr. F. A. Hargreaves, hon. secretary, 7 Grimshaw Street, Burnley, before Monday, May 4. Subject to the conditions of the competition, the architect whose design is chosen by the assessor, Mr. H. P. Adams, F.R.I.B.A., will be commissioned to carry out the works on the usual terms sanctioned by the Royal Institute of British Architects, and to the competitors placed second, third, and fourth premiums of £75, £50, and £25 respectively will be awarded.

Coventry.—The Education Committee recommend the selection of the plans submitted in competition by Mr. A. W. Hoare, of Coventry, for a proposed municipal technical institute at Pool Meadow, and that he be appointed architect for the execution of the work at an inclusive fee of £1.000. The estimated cost of the institute is £24.500.

Gateshead.—The Education Committee have decided to arrange an open competition for plans of the proposed King Edward School.

Ireland.—The plans of Mr. V. H. O'Hanlon, architect, of 7 Lower Mount Street, Dublin, have been selected for the new technical school in Cookstown, Ulster.

ILLUSTRATIONS.

BALLIOL COLLEGE.—NEW ORGAN CASE.

The illustration here given represents the new organ front recently erected in Balliol College Hall, a completion of the scheme which Mr. Paul Waterhouse has carried out in entirely repanelling and redecorating the interior of this building. The oak work has been executed by Messrs. H. H. Martyn & Co., of Cheltenham, and the reconstruction of the instrument has been in the hands of Messrs. Bevington & Sons. The whole of this work, including the previously completed panelling of the hall, is the gift of Mr. R. Younger, K.C., to his college, of which Mr. Waterhouse is also a member.

The fabric of the Hall itself was erected in 1874 from the designs of the late Mr. Alfred Waterhouse, R.A.

LIBRARY AT BRYANSTON SQUARE, LONDON.

The old oak panelling used in the adornment of this room was cut and adapted to fit, and treated with potash and waxed. The frieze is in modelled plaster, painted, shaded, enamelled, and varnished in exact reproduction of Della Robbia ware colouring. The work was carried out by Messrs. G. & A. Brown, Ltd., of 167 Hammersmith Road, London.

SALL CHURCH, NORFOLK.

Sall Church is one of the finest in Norfolk, and is throughout of fifteenth-century date. It consists of chancel, nave, transepts and North and South porches with paniges. The West door is original, and so also are the doors to stairways of both porches. The pulpit is small but of excellent design, and was originally painted, but the colouring is unfortunately defaced.

OXFORD COLLEGE SERIES.—NO. 137.—MANSFIELD.

In our series of illustrations of Mansfield College we this week present an interior view of the chapel, the design, as we stated last week, of Mr. Basil Champneys, M.A.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

A SPECIAL general meeting was held at the Institute last Monday evening, to consider the draft proposals of the Council for obtaining a new charter and by-laws to enable the Royal Institute to constitute and maintain a register of qualified architects.

Mr. Reginald Blomfield, R.A., President, occupied the chair, and there was an attendance of about 150 members. Mr. Blomfield, in a few opening remarks, said that the printed agenda before the meeting set out shortly and clearly the plain and business-like terms of the charter policy of the Institute. Since this charter policy had been decided upon by the unanimous vote of the general body of the Institute, there had been a good deal of misrepresentation outside the walls of the Institute, and much comment and various statements had been printed which did not accurately represent the position and intentions of the Institute. The proposals now to be considered were emphatically not an aggrandisation of their own interests, but were put forward for the benefit of all the architects in the country. Clause 3 (c) was framed with the special intention of including as "registered architects" those who were not attached to the Institute or its allied societies. He claimed that, as the Institute was the one accredited representative body of architects in this country, it must be the only body entitled to be entrusted with any registrative functions of any kind.

On the President calling on Mr. C. Stanley Peach to move the first clause, Mr. K. Gammell rose on a point of order.

Mr. Gammell said that they would remember that when the proposals for the Supplemental Charter of 1909 were discussed some years ago it was keenly debated as to whether the Associates had the power of voting on the question of charters or by-laws. He remembered that the opinion of an eminent counsel was obtained on the point. He thought that it was finally decided that Associates had the power to vote on charter matters, but not on by-laws. He wished to have it made quite certain that the present proceedings should not run the risk of being declared invalid hereafter on account of any votes of the Associates.

The President said that the proposals had been carefully drawn up so as to include in one draft matters both for a charter and for by-laws. They would be properly sorted out at a later date and put into legal form. He was not a lawyer himself, but he could state that the Council had been definitely advised that the Associates had full power of voting on the whole of the proposals now put forward.

Mr. Peach then moved Clause 1, to enable the R.I.B.A. to constitute and maintain a register. In a brief speech he claimed that after the recent full discusion within those walls the clause might be considered as uncontroversial.

Mr. George Hubbard, Vice-President, formally seconded.

Mr. W. R. Davidge moved, and Mr. Ernest Newton, Vice-President, seconded the addition of the words "either alone or in conjunction with other bodies."

This was opposed by Mr. William Woodward and Mr. Sidney Perks.

Mr. Perks said that when it was proposed to join hands with the Society of Architects he was advised by an authoritative member of the Privy Council that it was very unwise to propose to extend the privileges of a chartered body to an unchartered body. He saw no necessity to include other bodies.

On the suggestion of Mr. Peach, the question was left for the consideration of the Council.

After further discussion, the clause was carried unanimously.

In moving Clause 2, Mr. Peach said that it provided that only corporate members of the R.I.B.A. should be entitled to call themselves "chartered architects." Licentiates, practising members of the allied societies, and unattached architects would be known as "registered architects." He knew that very strong feelings were expressed or held one way or the other by many members on the position and privileges of Licentiates. He did not wish to cast any slur on the Licentiates, and they must remember that the question of any new privileges being granted to these brother architects rested finally with the Privy Council. The charter was a gift from the King, and they must take what they could get, even if it was not all they might wish for.

Mr. S. D. Topley said that it must be clearly understood that the Licentiates were not real members of the Institute. He and other Associates objected strongly to any powers in the management of the Institute being given to them.

Mr. Maurice B. Adams pointed out that a former proposal for the representation of the Licentiates on the Institute Council had been dropped. He thought that they might be formed into a kind of "convocation," with power to submit recommendations to the Council. He quite felt the difficulty of the Associates with reference to any promotion of the Licentiates. On another point he wished it to be made clear whether the present proposals were to be taken as leading up to statutory registration or only as an end in themselves.

An Associate pointed out that there was and must continue to be a clear distinction between corporate members of the Institute and those men who were not. If they left the position of the Licentiates to the Council it would be like instructing the Council to revise the Ten Commandments, with power to leave out an occasional "not" if the Council thought fit.

Mr. H. W. Cubitt moved, and Mr. Herbert Welch seconded, an amendment that if the Privy Council would not pass the clause in its present terms it should be referred back to the general body.

After some discussion it was agreed by the President, on behalf of the Council, that any modifications suggested by the Privy Council should be submitted to another meeting later on, and the clause was then passed.

Clause 3 was moved and seconded by Mr. Peach and Mr. Hubbard.

Mr. S. D. Topley suggested that the period for registering members of the Allied Societies and outside architects should be extended from three months to six or more.

Mr. Maurice Adams asked whether the word "members" of Allied Societies included junior members, and the President stated that it included all persons within the Allied Societies who were in *bonâ-fide* practice.

Mr. W. R. Davidge raised the point of the future admission of any Societies in the United Kingdom as Allied Societies, and it was decided to leave out the word "the" in front of the words "Allied Societies."

Mr. H. Shepherd pointed out that there was no age limit in Sub-section c of this clause. The minimum age for Fellows and Licentiates was thirty years and for Associates twenty-one years. There was nothing in the clause to prevent an outside architect from starting practice at eighteen and then after two years claiming to be registered at the age of twenty.

The President undertook that the Council would consider the minimum age to be required.

On the motion of Mr. Peach, seconded by Mr. Topley, Clause 7 was considered before Clauses 4, 5 and 6.

On Clause 7 Mr. Topley moved an amendment that the register should be controlled by a Registration Board, composed of twenty-one architects, not less than eleven being corporate members of the R.I.B.A., and the rest registered architects. The persons to be registered might be classed as "attached architects," who belonged to the Institute and its Allied Societies, and "outsiders" who did not. Each class should be represented on the Registration Board. He took it that the procedure of the Registration Board would be: (1) to invite applications for registration; (2) to inscribe approved candidates on the register; (3) to set up a standard of professional conduct; (4) to remove from the register architects who did not conform to this standard. A Board constituted as he proposed would have the confidence of all architects in carrying out these functions, and would attract unattached architects to the register.

Mr. H. W. Cubitt, in seconding the amendment, said that at present the Licentiates were governed without any representation on the body that controlled them, which was undesirable. In establishing the proposed Board he suggested that there should be an appeal from it to the Council of the R.I.B.A.

Mr. Woodward strongly opposed the amendment. It proposed to set up an indefinite body in place of a definite body such as a Standing Committee of the R.I.B.A.

Mr. J. S. Gibson said that the amendment, if carried, would set up two bodies, the R.I.B.A and the Registration Board, which very probably would come into variance with one another from time to time. There might be set up two standards of morality, the lower one being for non-members of the Institute. In any case, this Registration Board would be a serious and very undesirable rival to the Council of the R.I.B.A.

Sir Aston Webb thought it was very desirable that the Registering Committee should be not all corporate members of the Institute, but it should certainly not be a body independent of the R.I.B.A. Council. The Board of Architectural Education, the most important of all the committees of the Institute, was subject to the control of the Council, and the creation of any body capable of ignoring the Institute Council would be disastrous.

Mr. Perks also thought that this committee must be subject to the Council.

Mr. Peach, in replying to the amendment, said that the question of an independent Board had often been considered, but it had been held that an *imperium in imperio* was impossible. The Council of the R.I.B.A. must be the final Court of Appeal, and any Registration Board could not be independent of it.

The President, in putting the amendment, said that the Council would give further consideration to the detailed composition of the Registering Committee.

The amendment was lost by sixty-five votes to twenty-two.

Mr. Davidge then moved, and Mr. H. V. Lanchester (Vice-President) seconded, that this Standing Committee of the R.I.B.A. be called the Registration Board or Authority, or by some similar name.

After some discussion this was agreed to.

Clauses 4, 5 and 6 were carried with little discussion, on the motions of Mr. Peach, seconded by Mr. Hubbard.

On Clause 8, concerning the representation of Licentiates on the Registering Committee and their constitutional position generally, there was considerable discussion, several members wandering from the point and showing a disposition to repeat arguments which had been used in the consideration of Clause 2.

Mr. Ernest Newton, on a point of order, said that as the discussion was getting rather vague, and as several very important questions remained to be considered, he thought it would be wise for the meeting to adjourn till another evening, when they would be fresh and their heads clear.

Mr. Hubbard seconded the adjournment, which was carried by a narrow majority, and the meeting ended at 10.15 P.M.

THE HISTORY AND EVOLUTION OF THE DOME IN PERSIA.*

By K. A. C. Creswell.

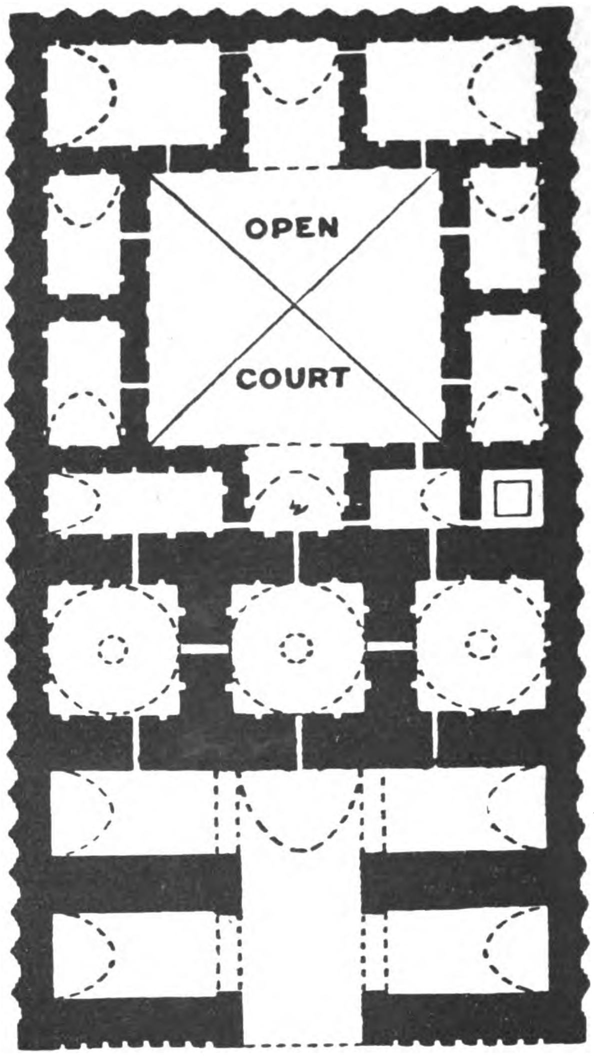
It is my intention to trace the history and evolution of the dome in Persia from the earliest times to the present day, and I hope to show at the same time the very important part played by Persia in the evolution of domed construction, which, I believe, has never been pointed out before. Before doing this, however, I must first briefly review the dome in antiquity.

There can be no doubt as to the great age of this form of roofing, as domes existed in Egypt at least as early as the tenth dynasty. A model of a house found at Rifeh belonging to that period shows a terrace roof with three little domes just emerging through it, a type which may be seen at the present day in many parts of the East. In Chaldæa and Assyria it existed at least as early as 700 B.C., as may be seen from the slab found by Layard in the palace of Sennacherib at Nineveh (705-681 B.C.). On this slab peasants' huts are shown, some roofed with hemispherical cupolas and some with tall domes approximating to cones in shape. In Rome the only domes known to Vitruvius, who wrote about the beginning of the first century, were those required for the hot chamber of the bath.

Now there is one feature common to all these domes—viz., they are all small and used in buildings of secondary importance. This was the case in Egypt and also in Chaldæa, where the great palaces of Sargon and Sennacherib appear to have been built without domes, the vault predominating everywhere, a feature noticed by Strabo and confirmed by Place.

Now what is the explanation of the fact that the people of antiquity mentioned, although they could construct domes, never used them in buildings of the first importance? I think the reason is this. It must be due to the absence of a satisfactory pendentive, for the knowledge of dome-building is not enough by itself, unless a method whereby a dome may be set over a square chamber has also been invented. A complex building, such as a palace, cannot be composed of a number of circular rooms, and in the absence of a satisfactory pendentive the dome must be abandoned in favour of the vault. This explains the limited use of the dome in Roman architecture. In the Pantheon, with its dome 140 feet in diameter, Roman dome construction blazed up and then almost died out. Few are the domes in Roman architecture, and all, up to the time of Constantine and even later, are set over a circular space.

It therefore seems to me that the Persians, who were the first people to solve the problem and devise a satisfactory pendentive, played for this reason a very important—I may say vital—part in the evolution of domical construction, as they did for the East what the Byzantine pendentive at a later date did for the West.



31.—Plan of the Palace of Firouzabad.

From "Architecture—East and West."—By permission of B. T. Batsford, Ltd.

The first instance of the use of the Persian pendentive is the palace of Firuzabad, where we see, for the first time, a really large dome (45 feet) set over a square space. We also see the method by which this was accomplished—viz., by means of a squinch, a device wholly Persian. By the squinch, which here consists of a series of concentric arches thrown across the angle and advancing one over the other, the square is reduced to an octagon, upon which is it easy to set a dome. It is impossible to overrate the importance of this discovery; by it Persia, so to speak, ennobled the dome, and gave it new fields to conquer, raising it at once to the front rank as a method of roofing, a position it has kept in Persia ever since.

In Firuzabad there are three square-domed rooms and several vaulted ones. The stability of the vaults is ensured either by adjacent structures or by large voids left in the thickness of the walls spanned by barrel vaulting. Dieulafoy calls these discharging chambers. In this palace the stucco decoration round the door frames consists of an Egyptian reed cornice, which recalls the decoration found in the Achæmenian palaces at Persepolis and Susa.

I place Sarvistan next, contrary to the usual order, on account of its highly evolved planning, a great advance being shown in the vaulting arrangements. Piers are built in the walls (see "Architecture, East and West"), thus forming a series of recesses, which are covered with semi-domes or barrel vaults, above which rises the central elliptical vault. These recesses, to my mind, are simply a development of the discharging chambers at Firuzabad and indicate a later date Further, they bear a close analogy to seventh and eighth century palaces in Mesopotamia, such as Ukheidir and Kasr Karaneh, where piers are also found. On the other hand, in addition to its simple planning, all the affinities of Firuzabad are with antiquity. I therefore reverse the usual order and put Firuzabad before 240 A.D. (possibly much earlier), and place Sarvistan in the fourth century, and possibly even later, on account of its affinities with the two palaces mentioned.

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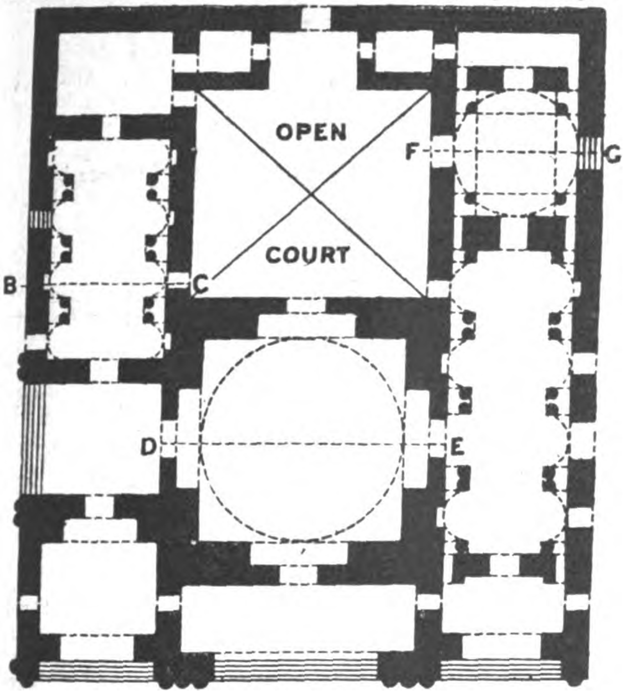
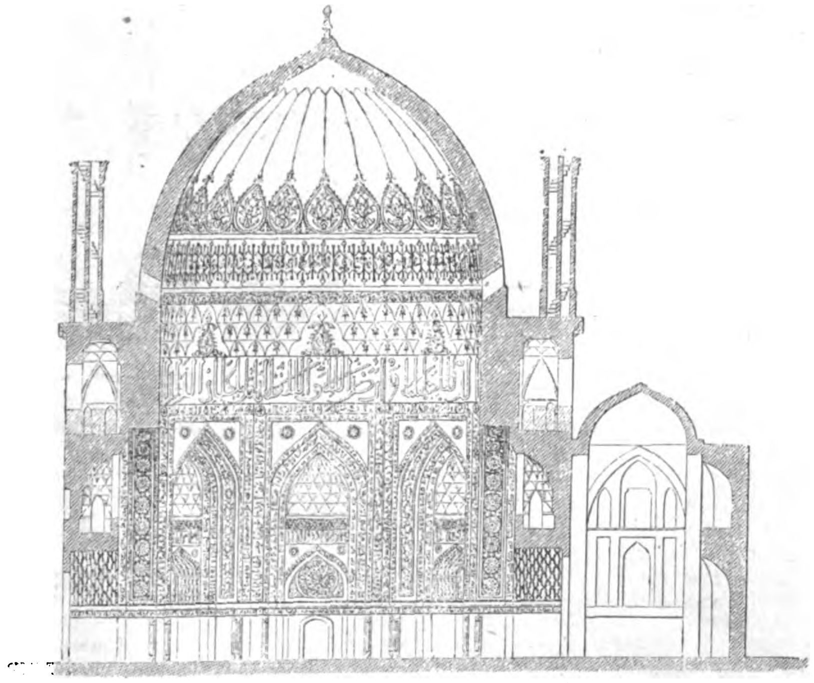
* Synopsis of a Paper read before the Royal Asiatic Society on April 7.



27.—PLAN OF THE PALACE OF SERBISTAN.
From "Architecture—East and West."—By permission of B. T. Batsford, Ltd.



SECTION OF TOMB AT SULTANIEH.—From Fergusson's "Handbook of Architecture."—By permission of Mr. John Murray.

In both Firuzabad and Sarvistan the domes are elliptical in shape, the former being lit by an eye in the centre, like the domes on Layard's slab; the latter by hollow terracotta pots built in at regular intervals.

So far, I have said nothing as to the origin of the dome. Now, wherever there is an absence of wood in Persia—which is the case in East Persia especially—there even the peasants' huts are domed rectangles of mud. Domes are built all over the Near and Middle East at the present day by the most primitive people, with scarcely any appliances and without centreing; and, it seems to me, it may quite well have had an independent origin in Persia, necessity having forced its invention; and for this reason I regard the domes of Firuzabad and Sarvistan as developments of indigenous construction, and not of Mesopotamian origin.

In fact, in this connection I think I may safely say that the great mechanical skill of the Persian architect was due to this very absence of wood—vast tracts are absolutely treeless—which made him think, and forced the invention of domes and vaults at a very early date, and led to their use all over Persia, except in the Caspian provinces, where wood is abundant, which bears out my theory.

We now come to the romance of the dome, which is ushered in with the advent of Islam.

There are two early domes at Kum—that of the Great Mosque, built 878, and that of the tomb of Mohammed bin Musa, built 976.* They are more or less hemispherical in shape.

A good example of a twelfth-century dome is that of the tomb of Sultan Sanjar at Old Merv, built before his death in 1157. It is 40 feet in diameter and 80 feet high.

The finest dome in Persia is that of the mausoleum of Mohammed Khudabunda at Sultanieh, built 1307.

Fig. 3 shows a section from Texier's work. Note the beautiful outline of the dome, which is not obscured by the piling up of material on its haunches, a feature often found in Western domes, and which gives them a very ugly exterior outline, as in the Pantheon. It is an unnecessary disfigurement, too, for which statement see Denison's Paper "On the Mathematical Theory of Domes" (in the *Journal*, R.I.B.A., 1871). Amongst the interesting results arrived at in this paper is the conclusion that pointed domes are superior to hemispherical ones—interesting because most domes in the East are pointed. Some of Denison's results, which were obtained by means of higher mathematics, have been confirmed independently by graphical statics in Percy Waldram's "Structural Mechanics," pp. 301-327. This mausoleum is octagonal in plan, and the dome is 84 feet in diameter.

The Musjid-i-Juma at Veramin, built by Sultan Abu Said in 1322, has a fine dome also, though it is less pointed than the last, and recalls somewhat that of Sarvistan in outline. The dome itself is set on an octagonal drum, in each face of which narrow slit-like windows appear.

We now approach the Timuride age, when a great change is witnessed in the style of dome used in Persia. Up to this point all the domes met with are simple structures, and we have no example of the double dome.

Now, however, we see a new type appear, which consists of the former type of dome, *covered over* by a slightly bulbous shell, which is superimposed on it, leaving a large space between. This style only appears towards the end of Timur's reign, his early buildings not having this feature. In 1371 he built the mausoleum of his sister Tchouchouck

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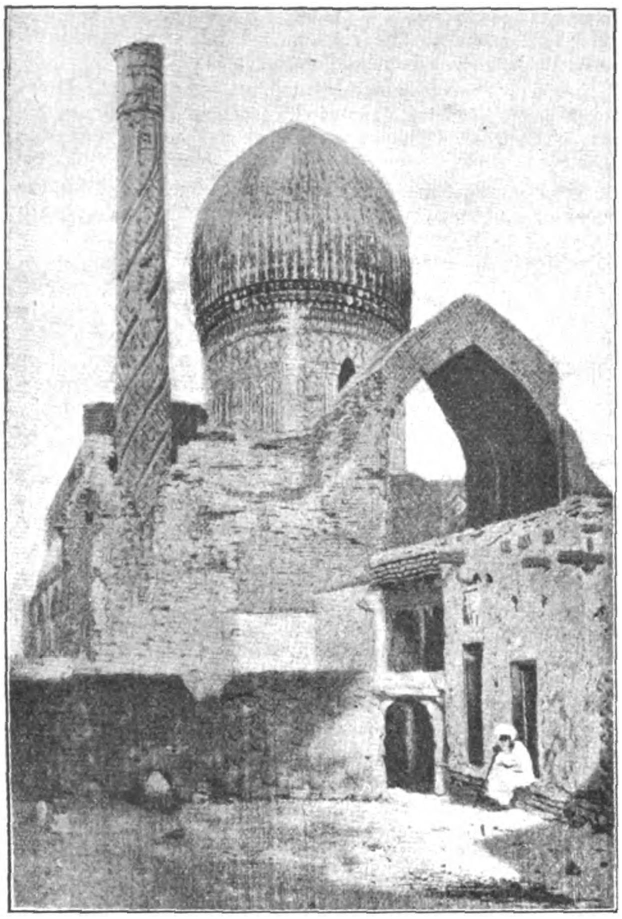
* A. Houtum-Schindler, *Eastern Persian Irak*, pp. 64-5.

Bika in the group of buildings known as the Shah Zindeh, or Living Saint, so called from the grave of Kasim ibn Abbas, who is supposed to be still living, and whose shrine forms the chief building in the group. Both these buildings have single domes, fluted externally, but when we come to the mausoleum of his wife Bibi Khanum, commenced, according to Schubert von Soldern in 1399, and finished in 1403, and his own mausoleum, known as the Gur Amir, we for the first time meet with the double dome with slightly swelling outline, a type of dome which henceforth became a constant feature in Persian architecture. The mosque-mausoleum built at Turkestan over the tomb of Hazret Khoja Ahmed Yesavi by Timur, which was commenced in 1387 and finished in 1404, has a huge dome, lower but similar in shape to that at Sultanieh, but the double dome soon became general.



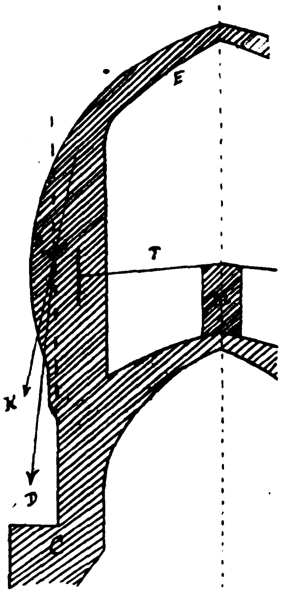
GUR AMIR, THE MAUSOLEUM OF TIMUR.
By permission of Methuen & Co., Ltd.

No explanation of the origin of this peculiarity is to be found suggested in Fergusson's "History of Architecture," nor does Russell Sturgis make any comment on it. The same remark applies to Texier, who thought the double dome with entasis was the rule in Persia, with the single exception known to him at Sultanieh, although when speaking of the Musjid-i-Shah at Isfahan he says one is led to believe it was introduced from India by the Mongol rulers of Persia. P. Coste, in "Monuments Modernes de la Perse," states (p. 59 and pl. 71) that it was introduced during the sixteenth century, and calls the dome at Sultanieh the "Arab" form (p. 46). A. Gosset, in "Les Cupoles d'Orient et d'Occident," describes the feature without comment, while A. Choisy, in his "Histoire de l'Architecture," follows Coste in stating that it only became the rule in Persia towards the end of the sixteenth century; but I have shown that it occurs much earlier. He, like Texier, suggests an Indian origin, viz. that it was an imitation of certain bulbous topes to be seen there. He apparently had in mind structures such as those at Ajanta.

Now, as Timur was in India shortly before the building of the Bibi Khanum and the Gur Amir, we must consider the possibility of this Indian origin. In the first place, these topes are solid structures, and not examples of roofing; and the few which are bulbous are quite small, and not the conspicuous and striking buildings likely to be noticed even by a conqueror in his meteoric flight through the country. But could he have seen any double domes with slightly swelling outline? No; for not one of the domed buildings which were standing in the North-West of India in the time of Timur, of which remains have come down to us, have this feature. I have compiled a list of these buildings from Carr Stephen's "Archæology of Delhi" and Fanshawe's "Delhi, Past and Present," and find that there are seventeen of them. They comprise the group of buildings classed by Fergusson as Early, Middle, and Late Pathan. Amongst them are the tombs of Shams-ud-din Altamsh, Rukn-ud-din Firoz Shah, Ghias-ud-din Tughlak Shah, the Juma Musjid of Firuzabad, the Kalan Musjid, and the buildings attributed to Khan Jahan. All the domes found in these buildings are pointed in shape, but low in elevation, and built in horizontal courses. Carr Stephen, speaking of them, remarks that "Domes, the stones of which are held together by the wonderful adhesive qualities of the lime used in those days, without any keystone, have been before remarked on, and are another characteristic of the Mohammedan Indian buildings of the fourteenth century."*

These domes have not a single feature in common with the Gur Amir and Bibi Khanum, yet as they are all of one type they are conclusive evidence as to the style of the period, and completely refute the theory that the double dome had an Indian origin.

Regarding the theory of the Indian origin of the double dome, Saladin† apparently follows Choisy, and, in addition, suggests that it has also certain mechanical advantages, viz. that it tends to the stability of the dome by constituting additional abutment. A more extraordinary statement it is difficult to conceive, since it is obvious that it must act outwardly in the same direction as the thrust of the upper part of the dome itself. Below is a section of the dome of the Gur Amir. The dotted line produced from C shows the extent of the projecting part. Now, the centre of gravity of the projecting part being roughly at B, this part will act with leverage $\frac{AB}{AC}$ about the turning point C, in direction AD. Now, the thrust of the upper part E is in the same direction more or less, and thus the projecting part adds to the difficulty instead of helping matters. This is shown when it comes to practical work by the interior construction of this dome, which has a series of tie-bars T, fixed at their extremities in the lower part of the sides of the dome, and meeting in the centre, where they are carried by a pile of masonry M. They are an imperative necessity to neutralise the unscientific shape chosen for the outer dome, and by their very existence refute Saladin's theory.



SECTION OF GUR AMIR.

It is now clear to us that the shapes of the domes of the Bibi Khanum and Gur Amir could not have sprung from constructive necessities in brick or stone. When we find this to be the case with other features in architecture, we usually find that the feature in question is a copy of construction in wood, *e.g.* the mortised joints of the stone rail round the Sanchi tope, the metopes and triglyphs of the Doric order, the Lycian tombs in the British Museum, &c. Can it be so in the case of the bulbous double dome? Is there, or was there, anywhere in the Moslem world known to Timur a double dome with swelling outline? Yes. At one place, and at one place only, and that was at Damascus, where stood the great Umayyad mosque built by the Khalif Walid in A.D. 705-13, the dome of which in Timur's time was double and of wood.

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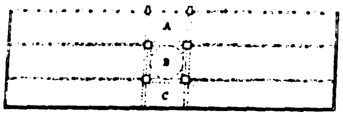
* *Archæology of Delhi*, p. 154.

† *Manuel d'Art Musulman*, vol. i. p. 360.

Its plan was as shown. It consists of three aisles and a transept, at the intersection of which there was a dome B, which was called the Kubbat-al-Nasr (the vulture dome). The angles of this square are vaulted over with squinch pendentives, and the drum resting upon the octagon thus formed is set back 2 feet, so that the dome resting on it has an internal diameter of 43 feet 6 inches. The present dome, which was built at some date subsequent to the burning of the mosque by Timur, is of stone.



PLAN OF MOSQUE AT DAMASCUS.

Descriptions of the mosque at various dates previous to this are to be found in the diaries of the various Arab geographers who, between the ninth and the fourteenth centuries, visited it.

The description from which I propose to quote is that of the Spanish Arab, Ibn Jubair, who visited Damascus in 1184. The part of his description most interesting for our purpose is that which refers to the central dome. Mukaddasi speaks of one dome only. Ibn Jubair, 200 years later, descants on the immense height of the great dome, which "broods over the void." He describes, also, how that it consisted of an external and internal dome, and was raised externally on a drum. From this it may be assumed that Al Walid's dome succumbed in the fire of 1069. He describes his visit to the interior of these two domes:—

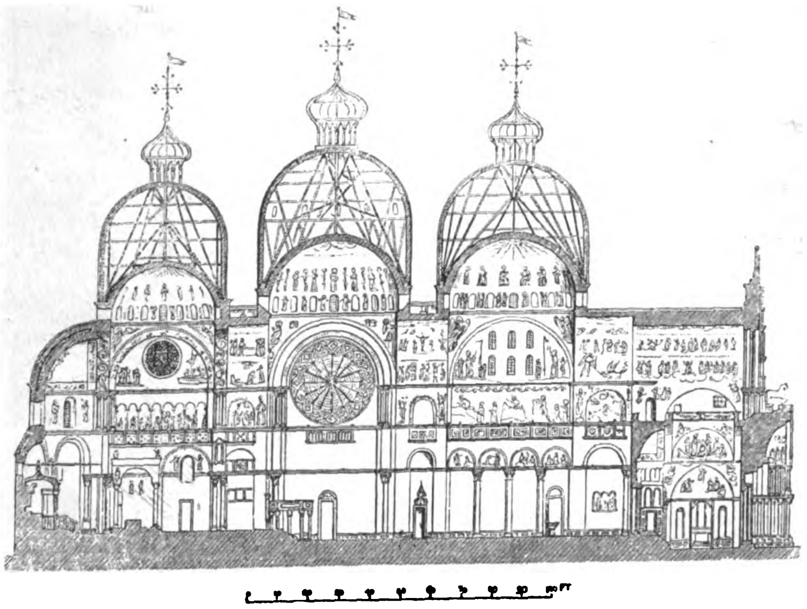
"Verily the entrance to the same, and into the interior where is the inner dome—*like a sphere within a larger sphere*—is from the mosque. We went up by a ladder . . . and walked over the flat roof. After passing over the flat roof we came to the dome, and mounted into it by a ladder set there. We went into the round gangway (this was round the outside of the lead dome). . . . Then we hastened on to the entrance into the interior of the dome, passing through one of the grated windows which open in the lead-work; and before us was a wondrous sight. We passed on over the planking of great wood beams which go all round the inner and smaller dome, which is inside the outer leaden dome, as aforesaid, and there are here two arched windows, through which you look down into the mosque below. From here the men who are down in the mosque look as though they were small children. This dome is round like a sphere, and its structure is made of planks strengthened with stout ribs of wood, bound with bands of iron. The ribs curve over the dome and meet at the summit in a round circle of wood. . . . The Great Leaden Dome covers this inner dome that has just been described. It also is strengthened by wooden ribs bound with iron bands. The number of these ribs is forty-eight. . . . The ribs converge above, and unite in a centre-piece of wood."

One cannot help being struck by the close resemblance of the above description to the domes of the Bibi Khanum and the Gur Amir, with the sole difference that these two are built of brick covered with enamelled tiles. The correspondence is close throughout; the peculiar feature of an inner and outer shell occurs in both, both are ribbed, the Gur Amir having sixty-four against forty-eight, and the shape must have been very similar. That it was slightly bulbous there can be no doubt. Ibn Jubair says that the length of the mosque from east to west (which we know to be 455 feet) was 200 paces; a pace would therefore be just under 27½ inches. He says later on that the circumference of the dome of lead was 80 paces, *i.e.* 182 feet; its diameter, therefore, was 58 feet. Now, the exterior diameter of the base still existing of the drum on which it stood would appear from fig. 100 in "Architecture, East and West," to be about 52 feet. The dome of lead, therefore, must have overhung its base by 3 feet.

Timur appeared before Damascus on January 8, 1400, and the next day negotiations were opened with him by the citizens, and, on his guaranteeing their safety, the Bab Saghin was opened to him. After nearly two months spent in bargaining and extracting a ransom, the place was finally sacked, and on March 4 all the population that remained—men, women, and children—were bound and dragged off. On the 17th Timur ordered the city to be set on fire, and, sparks from the burning city lighting on the Umayyad mosque, it was burnt "till all that was left standing was a wall with no roof, nor door, nor marble."

Timur thus had this great mosque in view for well over two months, and cannot fail to have been impressed, keenly appreciating architecture as he did, with this great building, in his day one of the Four Wonders of the World of mediæval Islam. He was much more likely to have some of its most striking features reproduced for him at Samarkand than he was to copy a tope in India. There is ample evidence that Timur greatly appreciated architecture. He was greatly impressed by the Juma Musjid at Firuzabad (Old Delhi), and took a model of it home. Fanshawe states (p. 264) that he greatly admired the Kutb Minar, and carried off workmen to construct a similar one in Samarkand, which intention, however, was never carried out; and Don Ruy Gonzales de Clavijo, in his account of his embassy to Timur in 1404, relates many anecdotes to the same effect, as does Timur's biographer, Sharaf-ud-din Ali. In addition to this the diameter of the dome at Damascus was 43 feet 6 inches. Now, according to Schubert von Soldern ("Die Baudenkmäler von Samarkand," p. 28), the diameter of the dome of the Bibi Khanum, the first building to be erected by Timur after his visit to Damascus, is 44 feet 3 inches, a difference negligible in domes of such a size.

I therefore think I have shown as nearly as such a thing can be shown, short of a direct contemporary historical



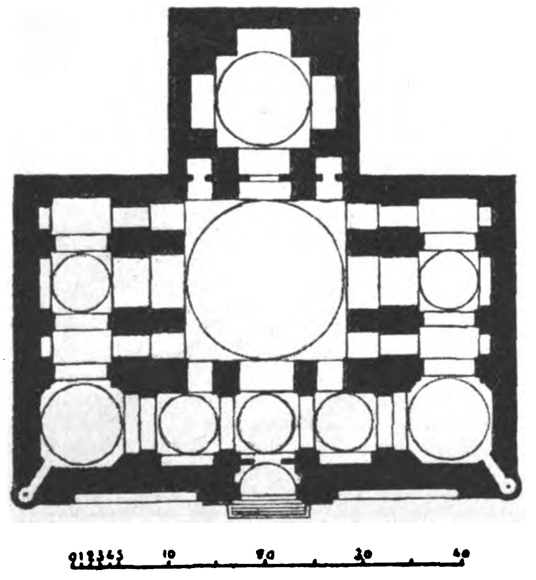
SECTION OF ST. MARK'S, VENICE.—From Fergusson's "Handbook of Architecture."—By permission of Mr. John Murray.

statement to that effect, that this type of dome was first executed in brick by Timur after his return from Damascus, as a copy of a wooden one of the same shape that he saw there.

Ibn Jubair (1184) remarks, and his statement is repeated by Ibn Batutah (1326): "From whatever quarter you approach the city you see this dome, high above all else, as though suspended in the air." It was probably for the sake of its external effect that this form was devised, and came to be adopted elsewhere.*

Before I leave the subject of the wooden dome at Damascus I must add that I think it has not been without its influence elsewhere. I shall give one instance—St. Mark's at Venice. This building, Byzantine in planning and construction, was roofed until the thirteenth century with the low inner domes only. In this respect it resembled most other Byzantine buildings, but in the thirteenth century the huge outer wooden domes of wood covered with lead were added. It has been suggested to me that this was done in consequence of the raising of the Gothic façade which was added about this time, and which hid the low domes, and that to restore their external effect the outer wooden ones were added. Quite so, but whence came this desire for external effect in dome construction? Not from Byzantine architecture. In this style the domes are never designed for external effect, and are frequently lower than a hemisphere. It is true that in late Byzantine work the dome sometimes rests on a high drum pierced with windows, but that is for lighting purposes, and the dome itself remains as shallow as ever, while here we have the drum untouched and the dome made the conspicuous feature. I suggest that it came from Damascus. Venice was a State whose outlook was almost entirely towards the East, with which she traded direct, to the great economic detriment of Constantinople in the thirteenth and fourteenth centuries, and the great Ummayad mosque must have been as familiar to many Venetians as, say, the Taj Mahal is to many English people to-day.

After Timur's death in 1405 the double dome passed from Samarkand to Khurasan, over which it was spread by the Timurides then ruling at Herat. It appears in the mosque of Gawhar Shad at Meshed (1418), and later in the mosque and mausoleum built by Sultan Hüssein Mirza (A.D. 1487-1506) at Herat. Dating midway between these two is the Blue Mosque at Tabriz, built by Jahan Shah (1437-68), which Texier states had a double dome, according to Chardin and Tavernier, who visited it in the seventeenth century before it was wrecked by an earthquake.

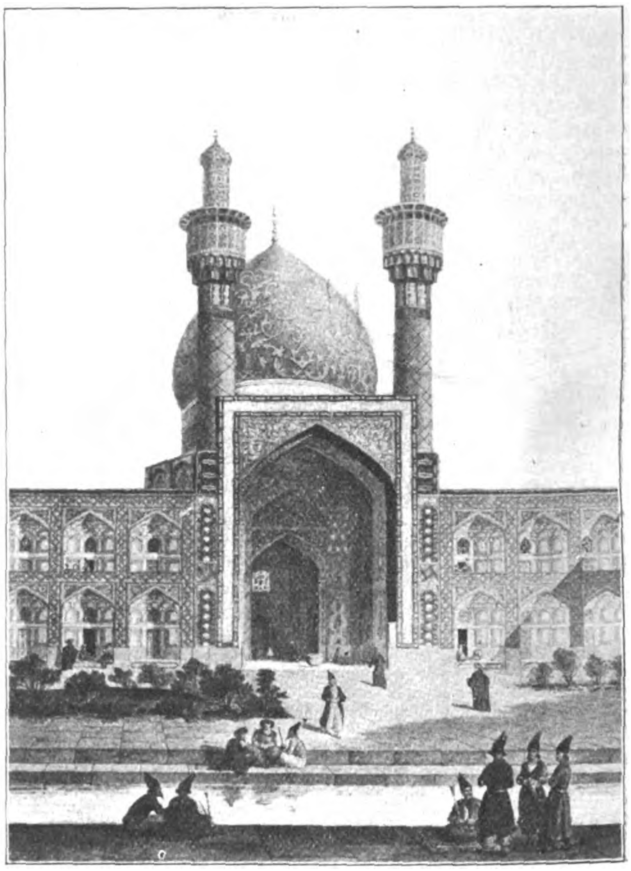


PLAN OF THE BLUE MOSQUE, TABRIZ.

There is about the plan of this mosque, however, something which Fergusson calls Byzantine. I cannot quite see this myself, although the three domes in a row in front of the main dome-chamber seems very unusual, and almost recall a Greek narthex. The nearest approach to this plan that I can find in Byzantine architecture is that of Panhagia Lycodemo at Athens. Should this plan, however, really show Byzantine influence, it is tempting to try to put its date forward a few years, so that it falls into the reign of Uzun Hasan, Jahan Shah's successor, in which case I could suggest an explanation.

Whether this can be done I cannot say, as I am unable to find the ultimate authority on which the attribution of it to Jahan Shah rests. However, could it be attributed to his successor my explanation would be this.

Uzun Hasan was Baiendari of the Ak-koinlu or White Sheep dynasty of Turcomans, and he defeated and killed Jahan Shah in 1468. Uzun Hasan, who ruled at Tabriz, married Despina, the daughter of Calo Johannes, one of the last Comneni Emperors of Trebizond, which startling alliance was the outcome of the desire of the Christian princes of Europe to unite with the Persians against the growing power of the Turks, whose advance they were viewing with dismay. It is easy to conceive a Byzantine influence being introduced under such auspices, especially as the relations with the West were so close at this time that there was a Venetian ambassador, Caterino Zeno, at Uzun Hasan's Court, at whose instance he invaded Asia Minor, but was defeated by Sultan Mohammed II.* Although I do not hold definite views as to the plan of the Blue Mosque, it nevertheless seems to me that there is here scope for interesting research.



MEDRESSEH-I-SHAH HUSSEIN, ISPAHAN.

In the sixteenth and seventeenth centuries we find the double dome with slightly swelling outline in general use for all important buildings, as, for instance, the dome of the Royal Mosque at Isfahan built by Shah 'Abbas in 1612. It is brilliant with glistening tile-work, one of the most striking features of Persian domes. It has windows round its base.

In 1674 the dome of the shrine of Imam Reza, at Meshed, was rebuilt and gilded by Shah Suleiman. Chardin, who is my authority for this statement, was an eyewitness of the work, and he gives also an account of his visit to the workshop of the Shah's goldsmith, where he saw being gilded the copper plates with which the dome was to be covered. It is much the same shape as that last mentioned, except for the absence of windows round the base. This dome, according to Khanikoff, was regilded by Nadir Shah.

While most important domes in Persia are covered with faience, those belonging to sacred shrines are generally gilded, this feature being found in the shrine of Fatima at Kum, and also in Mesopotamia in the domes covering the tombs of Ali and Hussein at Najaf and Kerbela. Some of these gilded domes may be seen glistening thirty miles away.

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* This theory may be found worked out in detail in an article which I contributed to the *Burlington Magazine*, November and December, 1913.

* Sykes, *Ten Thousand Miles in Persia*, p. 65.

Here we have the Medresseh-i-Shah Husein, at Isfahan, built between 1700 and 1710 by Shah Husein. It is about this period that the outline of the double dome begins to get fuller, a tendency which increases rapidly after 1750.

This double dome spread to India, where it first appears in the mausoleum of Humayun, built 1556-59. Humayun succeeded to the throne in 1530, but in 1539 was defeated at Kanauj by Sher Khan Sur, who eventually drove him not only out of India, but even from the kingdom of Kabul. He took refuge in Persia at the Court of Shah Tahmasp, by whose aid he eventually recovered his kingdom from Sher Shah's successor, sixteen years later, in 1555. His stay all these years at the Persian Court explains the form of the dome covering his tomb.

This building is said to be the prototype of the Taj, which is similar in planning and arrangement, and which was commenced in 1632, *i.e.* about seventy-five years later.

To return to Persia, this form of dome under eighteenth-century decadence takes an increasingly bulbous form; in fact, as Saladin says, the greater the swelling of the dome the later the date at which it has been constructed. This swelling form culminates in the mosque of Jalal-ud-din at Shiraz, and in the dome of the Shah Chiragh, at the same place, which *may* date from the time of Kerim Khan (eighteenth century), but which is probably subsequent to the great earthquake in 1824, which, according to J. E. Alexander ("Travels from India to England," p. 125), who was there shortly afterwards, left "not a single dome or minaret standing."

This type followed exactly the same course in India during and after the reign of Aurangzib, the most pronounced and best-known example being, perhaps, the mausoleum of Safdar Jung at Delhi

For present-day practice a good account may be found in Langenegger's "Die Baukunst des Iraq." In fig. 129 he gives a section of a modern dome with double shell, the outer being one brick thick, covered with a layer of tiles. He expressly remarks that it could not stand without the tie bars shown, which supports the view taken earlier in this paper as to this unscientific shape, contrary to the view urged by French writers on the subject. In fig. 132 he gives another section of more massive construction, in which the whole outer shell is supported on a trussed frame. In fig. 130 is an interesting example of modern jerrybuilding, in which may be seen a thin shell built with light rods radiating from a centre which project through it until it is finished, when they are cut off flush and concealed under the final coating of tiles; but I ought to add that Dr. Langenegger says that this style of thing is stronger than perhaps might be expected. As an example of the most extreme form taken by the double dome, I may cite the dome of the shrine of Imam el Horr at Kerbela, given by him in fig. 19.

To sum up, Persian domes may be divided into three groups:—

1. The pre-Mohammedan domes of elliptical shape, as seen at Firuzabad and Sarvistan.
2. The domes of the Mohammedan period down to 1400, which, gradually changing from the earlier type, become pointed, the dome at Sultanieh being the finest example.
3. The double dome introduced by Timur after his stay at Damascus, which, though only of very slightly swelling outline for three centuries, gradually became fuller about 1700, a tendency which culminated in the course of the last hundred years, till it attained at Shiraz an extremely bulbous form.

THE ARCHITECTURAL ASSOCIATION.

A special general meeting of the Architectural Association was held at 18 Tufton Street, Westminster, S.W., on Monday, April 27, at 5 P.M., Mr. Maurice E. Webb (Vice-President) in the chair.

The minutes of the previous meeting having been read and confirmed, Mr. W. D. Cresswell was nominated for membership of the Association, and on the motion of the Chairman, Mr. G. C. Wilkins was elected as a member.

The Chairman then called upon the Secretary, Mr. F. R. Yerbury to read the proposed new by-laws in connection with country membership of the Association, as follows:—

Any gentleman engaged professionally in the study or practice of architecture who is a member of an Architectural Society recognised by the Council of the Architectural Association, the headquarters of such Society being not less than fifty miles distance from Charing Cross, is eligible for nomination as a country member.

No one shall remain a country member after residing within fifty miles of Charing Cross for one year or more.

Application forms for country membership must be signed by the Secretary or other officer of the Society of which the candidate is a member.

The annual subscription of each country member shall be 7*s.* 6*d.*

Country members shall not be entitled to hold any office or to serve on the Council or to vote either at the election of officers and Council of the Association or in connection with any other matter.

Country members shall be entitled to such privileges as the Council of the Association may from time to time determine, and shall also be bound by all by-laws and rules governing ordinary membership.

Mr. F. Winton Newman proposed that the by-laws be adopted. Mr. H. Austen Hall (Vice-President) seconded the proposition, which was carried unanimously.

The meeting then terminated.

ANNUAL DINNER OF THE DISTRICT SURVEYORS' ASSOCIATION (INCORPORATED).

This dinner was held at the Connaught Rooms, Great Queen Street, W.C., on April 23.

The President, Mr. Ellis Marsland, District Surveyor of Camberwell, occupied the chair, and was supported by the following guests: Messrs. Kingsley Wood, L.C.C. (Chairman of the Building Act Committee), A. A. Hudson, K.C. (President of the Tribunal of Appeal), George Hubbard, V.P., R.I.B.A., J. Briggs (Chief Assistant Architect, L.C.C.), Sladen (Lieutenant, R.N., Chief of the Fire Brigade), S. G. Gamble, D. Andrews, A. Dovaston, F. S. Capon, J. T. Stransom, Seagar Berry, A. O. Collard, Gilbert H. Lovegrove, S. Burgoine, George Billings, C.C., E. J. Sadgrove, Norman Scorgie, W. Stevens, J. H. Quilter, A. E. Pridmore, A. W. Claremont, L.C.C., J. A. Cheston, P. J. Tillett, and the following members: Messrs. W. Grellier (Vice-President), H. A. Legge (Treasurer), Bernard Dicksee (Hon. Secretary), Henry Lovegrove (Past President), A. Conder (Past President), George Tolley, A. A. Fillery, H. N. Kerr, O. C. Hills, Baxter Greig, H. T. Bromley, W. E. Davidge, W. G. Perkins, L. R. Ford, E. A. Young, J. Todd, R. P. Notley, G. A. Gill Knight, A. G. Morrice, A. H. Glasson, R. H. J. Mayhew, C. A. Daubney, A. Crow, A. W. Tanner, Professor Elsey Smith, Percy Black, T. E. Mundy, E. W. Lees, and Horace Cheston.

The following sent letters of regret at being unable to attend: Sir Laurence Gomme, Sir J. Dickenson, Messrs. W. E. Riley, Rowland Plumbe, John Slater, F. Wallen, J. Ryde, K.C., Douglass Mathews, and Passmore.

After the loyal toast the President proposed "The London County Council," which was responded to by Mr. Kingsley Wood. The toast of "The District Surveyors' Association" was proposed by Mr. A. A. Hudson, K.C., and responded to by Mr. Ellis Marsland (President).

The toast of "The Visitors" was proposed by Mr. Henry Lovegrove (Past President), and responded to by Mr. George Hubbard and Mr. J. Briggs.

An excellent programme of music was provided by Miss Phyllis Dicksee, Miss Marjorie Ayling, Mr. W. Cooper, Mr A. Tomlinson, and Mr. Vivian Bond, with Miss Edith Harriley as accompanist.

THE CONCRETE INSTITUTE.

At the last ordinary general meeting on April 16, Mr. Oscar Faber, B.Sc., Assoc.M.Inst.C.E., A.M.I.E.E., A.C.G.I., M.C.I., read a paper, entitled "The Design of Steel and Reinforced Concrete Pillars, with Special Reference to Secondary and Accidental Stresses," of which the following is a summary:—Mr. Faber divided his paper into two sections. He first dealt with jointed construction, such as structural steel, and, secondly, with monolithic construction, such as reinforced concrete. He first dealt with the case of a girder resting on the end of a steel stanchion, and stated that in several drawing offices he knew as a fact that the construction in such a case would be treated as centrally loaded. He proceeded to argue that such was not the case, because when a load was applied to the beam it would deflect, and the end, originally horizontal, would assume a certain slope, and therefore one of two things would happen—namely, (*a*) the end of the girder would lift, in which case the whole load would be carried on one flange, so causing eccentric loading; or (*b*) the column must be constrained to adapt itself to the slope of the girder, in which case a bending moment would be introduced into the stanchion by such constraint.

In this way he showed that increases in strains of 140 and 480 per cent. respectively were obtainable.

Mr. Faber took secondly for consideration the case of a girder resting on an angle bracket. He argued that if an ordinary bracket were used the action would not be very far from the face of the leg of the angle, since the horizontal leg of the angle would not be strong enough to resist the bending moment which would be produced in it. It followed therefore that although the horizontal leg of the angle served a useful purpose in connecting the girder to the stanchion, it must not be thought capable of supporting it. In effect, the construction became dangerous if the clearing between the face of the stanchion and the edge of the girder exceeded the thickness of the angle.

The author of the paper supposed there were few engineers present who would assert that this limiting clearance was never exceeded in practice, and an engineer had to carefully consider whether it was desirable to employ this type of bracket except for quite small reactions. He next considered a stiffened bracket.

Confining attention to cases where the workmanship was good, he assumed that the stiffening angles had been machined or forged to fit the angle bracket perfectly, and that the bracket was initially horizontal. It followed that when the girder deflected there was a tendency for it to rest on the outer edge of the bracket, and for very small loads there was no doubt that this actually happened. As the load increased the outer edge of the stiffeners yielded appreciably, and a greater area supported the load, the reaction gradually approaching the face of the column. The author's practice was to make the web of the stiffeners sufficient in area to carry the reaction under a uniform stress of 7½ tons per square inch.

In calculating the resistance he ignored a large area of steel in the flange of the stiffeners and in the vertical leg of the angle bracket, because

(*a*) The clearance between the face of the stanchion and the end of the girder might be sufficient to prevent bearing on this steel;

(*b*) Even if it was not, this material could not be stressed appreciably until the stiffener webs are greatly overstressed.

In any case the difference in cost between good and bad brackets was an extremely small percentage of the cost of the steelwork, and a smaller one of the cost of the building, and he declined to endanger the "ship" for what in this case might be fairly described as a "ha'porth of tar."

It has long been recognised in good practice that the machining of the ends of stanchions was of the first importance. Yet there were at least two constructional works in London which, with a view to economy, omitted this item of workmanship, and were erecting considerable tonnages of stanchions with the ends left so that the upper tier had contact with the lower tier over the width of one plate only, the remainder of the section having varying clearances often amounting to ⅛ inch. The stress was still gaily calculated as uniformly distributed, and it had been explained to the author that "steel is a ductile material which would yield and flow" and perform other convenient antics, "until the stress was uniformly distributed." The effect of loading such a stanchion was to cause the plates to slide past one another and to partly shear through the rivets. Even where stanchions are machined a careful engineer must satisfy himself that they were machined truly square. Architects should bear in mind also that, apart from the danger involved in these practices, the yielding of stanchions and brackets before they obtain their bearing involved unknown and unintended stresses on the stonework, and, to the author's knowledge, many a beautiful and costly façade and interior decorative work had been badly cracked by bad steelwork details and workmanship.

From the consideration of Case I, it would appear to follow that it was desirable to make these joints somewhat flexible, and occasionally this was so. If buildings were braced with diagonal braces, he should say without question that stiffness of connections should be avoided.

Unfortunately, such bracing had obvious objections, and the whole stiffness of practical buildings against wind lay in the stiffness between beams and stanchions.

There was, therefore, no alternative but to make the joints stiff and to make the necessary allowance for these secondary stresses in the design of stanchions.

This might be onerous, both in requiring extra labour and an increase in material, but a conscientious engineer would grudge neither the one nor the other.

Mr. Faber then dealt with the design of cleats. A common method of calculating the safe reaction of a cleat was to take it as the sum of the resistances of the rivets, the effect being to neglect the very appreciable stresses due to bending.

Dealing with the bracing of pillars, Mr. Faber said that it was well known that pillars failed by buckling, and that their stress was to be determined with reference to their length. This phenomenon was fairly well understood, and there are sufficient experimental data available to make the design of pillars, with reference to what he might call primary buckling, a comparatively simple matter. The phenomenon to which he referred was that of secondary buckling, in which the pillar, instead of buckling as a whole, fails by the individual buckling of its component members. On this subject there appeared to be practically no experimental data, and practically no formulæ or rules for the guidance of a designer. The importance of this problem might be gathered from the fact that bad design in the matter of bracing in pillars was certainly responsible for the two greatest failures in recent years—the Quebec Bridge of 1907 and the gasholder in Hamburg.

Mr. Faber then proceeded to the second portion of his paper treating of monolithic construction and the eccentricity of beam reactions on pillars therein. Whereas in steel construction the eccentricity was very definite and easily calculated with most common types of brackets, with reinforced concrete the eccentricity could only be calculated from considerations of elastic flexure, and the problem was a much more difficult one.

There was, however, no longer any excuse for claiming ambiguity, since the problem had been analysed very completely in "Reinforced Concrete Design" and numerical examples fully worked out.

The author took as an example the case of the outside column of the building, working it out in detail, showing very great increases in stress over the values as ordinarily calculated. If thoughts of eccentricity were banished either from ignorance or under stress of competition the actual maximum stress would have been 1,300 lb. per square inch.

It is interesting to note that the outside pillar in good design did not suffer much reduction in size up through the last three tiers. This was in accordance with the best practice in steel-frame buildings.

In conclusion, Mr. Faber said that, without suggesting for a moment that the engineering staffs of several constructional firms were not fully as efficient as many consulting engineers, he did feel that the system of competitive designs and lump-sum prices penalised good designing by such firms, and secured the work to those responsible for the most risky design. The only correct system, in his opinion, was for the architect to entrust the design to an engineer who had his confidence, and to invite tenders on the design which he prepared. The architect and building owner were then likely to obtain a sound construction, and if they used their discretion in the choice of the engineer the work would not cost more than the minimum consistent with safety.

The best constructional firms would be benefited by being protected from competition with weak design and bad workmanship, and he might state that in considering tenders he considered that an engineer should give preference to those firms whose detailing and workmanship he knew he could rely upon. He urged this in the interest of the building owner, knowing as he did the importance of good details and good workmanship.

The only man to suffer was the man who would take great risks and do shoddier work in order to secure a contract, and he could not say that he had much sympathy with him.

The reading of the paper was succeeded by a discussion, in which the following took part: Professor Henry Adams, M.Inst.C.E., &c., President-elect Concrete Institute; Mr. M. E. Yeatman, M.A., M.Inst.C.E., M.Am.Soc.C.E., Member of Council C.I.; Mr. S. Bylander, M.C.I.; Mr. Ewart S. Andrews, B.Sc., M.C.I.; Mr. E. G. Beck, Wh. Ex., Assoc.M.Inst.C.E.; Mr. W. Cyril Cocking, M.C.I.; Mr. W. A. Green, M.A., Assoc.M.Inst.C.E., M.C.I.; Mr. E. Fiander Etchells, F.Phys.Soc., A.M.I.Mech.E., Member of Council C.I.; and Mr. E. P. Wells, J.P., President C.I.

The second informal meeting of the junior members will be held to-day, Friday, May 1, at 6.30 P.M., in the Council Room at Denison House, 296 Vauxhall Bridge Road, Westminster, when Mr. E. Fiander Etchells, F.Phys.Soc., M.Math.A., A.M.I.Mech.E., Member of Council C.I., will take the chair. The business before the meeting will be a continuation of the discussion on this paper.

PRESERVATION OF ANCIENT MONUMENTS IN FRANCE.

A White Paper was recently issued which contains a report from Sir Francis Bertie, British Ambassador in Paris, giving a translation of the law of December 31, 1913, for the preservation of ancient monuments in France. The subject is one of especial interest at the present time, and so we quote the report in full:—

Immovable Property.

Article 1.—Properties, of which the preservation, from an historical or artistic point of view, is a matter of public interest, shall be scheduled by the Minister of Fine Arts as historic monuments, in whole or in part, according to the distinctions established by the following articles.

The following shall be included among the immovable objects to be scheduled under the terms of this law: Megaliths, land containing prehistoric sites or deposits, and buildings that require to be scheduled in order to isolate, disencumber, or sanitate a property scheduled or which it is proposed to schedule.

From the day on which the Department of Fine Arts notifies the proprietor that it is proposed to schedule a property, all the effects of inclusion in the schedule shall apply with full legal force to the property referred to. They cease to apply if the decision to schedule is not carried into effect within six months of this notification.

Any order or decree notifying, after the promulgation of this law, that a property has been scheduled shall be registered through the Department of Fine Arts in the mortgage office of the district where the scheduled property is situated. No charge shall be made on behalf of the Treasury for such registration.

Article 2.—The following shall be considered as duly scheduled before the promulgation of this law: (1) Properties mentioned in the general list of scheduled monuments, published officially in 1900 by the Governing Body of the Fine Arts; (2) properties which, whether included or not in this list, have been the subject of orders or decrees scheduling them in accordance with the provisions of the law of March 30, 1887.

Within three months a list of the properties considered as scheduled before the promulgation of this law shall be published in the *Official Gazette*. In the case of each of the said properties an extract shall be made from the list containing all information concerning it; this extract shall be registered at the mortgage office of the district where the property is situated through the Department of Fine Arts. No charge shall be made on behalf of the Treasury for such registration.

The list of properties scheduled shall be kept up to date and revised at least every ten years.

Further, within three years a supplementary inventory shall be made of all buildings or parts of buildings, whether public or private, which, although they do not justify a demand that they should be scheduled at once, are nevertheless of sufficient archæological interest to render their preservation desirable. Inclusion in this list shall be notified to the owners and shall impose on them the obligation to carry out no alteration of the building scheduled without giving the prefecture fifteen days' notice of their intention.

Article 3.—A property belonging to the State shall be scheduled by an order of the Minister of Fine Arts, if the Minister responsible for the said property concurs therein.

In the contrary case the scheduling shall be ordered by a decree of the Council of State.

Article 4.—A property belonging to a department, commune, or public institution shall be scheduled by an order of the Minister of Fine Arts, subject to the consent of the owner and the concurrence of the Minister under whose authority it is placed.

In case of disagreement the scheduling shall be ordered by a decree of the Council of State.

Article 5.—A property belonging to some person not enumerated in Articles 3 and 4 shall be scheduled by an order of the Minister of Fine Arts, if the owner consents. The order shall determine the conditions under which it is scheduled. If the interpretation or execution of this act gives rise to dispute it shall be decided by the Minister of Fine Arts, with appeal to the Council of State in a judicial capacity.

In default of the owner's consent, a decree of the Council of State shall declare the property scheduled. The placing of a property in the schedule may involve the payment of a compensation for loss which may be suffered by the owner from the operation of the servitude resulting from the property being scheduled by order under this paragraph. The claim must be made within six months of the date of notification of the decree scheduling the property; this act shall inform the proprietor of his contingent right to compensation. Suits relative to compensation are to be heard in the first instance by the justice of the peace of the canton; if there is a question of valuation a single valuer may be appointed. If the amount of the claim exceeds 300 fr. an appeal shall lie to the civil tribunal.

Article 6.—The Minister of Fine Arts may always, with due regard to the provisions of the law of May 3, 1841, proceed in the name of the State to the expropriation of properties already scheduled, or which it is proposed to schedule, by reason of the public interest they offer from an historical or artistic point of view. Departments and communes shall have the same power.

They shall enjoy the same power with regard to properties which it is necessary to acquire in order to disencumber, separate, or sanitate scheduled property, or one which it is proposed to schedule.

In these various cases public benefit shall be declared by a decree of the Council of State.

Article 7.—From the day on which the Department of Fine Arts shall notify the owner of property which is not scheduled its intention to proceed to the expropriation of that property, all the effects of scheduling a property shall apply with full legal force to the property in question. They shall cease to apply if declaration of public benefit be not made within six months of notification.

When public benefit has been declared the property may be scheduled without any further formalities by an order of the Minister of Fine Arts. In default of an order scheduling it, it shall nevertheless remain provisionally subject to all the effects of being scheduled; but this liability ceases to have legal force if, within three months of the declaration of public benefit, the Department does not proceed to obtain an order of expropriation.

Article 8.—The effects of being scheduled shall adhere to the property scheduled, no matter into whose possession it may pass.

Whosoever alienates a scheduled property shall be required to acquaint the person who acquires it with the fact that it is in the schedule.

Every alienation of a scheduled property shall be notified within fifteen days to the Minister of Fine Arts by the person who has authorised it.

No property belonging to the State, to a department, a commune, or a public institution may be alienated until the Minister of Fine Arts has been asked to give his opinion. He shall give it within fifteen days of notification. The Minister has the right, within five years, to have any alienation declared void if authorised without the observance of this formality.

Article 9.—No scheduled property or portion thereof may be destroyed or moved, nor may it be made the subject of any works of restoration, repair, or other alteration whatever unless the Minister of Fine Arts has given his consent thereto.

Work authorised by the Minister shall be carried out under the supervision of his Department.

The Minister of Fine Arts may always direct his Department to carry out at the expense of the State, with the co-operation in certain circumstances of the interested parties, works of repair or maintenance which are considered indispensable for the preservation of scheduled monuments not belonging to the State.

Article 10.—To assure the execution of urgent works for strengthening scheduled properties, the Department of Fine Arts, failing amicable agreement with the owners, may, if necessary, authorise the temporary occupation of these and neighbouring properties.

Such occupation shall be prescribed by a prefectoral order previously notified to the owner, and its duration shall in no case exceed six months.

In case of damage caused thereby this occupation shall be a ground for compensation, which shall be settled in the manner provided for by the law of December 29, 1892.

Article 11.—No building scheduled, or which it is proposed to schedule, shall form the subject of an inquiry with a view to expropriation in the public interest until the Minister of Fine Arts has been asked for his opinion.

Article 12.—No new building shall be erected against a scheduled property without the special permission of the Minister of Fine Arts having been obtained.

No one may acquire prescriptive rights over a scheduled property.

Legal servitudes which may cause damage to monuments shall not apply to scheduled properties.

No servitude may be imposed by agreement on a scheduled property except with the consent of the Minister of Fine Arts.

Article 13.—The total or partial removal from the list of scheduled properties of such property shall be pronounced by a decree of the Council of State, either at the instance of the Minister of Fine Arts or at the request of the owner. The fact that a property has been removed from the schedule shall be notified to the interested parties and be registered in the mortgage office of the district where the property is situated.

Movable Objects.

Article 14.—Movable objects, both those which are movable in the true sense of the word and those which are movable only as regards their use, if their preservation is a matter of public interest from an historical or an artistic point of view, may be scheduled by the Minister of Fine Arts.

The effects of being placed on the schedule shall hold good in the case of objects which are immovable as regards their use if they become once more movable in the true sense of the word.

Article 15.—The scheduling of movable objects shall be notified by an order of the Minister of Fine Arts when the object belongs to the State, to a department, a commune, or to a public institution. It shall be notified to the parties interested.

The scheduling shall become final if the responsible Minister or the public body to which the object belongs have not protested within six months from the time when the notification was made to them. In the case of protest the matter shall be decided by a decree of the Council of State. Nevertheless, from the date of notification all the effects of scheduling shall apply provisionally and with full force of law to the movable object in question.

Article 16.—Movable objects which belong to any person other than those enumerated in the preceding article may be scheduled, with the consent of the owner, by an order of the Minister of Fine Arts.

Failing the owner's consent, the scheduling can only be notified by a special law.

Article 17.—A general list shall be drawn up by the Minister of Fine Arts of all the movable objects scheduled, which shall be arranged according to the departments. A copy of this list, kept up to date, shall be deposited at the Ministry of Fine Arts and at the prefecture of each department. It may be communicated (to the public) according to the conditions laid down by an administrative regulation.

Article 18.—All movable objects when they have been scheduled shall be imprescriptible.

Scheduled objects which belong to the State shall be inalienable.

Scheduled objects which belong to a department, to a commune, to a public institution, or to an institution of public utility may only be alienated with the authorisation of the Minister of Fine Arts, and according to the forms laid down by the laws and regulations. The ownership of them may only be transferred to the State, to a public body, or to an institution of public utility.

Article 19.—The effects of scheduling shall adhere to the object, no matter into whose possession it may pass.

Any private person who alienates a scheduled object shall be bound to acquaint the person who acquires it with the fact that it is on the schedule.

Any alienation must be notified to the Ministry of Fine Arts within fifteen days of its taking effect by the person who has authorised it.

Article 20.—Any purchase made in violation of Paragraphs 2 and 3 of Article 18 shall be null and void. Suits to annul any such purchase or for recovery may be brought at any time either by the Minister of Fine Arts or by the original owner. These suits shall not prejudice actions for damages which may be brought either against the contracting parties jointly responsible, or against the public officer who has been party to the alienation. When an illegal alienation has been authorised by a public body, or by an institution of public utility, the action for damages shall be brought by the Minister of Fine Arts in the name of and for the profit of the State.

A *bona-fide* purchaser, or subsequent purchaser from whom the object is reclaimed, shall have a right to the repayment of the purchase price; if the claim is brought by the Minister of Fine Arts he may sue the original vendor for the total amount of compensation which he shall have had to pay to the purchaser or subsequent purchaser.

The provisions of the present article shall apply to stolen and lost objects.

Article 21.—The exportation from France of objects on the schedule is prohibited.

Article 22.—Scheduled objects may not be altered, repaired, or restored without the authorisation of the Minister of Fine Arts, and except under the supervision of his Department.

Article 23.—The inspection and checking of the movable objects on the schedule shall be conducted by the Department of Fine Arts at least every five years.

Further, the owners or the holders of these objects shall be obliged to show them to the accredited agents of the Minister of Fine Arts whenever they are required to do so.

Article 24.—The removal of any movable object from the schedule may be decreed by the Minister of Fine Arts either on his own initiative or at the demand of the owner. It shall be notified to the parties interested.

Concerning the Custody and Preservation of Historic Monuments.

Article 25.—The different State services, the departments, the communes, and all public institutions or institutions of public utility are to provide for the custody and preservation of any scheduled immovable objects in their possession, or which are assigned to or deposited with them, and to take the necessary measures for the purpose.

The department or commune shall defray the expenditure necessitated by these measures, with the exception of such expenditure as is incurred in the construction or reconstruction of premises.

In case of a department or commune failing to take the measures considered necessary by the Minister of Fine Arts, the said Minister may on his own initiative provide for the taking of such measures after the department or commune has been summoned to do so without effect.

In consideration of the expenses borne by them in the execution of these measures, the departments and communes may be authorised to establish an entrance fee, the amount of which shall be fixed by the prefect with the approval of the Minister of Fine Arts.

Article 26.—When the administration of the Department of Fine Arts is of the opinion that the preservation or the safety of a scheduled object belonging to a department, to a commune, or a public institution is endangered, and when the body which owns the object to which it is assigned or with which it is deposited is unwilling or unable immediately to take the measures considered necessary by the Department in order to remedy this state of affairs, the Minister of Fine Arts may direct, by an order showing cause, the immediate taking of such measures of preservation as may be expedient at the expense of his Department, and may likewise order, in cases where the necessity is clearly shown, the provisional transfer of the object to a cathedral treasury if it is intended for religious uses, or, if not, to a museum or other public place belonging to the nation, to a department or a commune which affords the desired guarantees for safe custody, and which is, as far as possible, situated in the neighbourhood of the site originally occupied by the object in question.

Within three months from the date of this provisional transfer the conditions necessary for the custody and preservation of the object in its original position shall be laid down by a commission convoked by the prefect, and composed: (1) Of the prefect, president *ex officio*; (2) of a delegate from the Ministry of Fine Arts; (3) of the departmental archivist; (4) of the architect for historic monuments of the Department; (5) of a president or secretary of a local historical, archæological, or artistic association, designated for this purpose by an order of the Minister of Fine Arts for a period of three years; (6) of the mayor of the commune; (7) of the councillor-general of the canton.

The body which owns the object to which it is assigned or with which it is deposited may at any time have the object restored to its original site on proving that the required conditions can in future be complied with there.

Article 27.—The custodians of immovables or of scheduled objects belonging to the departments, the communes, or to public institutions are to be approved and appointed by the prefect.

The prefect is obliged to make known his approval or his refusal to approve within a month. In the event of the public body concerned failing to propose a custodian for the approval of the prefect, the latter may appoint one on his own initiative.

The amount of the custodian's salary shall be approved by the prefect.

The prefect alone can dismiss custodians. They shall be under oath.

Excavations and Discoveries.

Article 28.—Whenever, in consequence of excavations, of works, or of some other act, monuments, ruins, inscriptions, or objects which may possess archæological, historical, or artistic interest have been discovered on lands belonging to the State, to a department, to a commune, to a public institution, or to an institution of public utility, the mayor of the commune shall take steps to provide for the temporary preservation of the objects discovered, and shall immediately inform the prefect of the measures he has taken.

The prefect shall refer the matter as soon as possible to the Minister of Fine Arts, who shall determine the precise measures to be taken.

If the discovery takes place on the land of a private individual the mayor shall inform the prefect. On the prefect's report the Minister may require the expropriation of the said land, in whole or in part, on the ground of public expediency, in accordance with the forms of the law of May 3, 1841.

Penal Provisions.

Article 29.—Any person infringing the provisions of Paragraph 4 of Article 2 (alteration, without preliminary notice, of a building included in the supplementary inventory), of Paragraphs 2 and 3 of Article 8 (alienation of a scheduled property), of Paragraphs 2 and 3 of Article 19 (alienation of a scheduled movable object), or of Paragraph 2 of Article 23 (production of scheduled movable objects), shall be punished with a fine of not less than 16 fr. and not more than 300 fr.

Article 30.—Any person infringing the provisions of Paragraph 3 of Article 1 of this law (effects of a proposal to schedule a property), of Article 7 (effects of the notification of a demand for expropriation), of Paragraphs 1 and 2 of Article 9 (alteration of a scheduled property), of Article 12 (new buildings, servitudes), or of Article 22 (alteration of a scheduled movable object), shall be punished with a fine of not less than 16 fr. and not more than 1,500 fr.; without prejudice to the action for damages which may be brought against those responsible for the work which has been done or the measures which have been taken in violation of the above-mentioned articles.

Article 31.—Whoever shall alienate, knowingly acquire, or export a scheduled movable object in violation of Article 18 or of Article 21 of this law, shall be punished with a fine of not less than 100 fr. and not more than 10,000 fr., and with imprisonment for from six days to three months, or with one of these two penalties alone, without prejudice to the actions for damages contemplated in Paragraph 1 of Article 20.

Article 32.—Whoever shall with intention destroy, demolish, mutilate, or deface an immovable or a scheduled movable object shall incur the penalties contained in Article 257 of the Penal Code, without prejudice to any action for damages.

Article 33.—The offences mentioned in the four preceding articles shall be established at the instance of the Minister of Fine Arts. This may be done by means of official reports drawn up by the curators or custodians of scheduled properties or movable objects, who have been duly sworn for this purpose.

Article 34.—Every curator or custodian who, in consequence of serious negligence, shall allow either a scheduled property or movable object to be destroyed, demolished, mutilated, defaced, or removed, shall be punished with imprisonment for from eight days to three months and with a fine of not less than 16 fr. and not more than 300 fr., or with one only of these penalties.

Article 35.—Article 463 of the Penal Code is applicable in the cases provided for in this chapter.

Miscellaneous Provisions.

Article 36.—The present law may be extended to Algeria and to the colonies by public administrative regulations, which shall determine under what conditions and in what form it shall there apply.

Until the promulgation of the regulations concerning Algeria, Article 16 of the law of March 30, 1887, shall remain applicable to that possession.

Article 37.—A public administrative regulation shall determine the details of the application of this law.

The regulation shall be issued after consulting the Commission of Historic Monuments.

This Commission shall also be consulted by the Minister of Fine Arts concerning every decision that is taken in the execution of this law.

Article 38.—The provisions of this law shall apply to all objects, movable and immovable, which have been duly entered on the schedule before its promulgation.

Article 39.—The laws of March 30, 1887, of July 19, 1909, and of February 16, 1912, concerning the preservation of monuments and of works of art of historical or artistic interest, are repealed, as also are Paragraphs 4 and 5 of Article 17 of the law of December 9, 1905, on the separation of Church and State, and in general all provisions which are contrary to this law.

This law, which has been discussed and passed by the Senate and by the Chamber of Deputies, shall be enforced as a State Law.

THE METAMORPHOSIS OF THE BASEMENT HOUSE.*

Public opinion during the last ten or fifteen years has revolted against the basement house, but the revolt was in many cases not solely on account of the existence of the basement. Other factors entered in too numerous to mention

Modern sanitary science says that the basement house must be ended or mended; the basement as a "living" place abolished or remodelled. The remodelling of the basement house either for service purposes (as in the case of the more expensive town houses) or as cellars, furnace rooms, &c. (as in the smaller houses), is a sanitary work worthy of the consideration of the progressive landlord as a strictly business and paying proposition, because there are pros and cons both in the case of the suburban house as a home and in that of town residences, large or small.

The basement house may once more come to its own, because the modern sanitary engineer can, by dispensing with cumbrous solid fuel, by installing lifts and other labour-saving appliances, very well transform and give a new lease of life to property which might otherwise hopelessly depreciate beyond repair. This is more especially true of well-built and once-fashionable houses within easy distance of any of our great parks, and in districts which still have the advantage of providing the tenant with a more or less fashionable address. A basement can only be dispensed with as a "living" place where modern space-saving, labour-saving and dirt-saving methods of cooking and heating are installed, and where coal-cellars, ashbins, &c., become unnecessary.

The House in Terms of "Health" and Labour."

From the point of view of the mistress of the house, architecture is very largely to be considered in terms—

(*a*) Of health and happiness.
(*b*) Of domestic labour.

The latter may perhaps without exaggeration be regarded as the more important of the two, because the successful or unsuccessful working out of the labour problem in any household is the foundation of its health and happiness or the reverse.

There are all the grades and types of house in between the cottage and the mansion, each with its separate problem, from the "maid-of-all-work" type of house up to that with any number of servants you like to mention. In all of them the fuel and light problem is a very serious factor, not only in providing health and comfort, but in making or saving labour, and therefore in governing the management of the family budget.

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* Abstract of a Paper entitled "Problems of Domestic Lighting, Heating and Cooking from the Women's Point of View, with Special Reference to the Basement House," by Mrs. Cloudesley Brereton, Officier d'Académie, M.R.San.I., F.I.H., &c., read before the Institute of Sanitary Engineers.

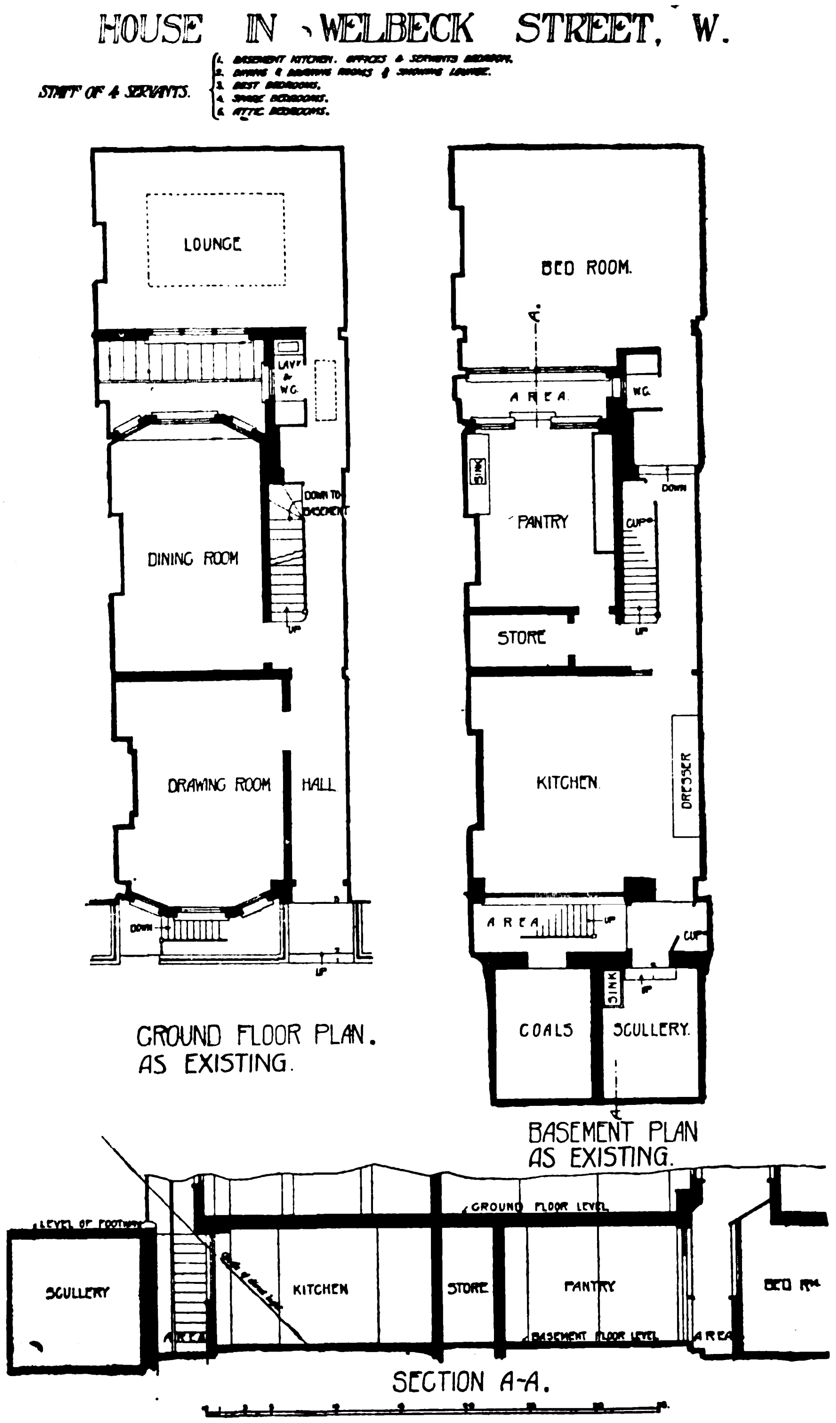
The unfortunate and overworked general wisely gives notice, and the servant problem may or may not then and there be ended so far as she is personally concerned.

But the wife and mother cannot give notice; but what a far too large percentage of them have done is to join that large army of women fast growing old, and unnecessarily invalided at an age when they ought to be still in their prime, and this for reasons which men could well have avoided by giving half as much thought to domestic engineering as they have given to labour-saving devices in their offices and workshops.

Reform of Basement Property a Paying Proposition.

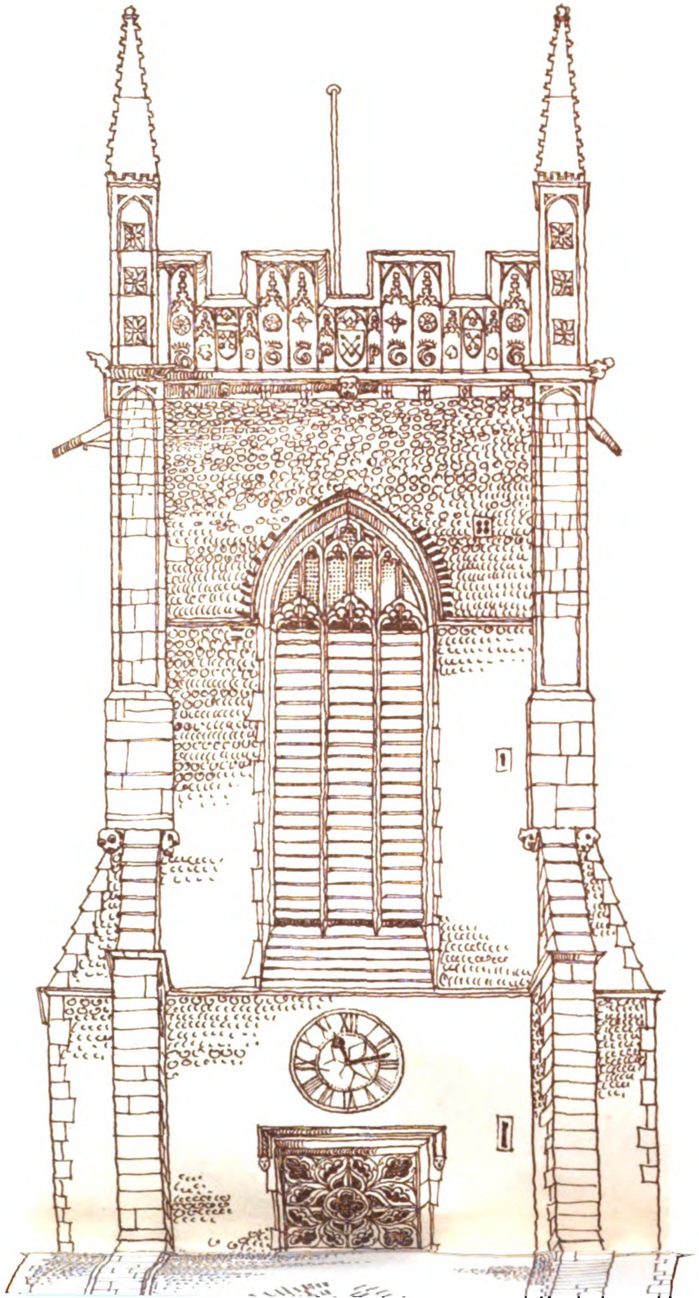
I wish landed princes like Mr. Mallaby-Deeley and Lord Howard de Walden would take up the question as a business proposition, with advice from some qualified woman as to particular plans for particular houses on the side of domestic engineering definitely affecting women's work in the home, and from the learned men on the more technical points of structure and details relating to our intricate by-laws and so on. Lord Howard de Walden and other rich property owners might do a great deal for the beautifying of London and the alleviating of the drudgery of women in the home on a purely business and paying basis if the capital outlay were made wisely by starting on their own property. I for my part believe so strongly in the possibility of a sanitary future for the remodelled basement house that were I free to do so I would be willing to take up a share in the work on a business basis and to depend for my fee on a percentage of the increase in rental value on the sites experimented on, if proper steps were taken

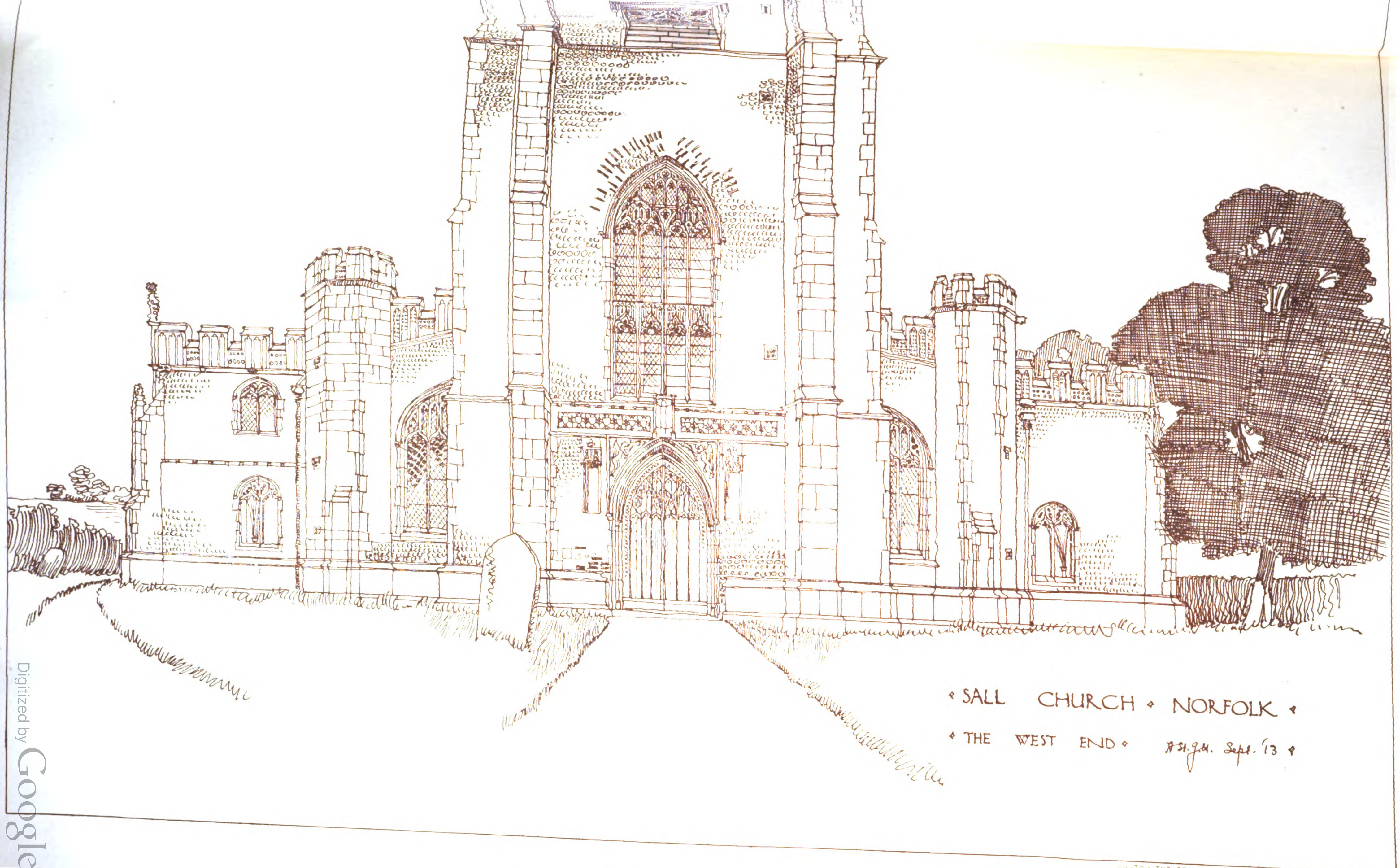
5.


HOUSE IN WELBECK STREET, W.
STAFF OF 4 SERVANTS.
1. BASEMENT KITCHEN, OFFICES & SERVANTS BEDROOM.
2. DINING & DRAWING ROOMS & SMOKING LOUNGE.
3. BEST BEDROOMS.
4. SPARE BEDROOMS.
5. ATTIC BEDROOMS.
LOUNGE
LAVY & W.C.
DOWN TO BASEMENT
DINING ROOM
UP
DRAWING ROOM
HALL
DOWN
UP
GROUND FLOOR PLAN. AS EXISTING.
BED ROOM.
A
W.C.
AREA
SINK
PANTRY
CUP.
DOWN
STORE
UP
KITCHEN
DRESSER
AREA
UP
CUP.
SINK
COALS
SCULLERY.
BASEMENT PLAN AS EXISTING.
LEVEL OF FOOTWAY
GROUND FLOOR LEVEL
SCULLERY
AREA
KITCHEN
STORE
PANTRY
BASEMENT FLOOR LEVEL
AREA
BED RM.
SECTION A-A.

But whatever men may have done or left undone in this respect in the past, women themselves are beginning in these days to think of housekeeping as a business. These women, trained in domestic subjects, realise that they must start first and foremost with the fabric and design of the house itself. And it is here that a highly-organised body of sanitary engineers, together with architects and others, can co-operate with the women folk to bring about a more desirable state of things.

The Architect, May 1st 1914.

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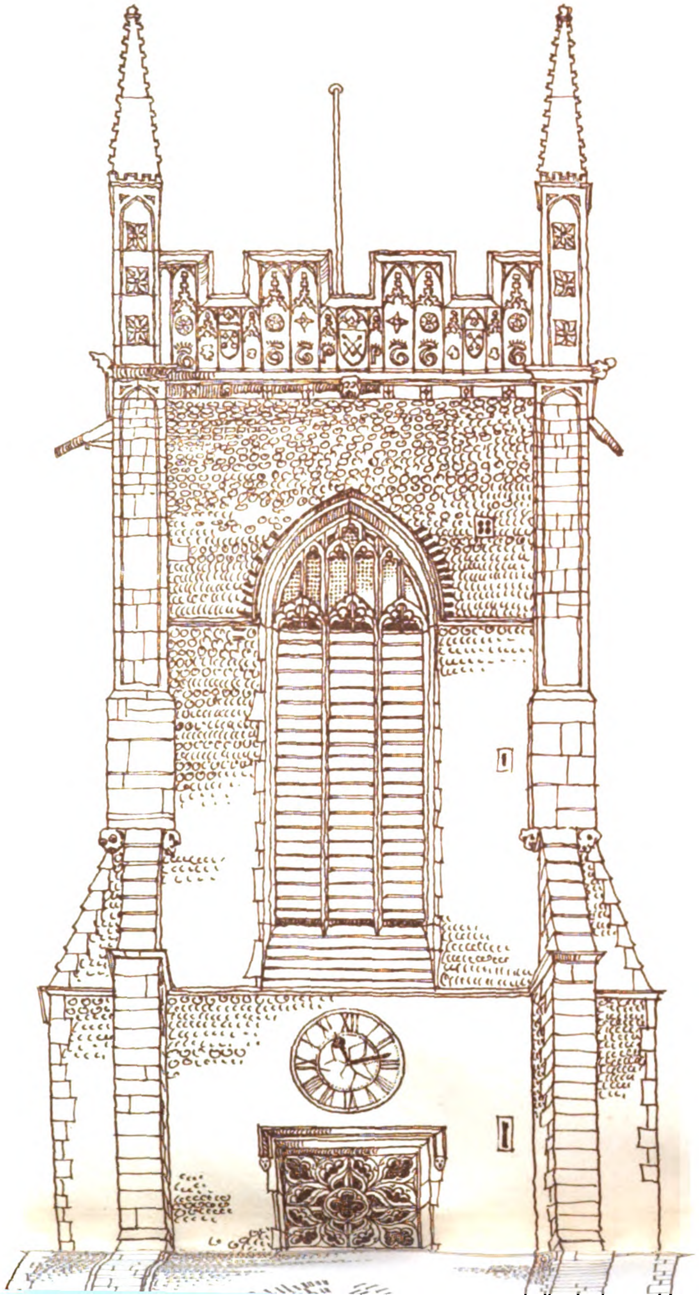
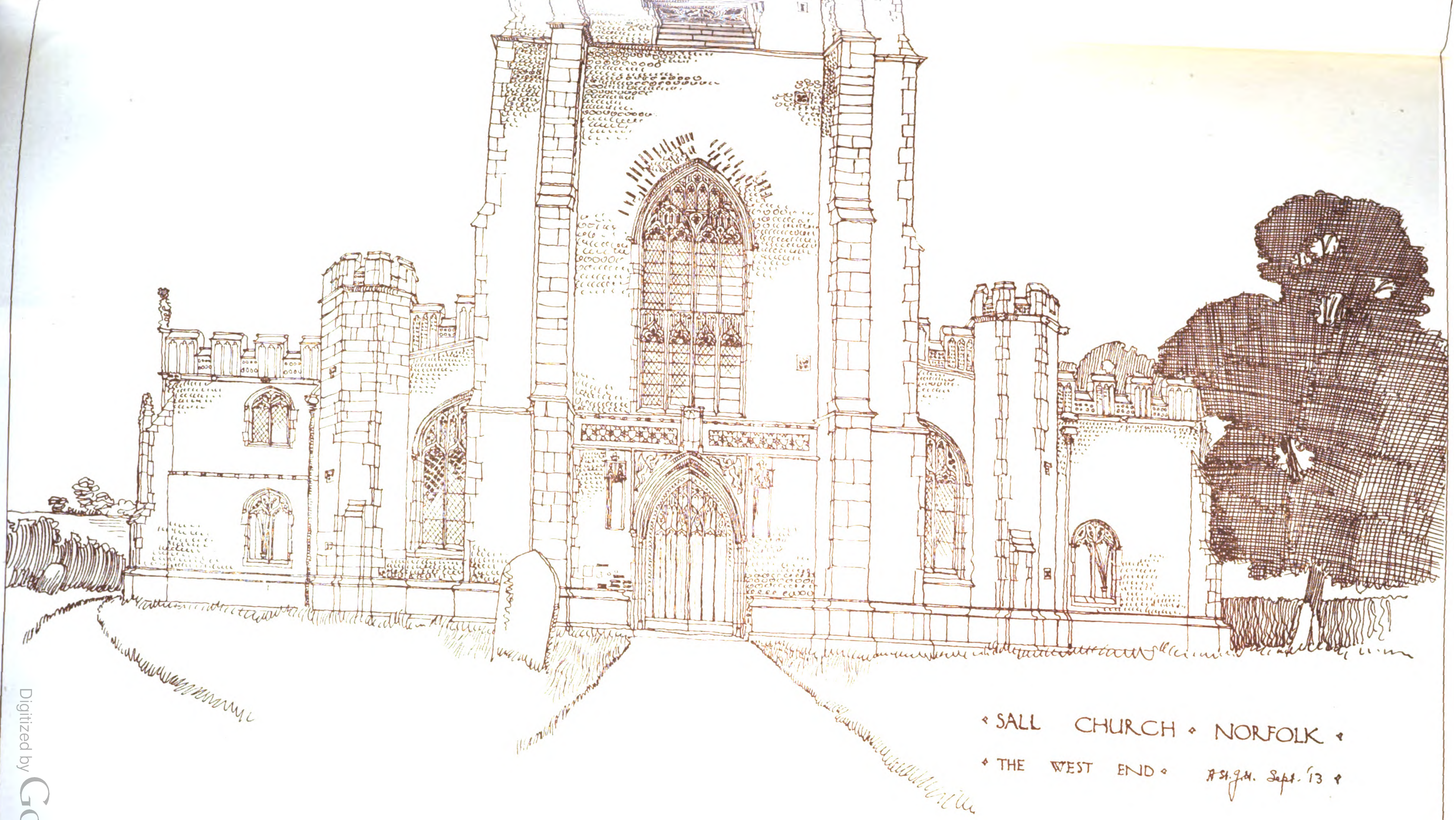
"THE ARCHITECT" TRAVELLING STUDENTSHIP, 1913.

From a drawing by Mr. H. St. JOHN HARRISON.





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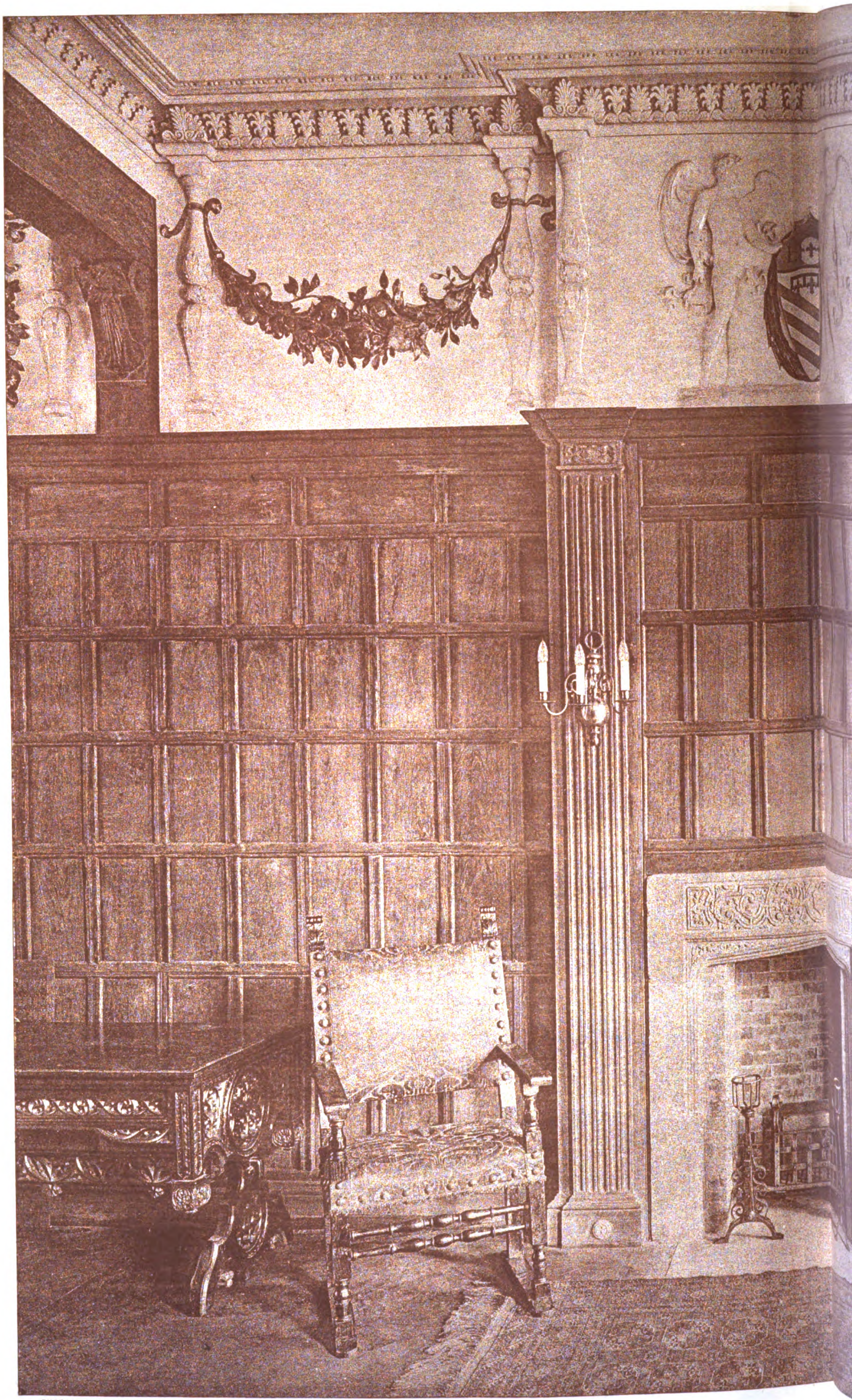

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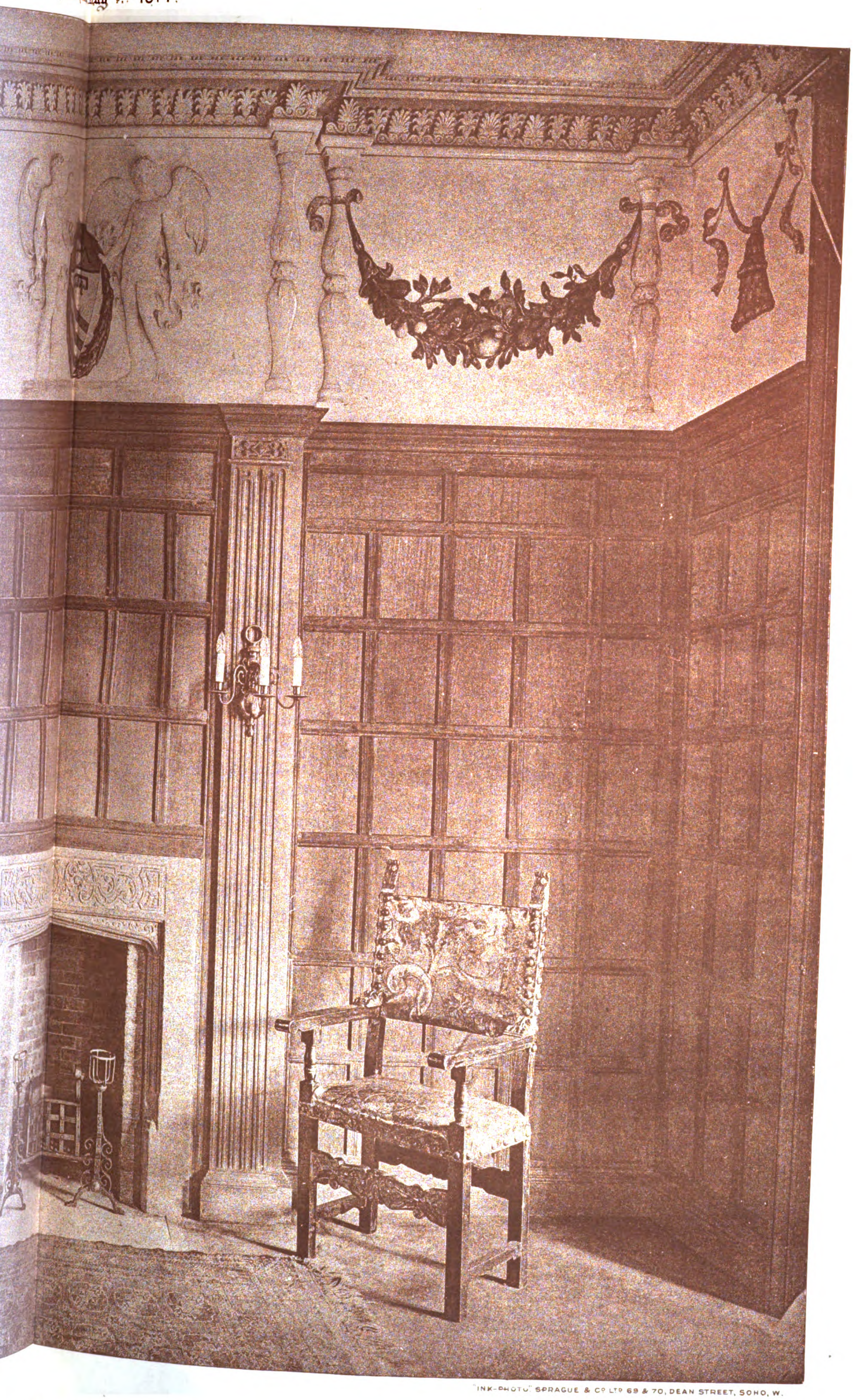

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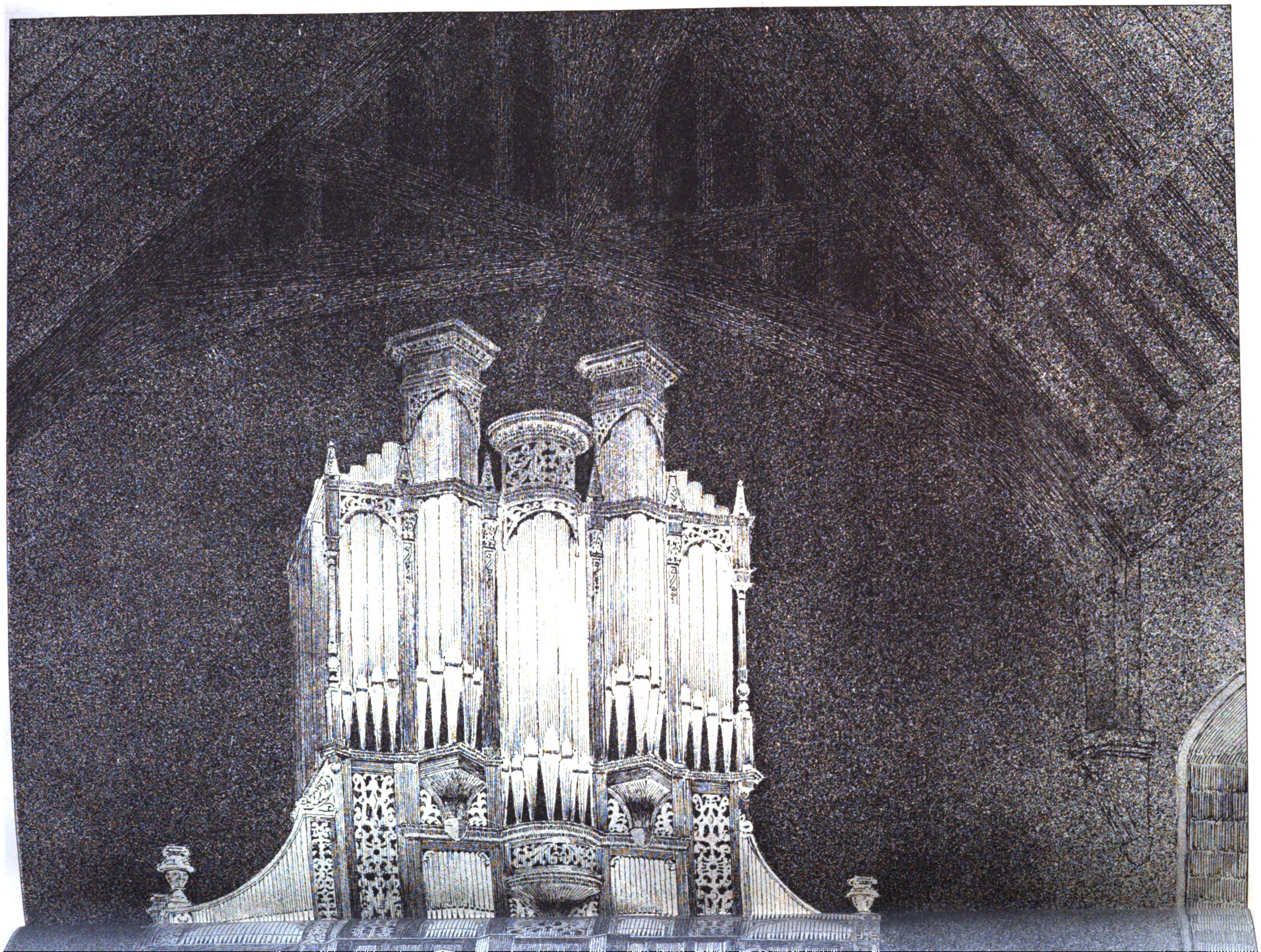

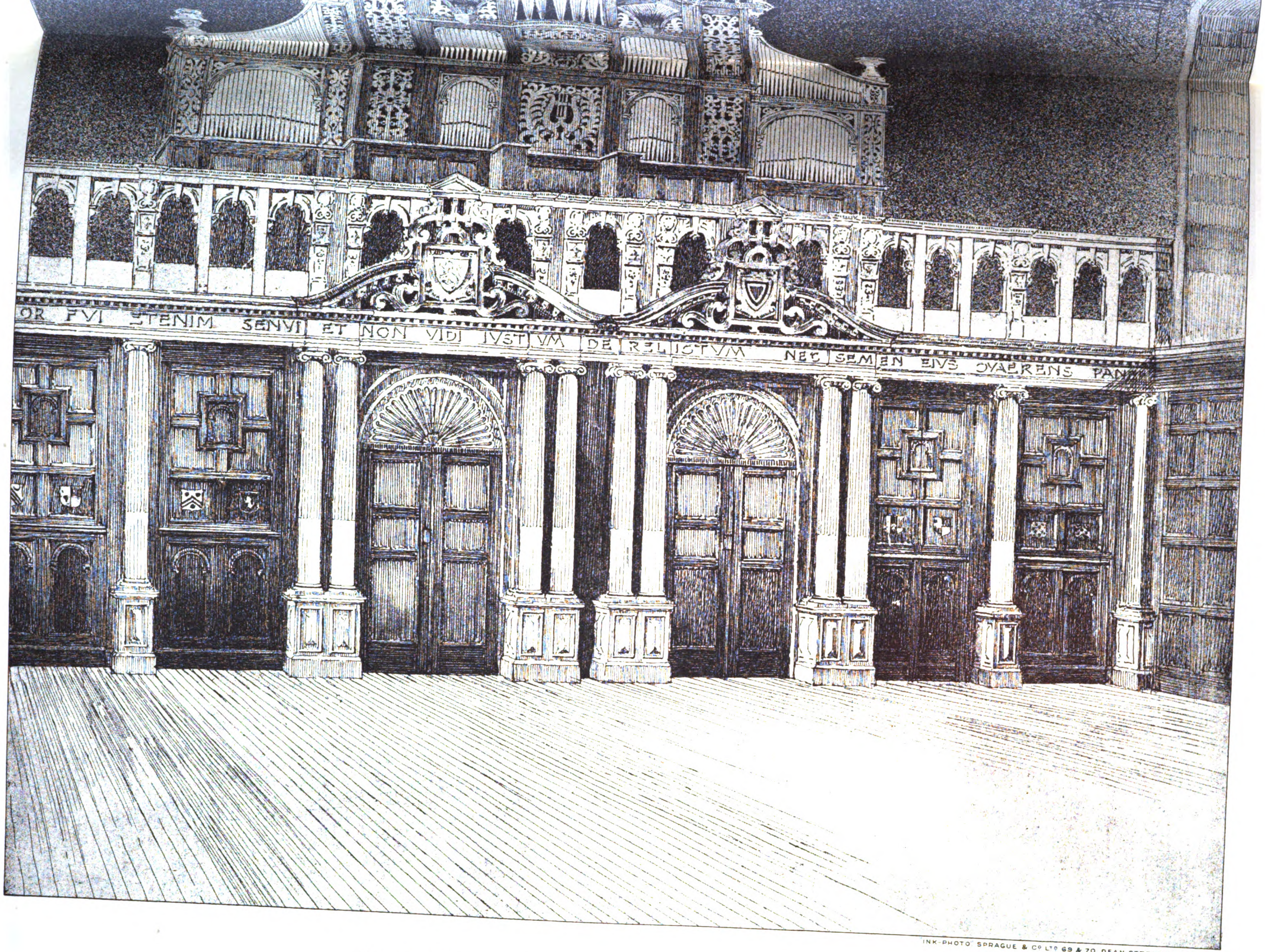
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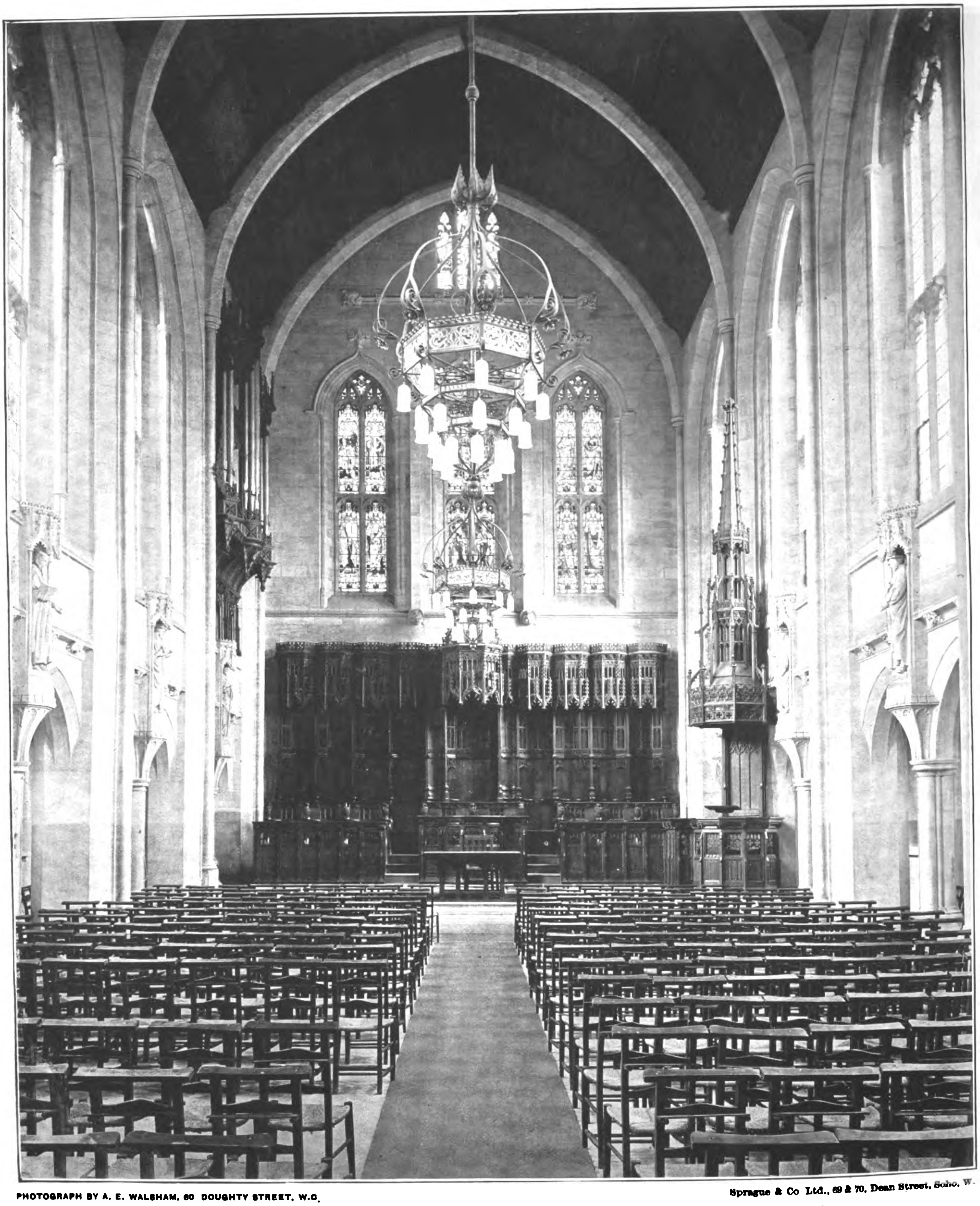
Mr. PAUL WATERHOUSE, M.A., F.R.I.B.A., Architect.

The Architect, May 1st, 1914.



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OXFORD COLLEGE SERIES. No. 137.—MANSFIELD: INTERIOR OF CHAPEL.

to advertise to likely tenants what was being done in the way of improvements in each district.

SECTION II.—SPECIAL.

The second section of my paper is the special consideration and description of constructive reforms to basement property.

The Landlord and Finance.

I am going to assume at the outset that the only way to do without the "lower regions," or, shall I say the "infernal regions," is to abolish smoky fuel altogether, and in many cases to abolish all solid fuel including even coke, which, however, may be retained under certain conditions in some remodelled houses. I should, in short, put in gas for lighting, heating, cooking, and water heating.

Speaking generally, I believe that in the servantless and one-servant house the basement as a living place could be entirely abolished, with many advantages and no disadvantages to landlord or tenant. The mistress would get her work done better, quicker, cleaner and cheaper without the domestic offices underground, and the landlord would get as high a rent, and in some cases a better rent. You will perhaps be puzzled as to how I am going to make up for the two rooms, at least, of which I shall rob every house by abolishing the old basement. In answer to this, I would say at once that in the large town house I should not attempt to abolish, but should entirely remodel and make sanitary the basement which exists; and that, speaking broadly, in all other cases the loss of the two rooms or their partial loss would be almost, if not quite, compensated for by the much smaller space that gas cookers, &c., would take compared with the old solid fuel type with their accompaniments of coal, which fill up the kitchen quarters.

I assume, of course, at the outset, that dispensing with the basement would only be possible if coal and coke carrying were entirely dispensed with, and shall discuss the problem on that basis.

In all cases other than the largest size houses, I should transform the room behind the dining-room, whether morning-room or drawing-room, into the kitchen, with gas cooker and water heater and all other necessary appliances.

To return to the problem of sacrificing the two basement rooms. Those people who have made use of one of the downstairs rooms as a breakfast-room probably did so only in order that they might for certain meals go down to be near the kitchen and save the carrying of things upstairs to the dining-room. The moving of the kitchen

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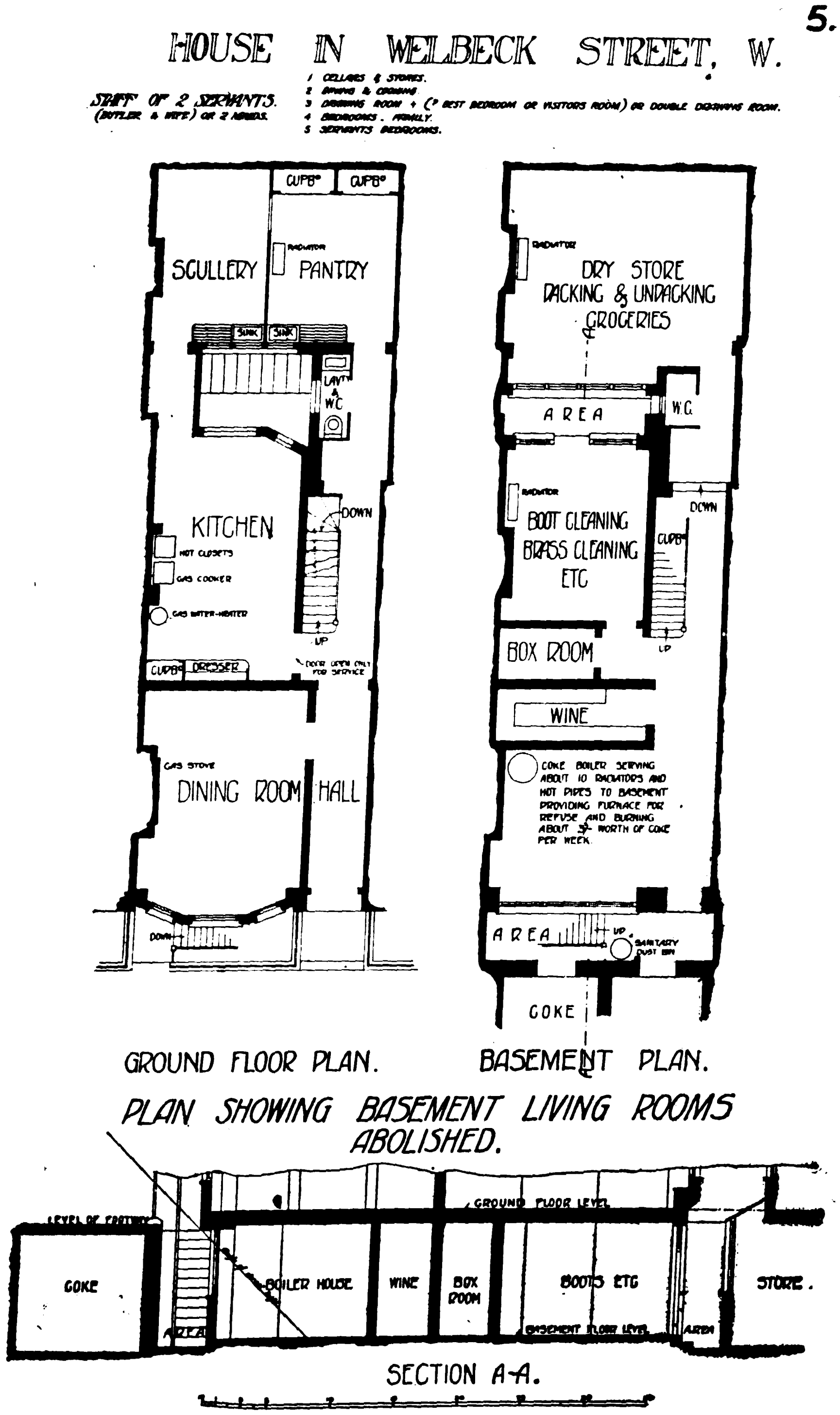
HOUSE IN WELBECK STREET, W.
STAFF OF 2 SERVANTS.
(BUTLER & WIFE) OR 2 MAIDS.
1 CELLARS & STORES.
2 DINING & COOKING.
3 DRAWING ROOM + (? BEST BEDROOM OR VISITORS ROOM) OR DOUBLE DRAWING ROOM.
4 BEDROOMS. FAMILY.
5 SERVANTS BEDROOMS.
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CUPBD
SCULLERY
RADIATOR
PANTRY
SINK
SINK
LAVY
W.C.
KITCHEN
DOWN
HOT CLOSETS
GAS COOKER
GAS WATER-HEATER
UP
CUPBD
DRESSER
DOOR OPEN ONLY FOR SERVICE
GAS STOVE
DINING ROOM
HALL
DOWN
RADIATOR
DRY STORE
PACKING & UNPACKING
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BASEMENT PLAN.
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GROUND FLOOR LEVEL
COKE
AREA
BOILER HOUSE
WINE
BOX ROOM
BOOTS ETC
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SECTION A-A.

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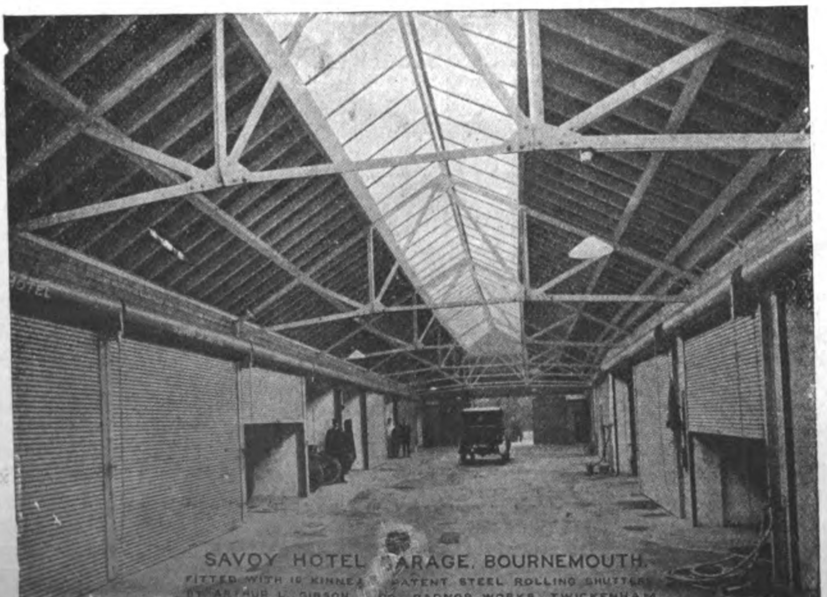
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to the same floor as the dining-room would remove also the argument for having a breakfast-room as well as a dining-room, and would lighten the household labour tremendously. In many cases, with a simpler form of home-life, which I hope is coming, a dining-room, to serve also as the family living-room, would be sufficient, instead of a separate drawing-room and dining-room, with in some cases a breakfast-room also. The basement rooms would become valuable cellars and store-rooms.

Some Typical Examples of Basement Houses and Suggestions for their Removal.

Basement property may, for convenience, be divided into seven main types.

1. The lowest type in slums.
2. Clerks' or mechanic workmen's houses, in town or suburbs (say £30 to £60 rent, taxes, &c., inclusive).
3. House of the rising young professional or business man. (Rent £60 to about £150.) Basement capable of being wholly or partially retained but remodelled.
4. Same type where basement must be abolished.
5. Medium town house. (Rent £150 to £250.)
6. Large suburban house—detached or semi-detached; basement or semi-basement. (Rent £100 to £250.)
7. Large town house. £250 upwards.

In the case of the first and last type of house (1 and 7 above), they are outside the scope of this paper. No. 7—the large town-house type with its big group of offices in the basement—must be remodelled and the basement retained. It would not be a practical thing to suggest, however dark the underground rooms might be, that the basement could be abolished. There may come a day when in some cases these offices will be turned into cellars and the kitchens rebuilt in the region of the roof; but that will not be in our day on any large scale. Moreover, this is only possible when a lift can be installed from cellar to attic.

Co-operation between Landlords and Sanitarians.

We have left, then, for our consideration to-night Groups 2 and 6, which will be most profitable for us to consider, because our criticism there can be entirely constructive instead of merely destructive.

How Basement Property can be brought Up to Date.

What, then, shall we do to make these basement houses once more popular by making them entirely sanitary and by minimising their drawbacks as to steep staircases? I am indebted to Mr. E. C. P. Monson and his brother, architects to the Sutton Trust, for many hours which they have allowed their staff to spend in surveying for me and making accurate plans of houses typical of all the groups from 2 to 6 inclusive. The drawings on the walls explain themselves better than I can explain in words—how the houses originally stood and how we have adapted or proposed to adapt them. Where basements are abolished the main principle has been to bring the kitchen up level with the dining-room and to substitute throughout the house gas fires for coal fires, and gas water-heaters of one of the four usual types (storage boilers, circulating boilers, geysers or califonts). In certain cases—the majority of cases—I have suggested the installation of a coke boiler either in the disused cellars or in the kitchen, to heat the domestic water system of the house as well as to heat the kitchen or keep the cellars dry and wholesome. Radiators (which are, of course, in accordance with the most modern scientific ideas, "low-temperature" radiators, governable by means of thermometers) have been placed under the windows in large rooms, in halls, staircases, and servants' quarters, so that the house in question may be kept always dry and moderately warm, and the gas fires used only as intermittent heat to provide radiant heat when the respective rooms were actually in use.

The larger gas undertakings themselves undertake such engineering work now, and keep specially skilled men to advise on each house on its merits, and give estimates not only of capital cost, but of running cost. Moreover, most gas undertakings will bear the capital cost and hire the apparatus out to landlords or responsible tenants at a yearly rental. This arrangement is largely patronised by tenants who do their own repairs and improvements, but might also be a great boon to small landlords who would willingly try experiments, but could not afford heavy capital charges for a large number of houses.

A Practical Difficulty Overcome.

The terrace houses, where there was no side entrance for tradesmen, presented at first the greatest difficulty from the surveyor's point of view if the basement were abolished, but I eventually found a way out of that; and I was afterwards encouraged to believe that this was not only a good, but an extremely practical solution, as some of the newest and most successful small town houses—for example, those in Vale Avenue, Chelsea—have been not remodelled, but newly built on practically the same plan. And though these Vale Avenue houses are of a size that would only have fetched about £70 to £80 a year if they had been old-fashioned houses in the same locality, they are readily fetching £130 a year without rates and taxes, and have been let as quickly as they have been built, because of the extraordinary conveniences that were embodied by Messrs. Elms & Jupp, the architects who designed them.

The great difficulty which I referred to was how to admit tradesmen and others in a terrace house if the area was dispensed with. The objection to using the front door (then on a level with the proposed kitchen) for all purposes is obvious. The old-fashioned type of area was an eyesore. In these new houses the area steps are retained, but are substantial and well built. The area entrance is used only to bring in groceries and other goods, and to take away empties, &c., and also as the servants' entrance to the house. There is no window from the cellar to the area, much to the improvement of the appearance of the front of the house.

The Author's Own House.

The large suburban house which is detached or semi-detached deserves a paragraph to itself, for it is a distinct though easier problem from the terrace house.

In such detached houses the separate entrance from the garden or the side, or both, removes the difficulty of the area if there is an area to begin with. The basement is frequently only a semi-basement and can, with very little adaptation, be made fairly light, airy, and comfortable.

There are, however, some houses in the suburbs which have all the faults of the worst town houses and all the drawbacks of being suburban, with only a limited share of the suburban advantages. These houses are one of the biggest problems from the landlord's standpoint, and need careful handling.

I have had an example of the good type of suburban house drawn as it was and as it is. It is my own house, and I know all its good points and all its shortcomings.

It has been made inhabitable, without abolishing the large and roomy semi-basement, by those very means which I have outlined elsewhere. There is no solid fuel except for the coke boiler in the winter months to heat the radiators, and that, of course, could be, and may be, heated by means of a gas furnace, if I find I can later on, when all the children go away to school, dispense with yet another servant. Gas, of course, for continuous use, is dearer than coke, but a very large coke furnace is somewhat heavy work for a woman, and I have no man servant.

The "servants' hall" has been adapted for a bed-sitting room for three servants, there has been built a bath-dressing room with hot and cold water to supply a fixed washstand (served by a geyser for use in the summer months); the coal range was removed and a gas cooker, gas water heater, and gas condensing stove to warm the kitchen were fixed; the pantry had a gas condensing stove fixed in place of a coal fire used by the former tenant, a similar stove was fixed for the servants' bed-sitting room, a smaller gas cooker was fixed in the scullery for occasional use (as, for instance, in the holidays, when servants were in the house alone), a gas-heated wash copper is fitted in the scullery, and a gas-heated incinerator for burning refuse in the large coke cellar, for use when the coke furnace is not in use.

A service lift was fixed from basement to hall, as the kitchen stairs, though well lighted, are steep, and the carrying of trays was said by the former tenant to be a great difficulty in the way of keeping a parlourmaid. The basement is lighted (as is the rest of the house) throughout by gas, ventilating lamps being used for the most part because the ceilings are not very lofty, and further, because a really good light is essential to cleanliness where cooking and washing-up are done.

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tenant, with one-third the number in family, and with the same number of servants, besides help from a man, found the house difficult from the labour point of view with coal fires, coal cooking range, and no lift. There are dozens of such houses only waiting for a combination of modern engineering, modern business method, and modern imagination to bring them into favour again.

Conclusion.

In conclusion, I would point out that, whatever use may be made of basement rooms, the statements of Dr. Meredith Young already referred to are the fundamental arguments against using basement premises for kitchens in any but the largest and most spacious mansions—because daylight and direct currents of fresh air are alone suitable for those places in which our food is stored, cleaned, cooked, and dished up, where our crockery is stored and washed up, and where those who do these services for us have to live their lives.

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A LIST OF WORKS PROJECTED OR COMMENCED.

(N.B.—Local Authorities, architects, and others are invited to submit full particulars for insertion in this weekly list. Where districts are not entered against names of architects and builders the address is as a rule local.)

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BERKSHIRE.

Caversham.—"Crown" Hotel: alterations (£2,000). Mr J. Haslam, architect, 156 Friar Street, Reading.

BUCKINGHAMSHIRE.

Aylesbury.—Six cottages, Fleet Street, for Mr. F. Richings.

House, Stoke Road, for Mr. H. Cannon.

House, Havelock Street, for Mr. Evett.

Bradwell.—Council girls' and infants' schools: remodelling (£2,800).

Buckingham.—Royal Latin school: cookery and manual instruction blocks (£1,000).

CAMBRIDGESHIRE.

Birkenhead.—Baths, Derby Park. Mr. C. Brownridge, Borough surveyor.

CUMBERLAND.

Carlisle.—Ladies' Swimming Bath: extension (£2,000).

DERBYSHIRE.

Shuttlewood.—Council School (£5,000). Mr. G. A. Widdows, A.R.I.B.A., architect, County Education Office, St. Mary's Gate, Derby.

DEVON.

Plymouth.—Public Schools (£18,000).

Torrington.—Five Council cottages, Well Street (£1,100).

Whimple.—Houses and farm-buildings, Periton and Cross Town Farms: alterations, &c. Messrs. Ellis, Son & Bowden, architects, Bedford Chambers, Exeter.

DURHAM.

Auckland Park.—Church Hall (£1,000).

Blackhall Colliery.—Council School: additional 1,200 places.

Burnopfield.—Public Elementary School (for about 400 places).

Gateshead.—Public Elementary school (for about 700 places), King Edward Street.

Nettlesworth, Silksworth, Sunniside, and Washington.—Public Elementary Schools for about 250, 300, 200, and 200 places respectively.

ESSEX.

Chelmsford.—Garage, &c., Duke Street. Messrs. C. & W. H. Pertwee, architects, Institute, London Road.

Thaxted.—St. Mary's Church: extensions. Mr. C. W. Smith, F.R.I.B.A., architect, 16 Finsbury Circus, London, E.C.

GLOUCESTERSHIRE.

Bristol.—Headquarters, Old Market Street, for the City of Bristol Rifle Corps (4th Batt. Glo'stershire Regiment). Messrs. Paul & James, F.R.I.B.A., architects, 31 Nicholas Street. Messrs. W. Cowlin & Son, contractors, Stratton Street, St. Paul's.

Kingswood.—Holy Trinity Church: class-rooms, choir vestry and Hopewell Hill Mission Hall (£2,300).

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Bournemouth.—House, plot 134, Browning Avenue. Messrs. Barnes & Pond, builders.

House, plot 18, Chessel Avenue. Messrs. F. A. Grigg & Son, builders, 32 Portman Road, Boscombe.

House, plot 76, Chessel Avenue, for Mr. E. Insley.

House, plot 8B, Pine Avenue, for Mrs. P. Aldred.

Three houses, plots 63, 64, and 65 Seaward Avenue, for Mr. B. D. Elt.

House, Truscott Avenue, for Mr. F. Holly.

House, plot 52, Wentworth Avenue, for Mrs. A. R. Greasley.

"Somerled," Meyrick Park Crescent: additions for Mr. R. Macalister.

House, plot 94, Boscombe Overcliff Drive, for Mr. A. H. Randall.

Three houses, Abbott Road, for Messrs. Jeans & Miles.

House, Arnewood Road, for Mr. E. C. Evans.

House, plot 24, Belle Vue Road, for Mr. V. W. Shorn.

"St. Cuthbert's," Belle Vue Road: additions for Misses Williamson & Roberts.

House, Enfield Road: additions for Mr. J. H. Francis.

Nos. 29 and 31 Gladstone Road: additions for Mr. C. Croucher.

House, plot 35, Hengistbury Road, for Mr. Knight.

Four houses, plots 103, 104, 121 and 122, Highfield Road, for Mr. R. J. Linn.

Four houses, Kimberley Road, for Mr. H. G. Ives.

House, plot 168, Milner Road. Messrs. W. E. Jones & Son, builders, 1 Grosvenor Buildings, Bournemouth West; also

No. 127 Poole Road, additions.

House, plot 235, Nairn Road, for Mr. A. F. King.

"Bellrock," Osborne Road: additions, for Mr. A. J. Long.

House, plot 177, Pine Road, for Mrs. A. J. Curnow.

"Aysgarth," Poole Road: additions for Mr. C. Williams.

Two houses, plots 71 and 72, Roslin Road. Mr. A. Barnes, builder, 33 Palmerston Road, Boscombe.

No. 21 Sea Road: additions for Mr. J. E. Webster.

No. 114 Southbourne Road: additions. Messrs. H. J. Dyer & Sons, builders, Oxford Road.

Three houses, plots 31-33, Spurgeon Road, for Mr. H. Cole.

House, plot 17, Stirling Road, for Mr. J. J. Elkins.

House, plot 48, Stokewood Road, for Messrs. A. Lambert & Son.

House, Talbot Road, for Mr. W. A. J. Mitchell.

"Edmondsham Towers," Terrace Road: additions for Mrs. Baker.

"Yelvertoft," West Cliff Road: additions for Mrs. N. Hill.

House, plot 81, corner of Wilfred and Crabton Close Roads. Mr. C. J. Miles, F.R.I.B.A., architect, "Observer" Chambers.

Six houses and two shops, Wimborne Road, for Mr. H. Rigler.

Castle Laundry, Castle Road: additions for Mr. R. Bevington.

KENT.

Canterbury.—Baptist Church, St. George's Place: new buildings. Messrs. Jennings & Gray, architects, 4 St. Margaret Street. Mr. L. T. Dadds, contractor.

LINCOLNSHIRE.

Bourne.—Isolation hospital.

Chapel Hill.—Council School (for 80 places), for the Holland Education Committee.

NORTHAMPTONSHIRE.

Wellingborough.—Police Courts and extensions to Station. Mr. C. S. Morris, County surveyor, County Hall, Northampton.

NORTHUMBERLAND.

Newcastle-on-Tyne.—Synagogue (for 300 sittings), Eskdale Road. Mr. M. K. Glass, architect.

SHROPSHIRE.

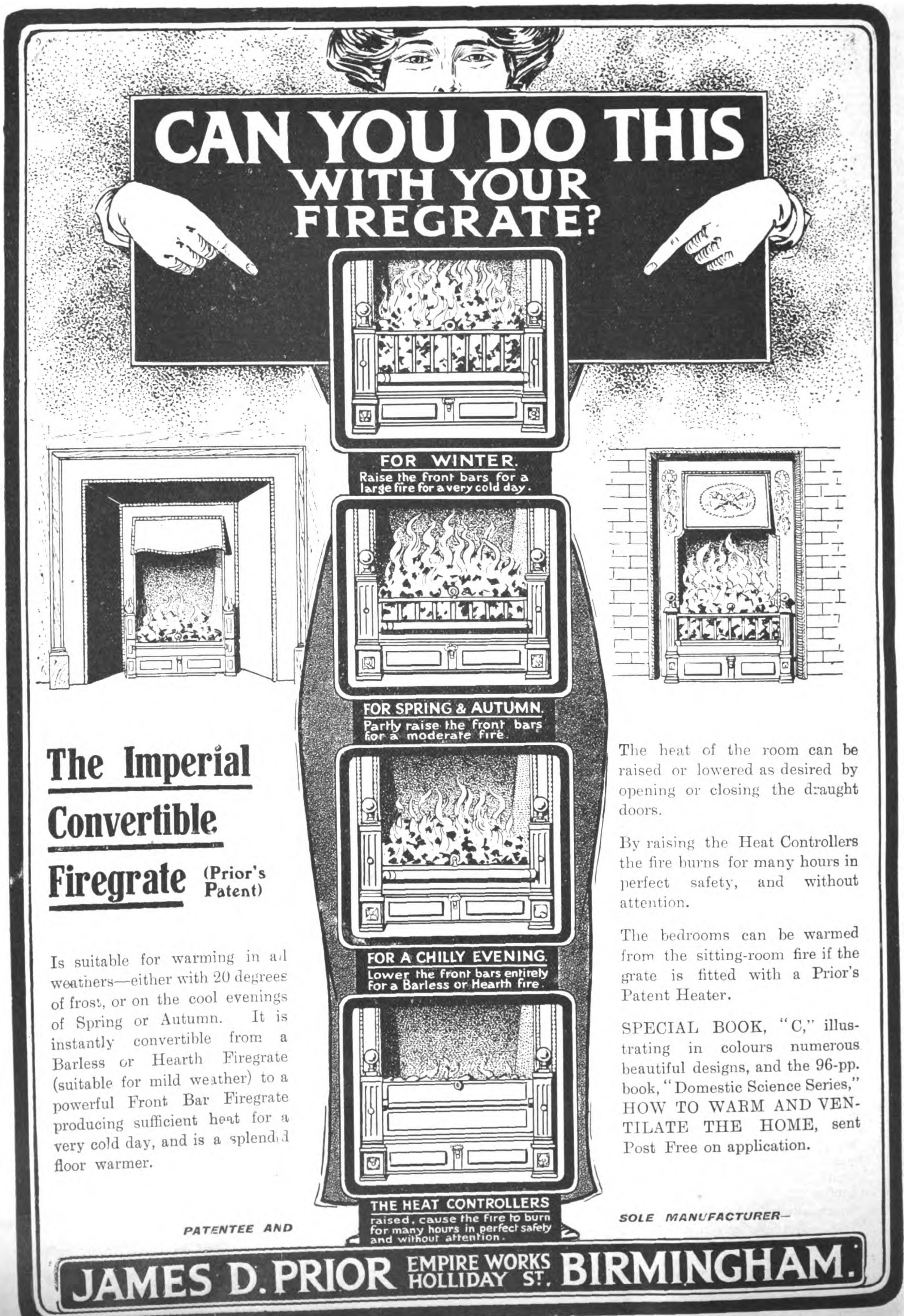
Acton Burnell.—Acton Burnell Hall. Reconstruction, for Sir W. Smythe, Bart.

Bishop's Castle.—Secondary School.

St. Martin's.—U.M. (New Connexion) Church.

SOMERSET.

Taunton.—Branch premises for the London City and Midland Bank, Ltd.



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STAFFORDSHIRE.

Cannock.—Ten pairs of workmen's houses. Council surveyor.

Lichfield.—Guildhall alterations; also provision of municipal offices, mortuary, &c. (£4,100).

Newchapel.—St. James's Church: chancel and vestry (£1,100).

Walsall.—Blue Coat Schools: extension (£2,000).

SUFFOLK.

Ipswich.—Isolation Hospital: administration block and additional ward for 24 beds (£6,000).

Refuse destructor: extension (£5,200).

SURREY.

Woking.—Council Schools at Goldsworth, Horsell, and Maybury.

Twenty-four Council houses, Old Woking.

SUSSEX.

Brighton.—St. John's Schools, Carlton Hill: reconstruction and enlargement (£4,300).

Cuckfield.—Working-class dwellings (£1,150).

Hayward's Heath.—Congregational Church, South Road (£2,100).

Twineham.—Parish Room, Slipe Corner.

WARWICKSHIRE.

Birmingham.—Infirmary, Dudley Road: laundry, &c. Messrs. W. H. Ward, architects, 30 Paradise Street.

Public Elementary School (for about 1,200 places), corner of Nansen and Naseby Roads.

Coventry.—Twelve houses, St. Lawrence's Road. Mr. T. R. J. Meakin, architect, 11 Warwick Row.

Two houses, Stoney Road. Mr. E. Harris, builder, 50 Cope Street.

Two houses and shops, Leicester Street, for Miss F. Juckes.

Printing works, rear of Smithford Street: additions for Messrs. Iliffe & Sons.

Workshop and stores, Gas Street Works, for the Corporation Gas Department.

Exhall.—Two houses, Woodshire's Green, for Messrs. Marshall Brothers.

Six houses, Burbage's Lane, for Mr. W. Danks.

Nuneaton.—Girls' High School: additions (£4,400).

WORCESTERSHIRE.

Malvern.—Council School, Pickersleigh Road.

YORKSHIRE.

Dodworth.—Council Offices, &c., High Street. Mr. E. W. Dyson, architect, 10 Regent Street, Barnsley.

Halifax.—Technical College: proposed extension (£1,000).

Harrogate.—St. Mary's Church.

Mexborough.—The Montagu Hospital: children's ward (£1,300).

Ripponden.—Mill for the Stones Mill Co., Ltd. Messrs. C. Williams (F.R.I.B.A.) & Sons, architects, Post Office Buildings, Commercial Street.

Scarborough.—St. Saviour's Church Institute (£2,500).

Wortley.—Council Offices (£3,500). Mr. W. Dixon, architect, Montgomery Chambers, Hartshead, Sheffield.

WALES.

Berriew.—Council School (£2,700).

Llandyrnog (near Denbigh).—King Edward VII. Memorial Sanatorium. Mr. T. T. Rees, F.R.I.B.A., architect, 51 North John Street, Liverpool.

Llansamlet.—Parish Church: tower. Mr. G. Moxham, F.R.I.B.A., architect, 18 Castle Street, Swansea. Mr. J. Arnold (of Clydach), contractor.

Northop.—Parish Church: restoration (£700 to £1,000).

SCOTLAND.

Ayr.—Heathfield Hospital: discharge ward (£800).

Buckhaven.—Infant School, College Street (for 500 places). Mr. G. C. Campbell, architect, Methil Brae, Methil.

Buckie.—House and stables, corner of Duguid Street and Cluny Lane, for Mr. G. M'Kenzie.

Villa, corner of Queen and Cathcart Streets, for Mr. G. Smith, junr.

Kirkcaldy.—Hospital: extension.

IRELAND.

Booterstown.—Twenty- four workmen's houses, Massy's Field.

Lisburn.—Sixty labourers' cottages.

MR. F. A. ROBERTS, architect, Mold, has just been instructed by the Holywell Rural District Council to prepare plans for houses proposed to be erected by them under the Housing Act.

Correspondence

[The Editor will not be responsible for the opinions expressed by Correspondents.]

A Unique Church in Danger.

SIR,—We venture to make an appeal which we feel sure will be responded to by those who care for the great buildings which enshrine the past life and achievements of their country.

Thaxted Church, set in the uplands of Essex, is one of the few examples of the ultimate development of Gothic architecture, in which the massive walls of earlier time are replaced by a mere framework of glass and tracery, supporting, for all its frailness, large expanses of carved roofings. Moreover, it is unique in that it is unspoiled by the hands of the restorer; and it is more and more needed to meet the requirements of an increasing population. A new railway, a new industry, a reviving agriculture, already promise that in a few years Thaxted will fully require the large proportions of this cathedral-like structure.

We therefore ask the nation to help preserve this church. The lead on the roof has almost completely perished, and the weather threatens to destroy the carved timbers of oak and Spanish chestnut. Even more serious, the tower threatens to give way and to bring about the fall of the exquisite steeple, thus possibly destroying the nave.

The Bishop of St. Albans, recommending the fund, says that "there is real danger of irreparable injury if the work of preservation is not taken in hand at once." On the recommendation of the architect, Mr. Randall Wells, whose report is endorsed by the Society for the Protection of Ancient Buildings, the Preservation Fund Committee appeal for £5,000. When so much money is given to preserve, both for public and private collections, our national works of art, it should be easy to raise a few thousand pounds for a building whose beauties thrill the imagination of masses of people.

The committee includes the Lord Bishop of Chelmsford, the Lord Bishop of St. Albans, his Grace the Duke of Newcastle, the Earl of Plymouth, the Earl and Countess of Warwick, Mr. George Clausen, R.A., and others.

Further particulars, with photos, may be had from the Hon. Treasurer, Mr. H J. Cunnington, Braintree, who will gratefully receive subscriptions in either large or small amounts.—Yours, &c.,

T. FOWELL BUXTON.
WALTER GILBEY.
RAYLEIGH.

Vancouver and King's Lynn.

SIR,—A subscription has been set on foot at King's Lynn to place a portrait of Vancouver in the Town Hall. The cottage where Vancouver was born still exists in the Quakers' Meeting House Yard. It is a half-timbered, tiled house with a Mansard roof. Vancouver was baptised in St. Margaret's Church at Lynn (as recorded in the Register) on March 16, 1761, but he was buried at Petersham. If any architect visits Lynn this summer I shall be very pleased to show him not only Vancouver's cottage, but several other interesting houses, and also the churches, ancient gateways, and relics of the old monasteries which exist in Lynn.—Yours truly,

J. H. KERNER-GREENWOOD.

MR. J. PATON, borough surveyor at Plymouth, has prepared plans and estimates for the adaptation of Beaumont House as a tuberculosis dispensary, and the erection of pavilions and shelters for consumptive patients on the Corporation land at Mount Gold. The scheme, recommended for adoption by the Plymouth Sanitary Committee, is expected to cost £2,500.

THE Manchester Art Gallery Committee recommend out of nearly seventy applicants the appointment of Mr. Lawrence Haward, M.A. (Cambridge), of London, as curator of the Art Gallery. Mr. Haward has for eight years been a contributor to the art section of the *Times*, and has studied in both France and Germany. The salary of the post is £500 a year.

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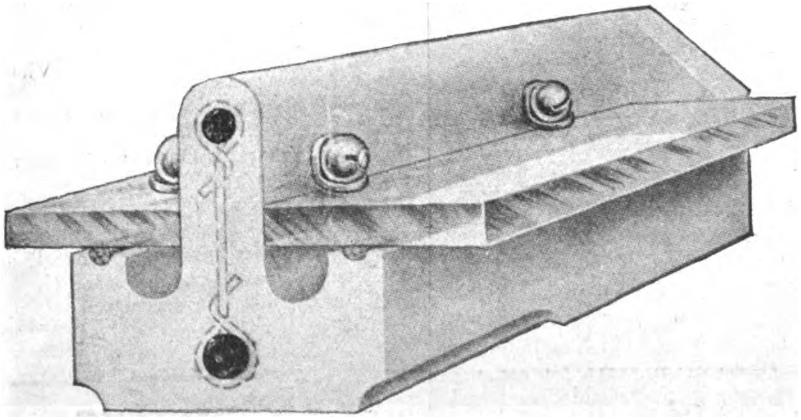

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THE ARCHITECT

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FORTHCOMING EVENTS.

Saturday, May 9.

Edinburgh Architectural Association: Visit to the new Provincial Training College, Moray House, Edinburgh, at 2 P.M.

Monday, May 11.

Royal Institute of British Architects: Special General Meeting to consider draft Revised Schedule of Professional Charges, at 8 P.M.

Institute of Sanitary Engineers: Paper entitled "A London Builder's Experiences with Sanitary Officials in the Metropolis," by Mr. Guy B. Grave, at 8 P.M.

Institution of Municipal Engineers and Society of Engineers: Paper entitled "Greater New York's Water Supply Scheme," by Mr. William T. Taylor, M.I.E.E., &c., at 7.30 P.M.

Tuesday, May 12.

Institution of Civil Engineers: Annual Dinner, at 6.30 P.M.

Society for the Promotion of Roman Studies: Annual General Meeting, at 4.30 P.M.

Thursday, May 14.

Concrete Institute: Paper entitled "Sand and Coarse Material and Proportioning Concrete," by Mr. J. A. Davenport, M.Sc., &c., and Professor S. W. Perrott, M.I.C.E., &c., at 7.30 P.M.

Society of Architects: Paper entitled "The Expression of Form," by Mr. Leslie Wilkinson, A.R.I.B.A., at 8.30 P.M.

ARCHITECTURE AT THE ROYAL ACADEMY.—I.

From the point of view of the general public the architectural room at the Royal Academy may perchance be of more interest than usual from the fact of the exhibition of the designs by Mr. Edwin L. Lutyens, A.R.A., for the Government House, and by Mr. Herbert Baker for the secretariats of the new Imperial capital city of Delhi. The drawings in which these designs are shown are by Mr. William Walcot, whose well-known style of depicting architecture is particularly well suited to the suggestion of an Indian atmosphere, and also to the vagueness of detail which may be expected to prevail at the present stage of the designs. The drawings indicate rather the general scheme of composition, and the relative grouping of the three principal Government buildings that form the focus of the proposed lay-out of the new city of Delhi.

There is, however, sufficient definiteness in the suggestions made by the drawings to indicate that the architects propose to settle the question that has been so warmly discussed as to the preferment of a Classic or Indian type of architectural design as a suitable basis for the chief official buildings of New Delhi by the adoption of a compromise. The extent of the compromise is certainly, as so far indicated, quite insufficient to satisfy Mr. Havell and other advocates of the maintenance of native Indian tradition, for the designs may be characterised as essentially Classic with a soupçon of Indian feeling which is so slight that it would scarcely offend even the Classic purist, and in the present condition of architectural thought absolute adherence to pure Classic precedent is not likely to find many advocates; pace Mr. March Phillipps, we to-day use ancient detail merely as suggestive material, not as impeccable models.

The characteristic dominant note of the designs by both Mr. Lutyens and Mr. Baker is the dignity of breadth and repose. Long horizontal lines, simple masses bounding colonnades of a single order on a broadly treated lower storey, a dome to each building with towers of campanile proportion also to the secretariats are the elements that make the designs Classic. The dash of Indian flavour rests in oversailing eaves and cornices of great projection, roofed in red—apparently—tiles, and in small pepper-pot domed turrets of quasi-Indian outline, which detract from rather than add to the general character of design.

Both architects have attempted to give something of Indian tonality to their domes. True, the attempt of Mr. Baker is mainly evident in the giving of a quasi load-carrying function to purely decorative projecting columns around the drum by surmounting them with elephants instead of inverted trusses, as is more commonly the resource of inexpert designers of domes. Remove the elephants and substitute such trusses as aforesaid or sculptured standing figures, and Mr. Baker's domes lose all semblance of Eastern character, and become frankly as they are essentially Renaissance. We can hardly approve as a recipe for an Indian dome—take an ordinary pattern Renaissance dome, and "as geographers in Afric's maps, place elephants to fill up gaps." Mr. Lutyens is rather more successful in suggesting Indian feeling in his dome, which he has in a measure accomplished by adopting the hen-and-chickens type, not without precedent in Indian buildings in common with Byzantine, to which the cachet of Mr. Lutyens' dome is rather more akin. The type-form and big pent eaves to both main dome and domelets are the concessions that Mr. Lutyens makes in his dome design to the demand for something Indian.

But when all is said and done the designs by Mr. Lutyens and Mr. Baker remain Classic, whatever the detail may be. They are great and noble designs, with the Classic character of ancient Greece, and we may hope that the slight concessions to the demand for Indian character may be sufficient for the faddists amongst the Governmental authorities, although assuredly, as we have already pointed out, they will not satisfy the cravings of those who know what Indian architecture is, and desire its reproduction or even the maintenance of the tradition that has come down to the present day amongst native craftsmen.

In his design for "Terminus Stations in Chili and Bolivia for the Antofagasta Railway," which hangs immediately above the Delhi drawings, Mr. Arnold Mitchell has not been troubled with the necessity of giving a more or less true flavour of Bolivian or Chilean indigenous art, and has felt himself free to be purely classical. It is worthy of notice that he also for a tropical country adopts the principle followed by the Delhi architects of open colonnades enclosed by broad simple masses. These colonnades in a single order with unbroken horizontal lines and a recessed attic attain, comparing small things with great, the repose and calm of Classic dignity we have noticed in the great buildings for Delhi.

Very different is the effect of the design by Sir Ernest George, A.R.A., for "The Shirpur Palace, for H.H. the Maharajah Holkar of Indore." Spite the great size of the building which he had to design, his adaptation of Palladian arcades on coupled columns and rusticated lower storey with semi-circular headed arches, Sir Ernest cannot get away from himself and his favourite motifs, which in their picturesqueness we are wont to recognise as the special penchant of George rather than Palladio. Hence his design is not Classic, not broad and dignified, and lacks even that stately homeliness which is so marked a characteristic of many of the great English houses that have come from the hand of Ernest George. Needless to say, there is no concession to Indian flavour, great or small, in this palace by Sir Ernest George, which fails in achieving the position of either a homely or a stately residence for a reigning prince.

The President of the R.I.B.A., Mr. Reginald Blomfield, R.A. elect, sends only two drawings, one, his diploma work deposited on his election as Academician, being a finely executed autograph pencil drawing of "New Buildings, Lady Margaret Hall, Oxford." The frame contains perspective, two elevations and plan, and shows the progress of the scheme commenced in 1896 and finished in the present year. The whole building is Z-shaped on plan, and while the normal window treatment is that of square-headed, straight-arched, Georgian sash windows, interest is given to each front by a central feature, that of the main façade being the hall marked by projecting piers terminated by inverted trusses and surmounted by balls along the parapet. A wooden lantern with balconied treatment crowns the hall roof. Other features are segmentally pedimented stone bays with doorways in the ground floor. Thus a homely and almost utilitarian character is given to the building, but with concentrated points of richer treatment that elevate the design to the level of worthy but not extravagant architecture. It is characteristic of Mr. Blomfield that he should choose to be represented in the diploma galleries of the Royal Academy by such a building. The other contribution by the new Royal Academician is a series of geometrical coloured drawings of "Waldershare Park, as rebuilt for the Earl of Guildford." This is in the late Georgian country house manner of brick with stone pilasters and angle piers that Mr. Blomfield has favoured in his recent designs, a manner formal and restrained, almost forbidding in its exterior, that is usually combined with a wealth of excellent detail in the internal treatment.

"THE ARCHITECT" STUDENTS' SKETCHING AND MEASURING CLUB.

TAKEN as a whole, the contributions of water-colour drawings are of higher average quality than has sometimes been the case when we prescribed a similar exercise, though we have no outstanding specimen of great superiority in the art. There is a wider recognition of the fact that a water-colour drawing of architecture is not a coloured architectural drawing. The technique of water colour is also studied more fully, and both water and colour are allowed their full share in the drawing.

"McKim" sends an effective sketch on tinted paper of the Abbey Gateway at St. Albans, which possesses true water-colour character, and at the same time is confessedly a quick-time sketch.

"Plato" has submitted an excellent study of the central bay of the inner quad of St. John's College, Oxford, which deals with a complicated piece of detail in a truly suggestive manner, avoiding both strained forcing of colour and meticulous monotony.

"Shinio" has selected "The Falcon" Inn, Chester, and renders very pleasantly the colour of its black timbering. Our contributor's drawing is real water colour.

"Ebor" has found a good subject in an old house of limestone, with ironstone bands and quoins, and roofed with thatch, at Blisworth, Northants, but his colour is rather muddy and has not quite caught the tone of the Northants stone building. The defect of the building colour is accentuated by the sharp contrast with the light sky and the bright foliage.

"Toga" mistakes a coloured architectural perspective for a water-colour drawing. Even so, it is hard and unsympathetic, even though brightened by the forced shadow tint.

Mr. Derwent P. Newman in making a study of "The Chequers" Inn, Tonbridge, has been over much obsessed with the beauty of purple, and applies too strong an antidote in the violent red of the signboards. The half timbering is too monotonous in colour, and in general Mr. Newman has rather tended to make his colour what it ought to be from a conventional point of view.

Mr. Lancelot A. Elsworth is also obsessed with a love of the purple shadow, and whilst his brushwork is on the way to become satisfactory, his drawing is still too much dominated by the architectural draughtsman's intent to show buildings as they are and not as they look. There is good promise rather than achievement in Mr. Elsworth's work.

Mr. W. A. Robb has made a drawing of the entrance gateway of St. John's College, Cambridge, which is too crude to be altogether satisfactory as a water colour.

We award prizes of one guinea to "Plato," and half a guinea each to "Shinio" and "Ebor."

NOTES AND COMMENTS.

THE judgment of Mr. Justice Lawrence in the case of the Secretary for War against Messrs. Kirkland & Capper (electrical engineers) and Mr. J. H. Townsend Woodd (architect) which we give on p. 463, opens up visions of future aggravated trouble for architects in these days of highly specialised applications of science to building. Although Messrs. Kirkland & Capper were employed as expert electrical engineers to prepare plans and supervise the electric lighting of the building, and it was expressly provided that the architect was not to be paid a commission on the cost of the electrical engineering and lighting work, he has, nevertheless, been held responsible by the judge for defects in the electrical work. Possibly the fact which became apparent in the course of the action that the architect shared the commission paid to the electrical engineers influenced the mind of the judge, but as we read the judgment this was not the ground on which he fixed the responsibility of the architect. It would appear, therefore, an architect is not relieved from responsibility by the appointment of experts for particular portions of the work.

We may hope that good may result from the appointment by the President of the Local Government Board of a Departmental Committee "to consider the control at present exercised in England and Wales over the erection of buildings and the construction of streets, by means of by-laws and local regulations, and their effect upon building and development, and to make recommendations."

The Committee will consist of the Right Hon. J. Herbert Lewis, M.P. (Chairman), Sir Randolf L. Baker, M.P., Mr. A. E. Collins, the Hon. Eustace Fiennes, M.P., Mr. E. J. Gowen, Mr. E. V. Hiley, Mr. W. T. Jerred, C.B., Mr. F. R. Harding Newman, Mr. J. Pointer, M.P., Mr. W. T. Postlethwaite, Mr. Raymond Unwin, and Mr. Henry Vivian, with Mr. A. N. C. Shelley, of the Local Government Board, as Secretary.

There is room for recommendations and we trust that these may be not only in the direction of greater stringency which may be required on some points, but of greater leniency on many others, and, above all, of a wise and discriminating elasticity.

We could have wished, in the interests of architecture, that the decision of Mr. Justice Astbury in the case of *Joseph v. London County Council* had been different. His lordship was asked to decide on the construction of the covenant in a lease from the London County Council for eighty years from 1887, whether an electric light advertisement installed on the façade of a building at the corner of Shaftesbury Avenue and Piccadilly Circus was an alteration in the elevation or in the architectural decoration of the building, both prohibited. The Council contended that the installation had caused such an alteration. The lessee, Mr. Samuel Joseph, held that it had not. The advertisement consisted of a framework of light iron vertical and horizontal bars bolted together in the form of a wide-meshed net to which the letters of the advertisement, made of wood, and fitted with electric lights, were affixed. The whole framework was suspended from the upper part of the premises by steel bands, none of which was affixed to the structure of the building, but embraced the ornamental stonework on the top of the façade. Struts resting on the stone cornices further supported the vertical bars. His lordship said that if the prohibition applied to any alteration in the appearance of the building he saw no limit to be placed on it or any means of arriving at any limit. He thought the covenant must be held to relate to the fabric of the building, and not merely to alterations in its appearance by temporary advertisements or frameworks hung outside which could be removed at any time. He held, therefore, that the advertisement in question was not a breach of the covenant. It is disheartening to architects and prejudicial to any right appreciation of architecture that buildings, however beautiful, may be disfigured by any occupant who thinks a blatant advertisement is good for his business.

Westminster Hall roof is not the only old piece of timber construction that has suffered from the attacks of larvæ, or "worms," as they are popularly called. These have so seriously attacked the woodwork at the church of King Charles the Martyr, Tunbridge Wells, that the Vicar, the Rev. A. W. Oliver, says the congregation might have had the building tumbling about its ears. The ravages have evidently gone on unchecked for many years, for oak pews, pillars, gallery supports, the fine panelling, and the huge baulks of timber supporting the galleries and walls, and even the woodwork of the roof, have all received attention, and in some places were in a crumbling condition—in fact, some of the beams are described as having been "almost eaten to pulp." The problem was immediately tackled, and, when completed, the renovations will have involved an expenditure of £250.

We sympathise with the reference made at a recent meeting of the Newcastle Society of Antiquaries to damage done recently to certain parts of the Roman Wall, by Mr. H. F. Abel, who said he was sorry to see the amount of destruction along the Wall, especially at a place known as "The Cat's Stairs," west of Housesteads. There the stones had been tumbled about, evidently by people who wished to analyse the famous Roman mortar. This vandalism was abominable. He suggested that boards should be fixed at the places most affected by British tourists, urging the need for the protection of the Wall. What was meant for the public should be protected by the public.

The Glasgow Corporation last week accepted the offer of Messrs. J. Emery & Sons, Polmadie, for the digger, mason, and brickwork in connection with the extension of the Municipal Buildings. The amount of the contract was reported to be £67,124. Offers by other firms for the steel and carpenter work, amounting altogether to over £19,000, were also accepted. Messrs. Watson & Salmond, of Glasgow, are the architects.

BRITISH ARCHITECTURAL DRAWINGS IN PARIS.

The exhibition of British architecture in Paris, organised in England under the auspices of the Royal Institute of British Architects and the Architectural Association, at the request of the Société des Architectes Diplômés par le Gouvernement, will be open from May 15 to 23 at La Salle de l'Ancien Jeu de Paume, Place de la Concorde, Paris. The exhibition is divided into three sections, namely, modern work, students' work, and architects' holiday sketches. The exhibition will be opened by the President of the French Republic, Monsieur Poincaré.

Members of the Institute and Association are invited to attend a party which is going over to Paris in connection with the exhibition. The following is a programme of the arrangements:—

Friday, May 15.—10 A.M. Leave Charing Cross, arriving at Paris 5.30 P.M. 8.30 P.M., banquet with the Société des Architectes Diplômés par le Gouvernement, at which the Under-Secretary of State for Fine Arts will preside.

Saturday, May 16.—10 A.M. Opening of the exhibition of British Architecture at La Salle du Jeu de Paume, Place de la Concorde, by Monsieur Poincaré, President of the French Republic. Afternoon, visit to salon.

Sunday, May 17.—Visit to Versailles.

Monday, May 18.—Visit to Fontainebleau.

Members of the Royal Institute of British Architects and the Architectural Association wishing to join the party, which will include ladies, should communicate with Mr. F. R. Yerbury, Secretary of the Architectural Association, 18 Tufton Street, immediately, who will supply further details.

LONDON COUNTY COUNCIL.

Dangerous Structures.

Advantage was taken of the consideration of the annual estimates at County Hall on Tuesday last to initiate a discussion on dangerous structures in London. On the submission of an estimate of £3,840 relating to control over the construction of buildings, means of escape from fire, and analogous matters under the London Building Acts, Mr. W. C. Johnson moved that the Building Acts Committee be instructed to report to the Council as to the sufficiency of the staff to deal with complaints received from the public in connection with unsafe buildings, lack of fire exits, and similar matters. Complaints which had been received so long ago as 1911 were still undealt with, asserted Mr. Johnson, and the whole question should be seriously considered.

Mr. Andrew Taylor said the committee had been considering the matter very carefully; they were, in fact, obsessed with its importance, and the staff had been largely increased. In 1907 the arrears of cases of complaints to be dealt with amounted to 28,000, since when the committee had been endeavouring to overtake the work. He hoped the amendment would not be pressed.

Mr. R. C. Norman (Chairman of the Finance Committee) pointed out that the money expended by the Council in this direction had, during the last three years, increased by 38 per cent., and it was entirely wrong to contend that nothing was being done.

The amendment was defeated on a division, and the estimate agreed to.

Town Planning in London.

On the consideration of a later estimate, Mr. Gautrey moved that it be referred to the Finance Committee to consider and report as to the submission of a supplemental estimate of £1,000 for preliminary expenses in connection with bringing into operation in the County of London of the Housing and Town Planning Act. Under that beneficent Act, no recommendation whatever had reached the Council, though outside authorities were giving effect to its provisions in various ways. Every year's delay meant greater difficulty and greater cost, and he urged the committee to show that they had some sense of responsibility in the carrying out of the Act.

The Rev. S. Headlam seconded.

Mr. Taylor pointed out that a sum of £500 was included in the estimates for this special work. The committee concerned had been doing a good deal of spade work, and, though no definite scheme was before the Council, their officers were engaged in working out a very large scheme of town planning, which he hoped before long to be able to bring before the Council.

The amendment was negatived, and the estimate adopted.

New London County Hall.

Considerable discussion took place on an item of £460,000 included in the estimates to cover expenditure on the new County Hall during the ensuing year. Several Progressive members vigorously contended that the delay which has taken place in the erection of the building was entirely attributable to lack of enthusiasm on the part of the Municipal Reformers. It was pointed out that for several years the sum actually expended in connection with the work had fallen very far short of the money allocated, and more than one member facetiously expressed doubt whether any member of the Council would live to see the building completed. The whole thing was characterised as a scandal to London.

Major Gray said he had been simply amazed at the procedure adopted for the execution of the work. Personally, he had very little doubt that a large portion of the delay was due to the fact that the Council had insisted on its own architect collaborating with the architect whose design had been accepted. The result was that before any step could be taken the two architects had to agree, and delay was consequently unavoidable.

Mr. Salmon (ex-Chairman of the Establishment Committee) also contended that the fundamental fault lay in the employment of two architects on the same work. Latterly, also, the building lock-out had greatly interfered with the progress of the building.

Ultimately a formal amendment for the reduction of the estimate by £1, which had been moved earlier in the discussion, was withdrawn, and the estimate agreed to.

PADDINGTON NEW CENTRAL BATHS.

In a competition limited to six firms, and wherein three premiums of £100, £75, and £50 severally were offered, Mr. Leonard Stokes, F.R.I.B.A., the assessor, has made the awards here shown: First, to Mr. Harold Burgess (Queen Anne's Chambers, Westminster); second, to Mr. Herbert Shepherd (No. 4); and third, to Mr. J. E. Franck (No. 3). Mr. Stokes in his report remarked that "he had no hesitation in stating that Scheme No. 5 was undoubtedly the best design, and that he felt confident its author would provide the Council with a satisfactory building in every way." With this we are in accord, and we may go further by saying that Mr. Stokes can have had no difficulty in assessing for the second place.

The requirements included two swimming baths (100 feet by 35 feet and 75 feet by 30 feet severally), fifty slipper baths, also Russian baths, &c., the main bath hall to be adaptable for use during the winter months as a public hall. Mr. Burgess has developed a fine plan, showing good central entrance hall, leading from Porchester Road to the main bath in rear of site, with the smaller hall to the left hand and the laundry to the right towards the front of the site. All the slipper baths are assembled on the first floor, a notable arrangement, thus providing good grouping, orderly and economical administration, and appropriate symmetry. Mr. Burgess has introduced separate sets of Russian baths for the sexes, and has further emphasised his belief in centrality and grouping by obtaining a midway position on the site for the boiler house, thus making for economy of output. His arrangement for feeding the boilers is also noteworthy, being by gravitation from the loading platform, which is reached by an hydraulic service lift. The sliding roof to the main bath hall is a good feature, whose prototype is found in the Wood Green public baths, designed by the same architect. The elevations show a restrained Renaissance treatment with an emphasised central portion on the main front, decorated with six Ionic detached columns, and this treatment is repeated with variations upon the Queen's Road entrance façade, the columns in this case being coupled. Statuary groups surmounting the centre of main front and the borough arms over the main entrance lend pleasant relief to the general restraint. Mr. Burgess estimates the cost at £41,000.

Mr. Shepherd's scheme is on the lines of the selected one so far as the main bath and symmetrical disposition are concerned, but the grouping differs considerably; his slipper and Russian baths take their place to the left and the second-class swimming bath to the right towards the front of the site, with the laundry tucked in between the two halls. The free Renaissance design is passable, but uninspired. Mr. Franck places his two bath halls very much as in the selected design, but the general effect of the plan is quite different, and loses in perspicacity; nor can we say much for the elevational treatment.

COMPETITION NEWS.

Belfast.—The design (No. 68) submitted by Mr. J. Cumming Wynnes, of Edinburgh, has been placed first in the important competition for an art gallery and a museum proposed to be erected in the Botanic Gardens by the Belfast Corporation. According to the conditions the complete scheme will involve an outlay of £75,000, but it is only intended to spend at first £30,000. Sixty-nine sets of plans were adjudicated upon by Dr. J. J. Burnet, A.R.S.A., and they will be exhibited at the City Hall. Premiums of £100, £75, and £50 have been awarded to the following architects respectively in the order given, viz.: Mr. Richard Gunn, Glasgow; Messrs. Wright & Wylie, Glasgow; Mr. T. S. Lawson, London.

Dudley.—The Town Council on Tuesday last agreed to invite competitive designs from architects practising within 150 miles of Dudley for the provision of town hall, police buildings, and municipal offices at a cost of £40,000. Last month a committee recommended that four selected firms should be asked to submit designs in a limited competition. The President of the R.I.B.A. will be asked to appoint an assessor.

Mold.—The Urban District Council have this week deferred consideration of the assessor's report on the designs for the proposed fire station and caretaker's house, to be erected at Earl Road.

ILLUSTRATIONS.

THE GRANGE, GOUDHURST, KENT.

The Grange, formerly known as Horsmonden House, was the home of the Horsmondens, who played an important part in the history of Goudhurst during the eighteenth century. The house was built in 1670, and has been added to at different times. Situated on the high ridge of hills between Tunbridge Wells and Maidstone, being about eleven miles from each, it stands on an elevation with terraces and sunk garden, and is surrounded by old trees; the old-world "Lovers' Walk" is some two hundred years old. The old house was constructed with inside and outside walls, with an air space between, thick oak lathing within, and weather boarding externally. Internally there are large oak beams, oak floors, and a fine Queen Anne oak staircase. The house has lately been very carefully restored for the owner, Mr. Leonard Franklin, J.P., by Mr. F. W. Young, F.R.I.B.A., and several additions made in keeping with the older parts, including a drawing-room, billiard-room, and bedrooms. A great deal of the interior, which was not of a very substantial nature, was taken out and reconstructed. The oak panelling in the hall, which had been removed, was replaced and the beams exposed; the fireplaces, which had been bricked up in the middle of the nineteenth century, were opened up and now form an important feature of the house. The billiard-room has been erected on the site of a barn, and incorporates the timber and tiles of that outbuilding; the fireplace has stone jambs, with back and hearth of tiles laid on edge; the oak panelling formerly stood in a house at Otford. The dining-room ceiling, being very low, was raised about twelve inches, and the walls lined with old oak; over the centre of this room at the intersection of two decayed beams there was found a large king post, which went up into the roof. The house is entirely furnished in old English furniture, mainly of the Queen Anne and Charles II. periods. Externally the house presents a picturesque appearance with its many gables, white painted hanging tiles, and half-timber treatment. The tiles were taken from some old stable buildings. The restoration and additions were carried out under the supervision of the architect, Mr. Young, by Messrs. Busset & Co., of Prince's Square, W., and by the local builders, Messrs. Davis & Leaney, of Goudhurst. The drainage and sanitary work was carried out by Messrs. Dent & Hellyer.

OXFORD COLLEGE SERIES.—NO. 138.—MANSFIELD.

Our series of illustrations of Mansfield College, commenced on April 17, is this week continued with a view of the interior of the library.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

THE annual general meeting of the Institute was held on Monday last, Mr. George Hubbard (Vice-President) occupying the chair.

Mr. H. V. Lanchester (Vice-President), acting as Hon. Secretary, moved that a vote of condolence on the death of the Duke of Argyll be sent to Princess Louise. The late Duke was Vice-President of the International Congress of Architects held in London in 1906. The vote was agreed to in silence, all members standing.

The deaths were also announced of Sir Edward Durning Laurence, Hon. Associate, and Mr. Alfred Aitchison, Associate, brother of the late Professor Aitchison, R.A., and letters of sympathy were ordered to be sent to their relatives.

The Chairman then presented the annual report of the Council, which he suggested could be considered clause by clause as it was numbered.

The principal speakers in the discussion which followed were Messrs. William Woodward, H. Shepherd, Edwin T. Hall, F. R. Farrow, Maurice B. Adams, G. L. Elkington, and several provincial members.

Mr. Woodward dealt chiefly with the financial position of the Institute, which he claimed was satisfactory. In a few years, he anticipated, the Institute would be in possession of their commodious premises free of all encumbrances.

Speaking on the grant to the Architectural Association, Mr. Shepherd suggested that some grants for teaching should be made to provincial architectural schools or to the allied societies.

This was opposed by Mr. Farrow, who stated that the Architectural Association was a voluntary body of private persons, and on quite a different footing to the provincial schools, which were run on commercial lines and charged heavy fees.

Mr. Hall proposed that, as the Council felt able to make considerable grants to various bodies, they might increase the grant to the Architects' Benevolent Society, which did very excellent work both in London and throughout the country. He appealed to members and architects in general to come forward and subscribe to it.

On the proposed establishment of a Legal Defence Fund, two of the provincial members claimed that this would be of great assistance to architects in any disputes with public bodies or other clients. The Chairman stated that this Defence Committee would be run on similar lines to the Medical Defence Union. The intervention of the Medical Defence Union had been found to cause the abandonment or settlement of 75 per cent. of actions started against doctors.

Mr. Adams raised the question of official architecture and salaried architects, but the Chairman said that it would be well to await the final report of the committee considering this matter. The report would not be completely against official architecture.

On the report of the Science Standing Committee, Mr. Farrow stated that valuable information on timber specifications and on roofing tiles was to be made public in a short time.

Mr. Lanchester gave an account of the part the Institute had taken in the conferences on the town planning of London and its environs. The Institute was not altogether satisfied with the action of the Government in this matter, but they were doing the best work they could in the six district conferences. He was afraid that each locality was going to treat its own area without sufficient consideration of the main arterial roads, which were urgently required.

After Mr. Saffery, the professional accountant to the Institute, had answered various questions on financial matters, Mr. Woodward moved a vote of thanks to the Secretary and staff of the Institute. He regretted the death of their valued chief clerk, Mr. J. C. Tanner, and the ill-health of the Assistant Secretary and the Librarian.

Mr. Elkington moved the thanks of the Institute for the able services of the Hon. Auditors, Mr. John Hudson and Mr. W. H. Burt, who had acted for several years.

After these votes had been carried, the Chairman announced that Mr. R. S. Ayling and Mr. H. A. Saul had consented to act as the new Hon. Auditors, and the meeting concluded with their election.

SINCE the publication of the last annual report the Council have held twenty meetings, of which the Council elected in June last have held sixteen.

Obituary.

The losses by death have been as follows: Fellows: John Belcher, R.A., R. H. Burden, W. L. Carruthers, T. E. Lidiard James, W. C. Ralph, Ernest A. Runtz, R. D. Sandilands, John Oldrid Scott, Arnold Thorne, W. L. Vernon, J. D. Webster, W. C. Williams, George Wilson; Retired Fellows: James Hine, H. J. Lanchester; Associates: E. B. Crossley, E. C. Cummins, Edward Instone, Joseph Johnson, J. Humphreys Jones, William Murray; Licentiates: E. C. H. Bird, T. E. G. Cooper, P. R. Donald, William Ferguson, F. R. Laverick, Thomas McMillan, W. J. Oliver, F. E. Pinkerton, F. Léon Pither; Honorary Associate: Sir Alfred East; Honorary Corresponding Members: Professor C. Babcock, George Browne Post, Heino Schmieden, J. A. E. Vaudremer.

Membership.

The following tabular statement shows the present subscribing membership of the Royal Institute compared with corresponding periods of 1911, 1912, and 1913:—

Year.	Fellows.	Associates.	Hon. Associates.	Total.
1911	862	1,509	55	2,426
1912 . . .	859	1,581	56	2,496
1913 . . .	847	1,630	54	2,531
1914 . . .	852	1,695	56	2,603

During the official year 30 Fellows have been elected, 97 Associates, 2 Honorary Fellows, and 3 Honorary Associates.

Licentiates.

There are 2,070 Licentiates on the roll. Since the publication of the last annual report seventeen Licentiates have passed the special examination qualifying for election to the Fellowship and ten have been duly elected as Fellows.

The Examinations.

The progressive examinations were held in June and November-December 1913. The preliminary was held in London, Belfast, Birmingham, Bristol, Glasgow, Leeds, Liverpool, Manchester, and Newcastle; the intermediate in London, Belfast, Bristol, Glasgow, Leeds, Liverpool, Manchester, and Newcastle. The final and special examinations were held in London, and the special examinations for Colonial candidates in June 1913 in Sydney, and in December 1913 in Toronto. The results are shown in the following table:—

	Admitted.	Exempted.	Passed.	Relegated.
Preliminary . .	283	81	141	61
Intermediate . .	196	28	103	65
Final and Special .	213	—	96	117

The statutory examinations qualifying for candidature as district surveyor in London, and for candidature as building surveyor under local authorities, were held in London in October 1913. There were six candidates, of whom four passed.

The Henry Jarvis Studentships.

The first studentship at the British School at Rome awarded under the Henry Jarvis bequest was awarded to Mr. Louis de Soissons, who is now in residence at Rome, and the Henry Jarvis Scholarship at the Architectural Association has been awarded to Mr. H. J. H. Dicksee.

Grants.

Since the issue of the last annual report the Council have made the following grants: The Architectural Association, £300; exhibition of English architecture (Paris), £250; the Library Fund, £200; St. Paul's Cathedral Preservation Fund, £105; Architects' Benevolent Society, £100; new British School at Rome, £50; Crystal Palace—Mansion House Fund, £26 5*s.*; the Architectural Association Sketch Book, £25; Royal Architectural Museum, £21; British School at Rome, £21; Byzantine Research and Publication Fund, £10 10*s.*; Alma-Tadema Memorial Fund, £10 10*s.*; Sir Robert Hunter Memorial Fund, £10 10*s.*; Choisy Memorial Fund, £6; Egyptian Exploration Fund, £5 5*s.*

Competitions.

The following have been the President's appointments to assessorships during the year commencing May 1913:—

Bradford .	Dwelling Houses	Mr Henry T Hare.
L.C.C. .	Elementary Schools	Mr. John W Simpson.
Manchester.	Additions to Royal Exchange . .	Mr. James S. Gibson.
Sunderland.	Training College . . .	Mr. P. S Worthington,
Bath . .	Secondary School	Mr. Henry T. Hare.
Hendon .	Swimming Baths	Mr. H. W. Wills.
London .	Metropolitan Water Board Offices .	Mr. E. Guy Dawber.
Paddington	Central Baths	Mr. Leonard Stokes.

Mr. T. E. Collcutt was appointed assessor in the Ottawa Government Buildings competition by the Council of the Royal Institute at the request of the Canadian Government.

Registration.

The proposals of the Council with regard to registration were laid before the general body at special general meetings on December 1, 1913, and January 5, 1914, and at the second of these a resolution was unanimously passed in favour of proceeding with a policy of registration by charter. The detailed proposals based upon this resolution are now in the hands of the members.

The Council have decided to oppose the Architects' Registration Bill, which is now being promoted by the Society of Architects.

Board of Professional Defence.

During the course of the year the Board have been chiefly engaged in considering a scheme for the establishment of a Legal Defence Union for architects. It is hoped that at an early date particulars of the scheme will be submitted to the general body.

Professional Conduct.

On the advice of the Professional Questions Committee the Council have dealt with all complaints as to the professional conduct of members that have been laid before them. Under the provisions of By-laws 24 and 25 a Fellow has been expelled for unprofessional conduct and a Licentiate has been expelled for taking part in a competition which had been banned by the Council.

The Schedule of Charges.

The revised schedule of charges has been considered at several general meetings since the issue of the last annual report, and it is hoped that the discussion of the schedule will be completed before the end of the present session.

Official Architecture.

The committee mentioned in the last annual report has met regularly during the session, and has presented to the Council an important interim report on the subjects referred to it. The committee is now peparing its final report.

The Allied Societies.

A committee consisting of the Presidents of all the Allied Societies in the United Kingdom is considering various suggestions from the Councils of the Allied Societies with reference to the re-arrangement of their boundaries and the improvement of their organisation. The report of this committee is now in the hands of the Council.

The Board of Architectural Education.

Problems in Design.—During the year 524 designs have been received and adjudicated on by the Board, and of these 373 have been approved, being an increase of 296 and 224 respectively on the previous year. These designs have been exhibited in the galleries of the Royal Institute for three days after each adjudication, and a large number of visitors have viewed them. Designs made by students at the Royal Academy are accepted in lieu of the four problems in design required from other candidates. Students may submit, in lieu of one of the alternative problems, designs made by them in a recognised School of Architecture. Winners of the Soane and Tite prizes, together with those receiving hon. mention therein, are exempted from submitting the four problems in design. Designs submitted in these competitions which have not received a prize may be submitted to the Board for approval in lieu of one of the problems.

National Scholarships.—The Board, at the request of the Board of Education, have conducted the examination of candidates for the National Scholarship in Architecture. These candidates are required to pass the intermediate examination, but are exempt from submitting the testimonies of study required from Institute candidates.

Exemptions from the Intermediate Examination.—The privilege of exemption from the intermediate examination is now granted by the Council, on the recommendation of the Board, to students who have passed with distinction through a full course of study at all Colonial or foreign universities and Schools of Architecture.

Examination of Licentiates.—At the request of the Board arrangements have been made with the Royal Victorian Institute of Architects, the New Zealand Institute of Architects, and the Royal Architectural Institute of Canada to conduct the examination of Licentiates desirous of becoming Fellows, on identical lines with that held in London.

The Art Standing Committee.

Mr. E. Guy Dawber was elected Chairman.

It was felt at the early meetings that some definition in the work of the committee was necessary in order that matters could be dealt with which were not necessarily the work of the Council. Careful consideration was given to this matter, and the functions were defined as follows:—

1. To deal with the preservation and repair of national monuments.
2. To consider the artistic aspects of all propositions for new works and public improvements.
3. To make suggestions as to public improvements of an architectonic character.
4. To consider any course that should be adopted for the purpose of securing a higher standard of architectural design, taking into consideration both the training of the architect and the education of the public.
5. Generally, to deal with all matters tending to advance the art of architecture.

Instances should be reported where the services of the R.I.B.A. may assist in the promotion or preservation of some work of British architecture.

Of the remaining subjects under review, the following were the most important:—

It was regretted that H.M. Office of Works were unable to embody the old General Post Office in the new buildings to be erected upon that site. The committee therefore considered the new proposal in conjunction with the official plan of the new roadway from St. Paul's Bridge at the east end of the cathedral, and it is to be further regretted that the official lay-out takes but slight advantage of the opportunity of a great London improvement, for which such facilities so seldom occur.

The committee gave its full support to the proposals for preserving two important London houses. With regard to No. 75 Dean Street, the building has been scheduled under the Ancient Monuments Acts, and is, therefore, for immediate purposes, free from risk of demolition. With Nos. 55 and 56 Great Queen Street—the well-known brick house, said to be the work of Inigo Jones—the case is different, and cannot be scheduled. The owners are considering influential representations urging the retention of what must be regarded as an early example of street architecture.

The scheme of National Cottage Building promoted by the Board of Agriculture was carefully considered by the committee. With its principles the committee were in general agreement, but made strong recommendations for the maintenance of local tradition, both in design and construction.

The Literature Standing Committee.

Mr. W. H. Ward was elected Chairman.

The committee's recommendation that an increase should be made in the annual grant to the library has been adopted; the Council now gives £200. This increased amount will enable the committee to add to the loan collection duplicate copies of many books which are in request, but which have not hitherto been available.

The question of the adequacy of the existing accommodation in the library for the storage of drawings having been considered, a report has been sent forward to the Council containing recommendations for the improvement of the present system of drawers, and suggestions for its extension.

A scheme for the publication of the Burlington-Devonshire collection of drawings has, owing to the necessarily heavy expenditure involved, not been adopted by the Council.

The Practice Standing Committee.

Mr. William Woodward was elected Chairman.

Revision of Conditions of Contract.—The Sub-Committee dealing with this subject has reported to the effect that having sat since March 1911, and having dealt with certain clauses of the existing conditions of contract, and also with sub-contractors' agreements, and the Institute of Builders having expressed their desire that the whole of the clauses of the conditions of contract should be dealt with at the same time rather than in a piecemeal manner, and this view having been adopted by the Council, the Sub-Committee desired to be relieved of their task. This report has been adopted by the Committee, and has been submitted to the Council.

Quotation of Prices by Merchants to Architects.—The question of the quotation of prime cost prices to the architect and to the builder, in regard to which a deputation from the National Light Castings and Builders' Merchants' Joint Committee was received by the Committee last session, has been unable to be carried further owing to the promised statement as to what percentage represented a fair discount for cash, and what should be allowed to the builder for handling material, not having been received from the Joint Committee.

Position of Sub-Contractors, and Form of Sub-Contract.—It has been found that the question of a form of sub-contract and the position of the sub-contractor generally, as to which both contractors and sub-contractors have expressed some anxiety for a settlement, are too intimately connected with the conditions of contract to be advantageously dealt with separately.

L.C.C. General Powers Act, 1909, *and Form published by the District Surveyors' Association.*—In connection with the provisions, Section 22 (31) of this Act, the District Surveyors' Association published a form upon which it was suggested that the calculations and particulars to be delivered to district surveyors under the section quoted should be set forth. The desirability of the general adoption of this form was considered by a sub-committee, upon which Messrs. C. Stanley Peach and F. N. Jackson also sat as consultative members, and after conference with representatives of the District Surveyors' Association the sub-committee reported that unless the form was so modified as to make its optional character self-evident, its use appeared objectionable as tending to extend by custom the powers of the district surveyors beyond the limits contemplated by the Act. This report was adopted by the Committee and submitted to the Council.

Practice as to Opening of Tenders.—A representation has been received from the National Federation of Building Trades Employers deprecating the growing practice by architects and others of receiving tenders without opening them in the presence of those tendering. The Committee carefully considered the matter, and have reported to the Council that in their opinion the practice of opening tenders in the presence of those tendering is the proper practice, and should be universally adopted, not only by architects but also by all public bodies and companies.

Use of Licentiateship Affix.—Frequent cases of violation by Licentiates of their undertaking on election only to use their affix in full having been brought to the notice of the Council, the subject was referred to the Committee, who have recommended that a reminder as to the penalty attaching to breach of this undertaking should be prominently published in the *Journal*, and that a request be issued to the professional Press inviting their co-operation in the observance of this regulation.

Official Architecture Committee: Cottage Building.—A communication from the Official Architecture Committee on the question of cottage building by the State has been considered by the Committee, who have submitted a report to the Council recommending that a deputation should be sent by the Institute to the Board of Agriculture to deprecate the standardisation of designs for cottages for small holdings, &c., and to urge that they shall be designed by qualified architects to suit the special circumstances and requirements.

Members' Queries, &c.—Some fifty inquiries bearing upon points of professional practice and kindred matters have been received and dealt with. Of these nearly one-half were concerned with difficulties in connection with the existing R.I.B.A. conditions of contract and the schedule of professional charges. The inquiries, being necessarily of a confidential character, cannot be referred to in detail. In view of the number of inquiries received from architects, the Council have deemed it necessary to relieve the Committee from the obligation of dealing with the numerous inquiries from persons outside the Royal Institute. In accordance with their established practice, the Committee have been careful to give no opinion on matters *sub judice*, or on *ex parte* statements, seeing that such opinions might prove detrimental to brother-professionals.

The Science Standing Committee.

Mr. Frederic R. Farrow was elected Chairman.

Preservation of Decayed Stonework.—As a result of correspondence between the Science Committee and the Society for the Protection of Ancient Buildings a short article was published in the *R.I.B.A. Journal* of July 26, describing a few simple processes suitable for the preservation of decayed stonework, which it is hoped will be of use to architects.

Tests on the Weathering Properties of Building Stone.—A few years ago the authorities of the Geological Museum in Jermyn Street offered to carry out certain weathering tests on the roof of the museum on samples of various building stones, and invited the co-operation of the Science Committee. During this last session two members of the Committee visited the museum and inspected the samples undergoing these tests, the procedure being fully explained to them, and they report "that the tests are being made on the most careful lines, and the information thus obtained will be of great value." They also suggest that annual inspections of these stones should be made during the next five or ten years, and that a brief record be inserted in the Science Committee's records after each inspection.

White Paints.—Evidence was given by two members of the committee before the Departmental Committee at the Home Office dealing with paints as used for builders' work, and subsequently at the request of the Chairman, Sir Ernest Hatch, Bart., a further statement of the views of the committee was made upon the use of lead paints. It is believed that the Institute was approached on this important matter on account of the committee's recent publication on paint material.

Defective Roofing Tiles.—In the last annual report of the Science Standing Committee reference was made to the work of the sub-committee which was appointed to consider the causes of the defects so frequently found in roofing tiles. This sub-committee has held further meetings and additional interesting specimens of roofing tiles have been received and examined, and a report has been presented to the committee and certain recommendations therein contained forwarded to the Council, and approved by that body.

The committee has offered to arrange for a series of short papers dealing with "Roofing Tiles and their Defects" to be read at a meeting of the Institute during the ensuing session.

L.C.C. Drainage By-laws.—The sub-committee appointed to consider the above by-laws held further meetings and duly reported. The Science Committee has carefully considered the report and sent it, after some emendation, to the Council. At the request of the Council the Hon. Secretary wrote to the Clerk of the L.C.C. requesting that the L.C.C. would give the sub-committee an opportunity of being heard when the revised by-laws are being drafted, and a reply was received to the effect that any proposals the Institute may desire to put forward would be considered if it should be decided at any time to revise the by-laws in question.

Construction of Belfries and Effect of Vibration on Buildings.—The committee has had under consideration the subject of construction of belfries and the effect of vibration on buildings, and has appointed a sub-committee to deal with the matter. This sub-committee has held several meetings, and it is hoped that data will ultimately be published likely to be useful to architects having belfries and similar structures to deal with, or cases of vibration in buildings.

Reference Index.—A suggestion having been put forward by a member that a reference index should be prepared of journalistic and other articles on subjects of special interest to the profession, a sub-committee was appointed, and duly considered the proposal, but reported that it was inadvisable to proceed with the undertaking.

Waste Pipes from Lavatory Basins in the Metropolitan Water Board Area.—Urgent representation having been made to the Institute by the majority of the firms supplying sanitary appliances in London and the district as to the onerous and vexatious restrictions of the Metropolitan Water Board as regards lavatory-basin wastes, a small committee met the manufacturers to hear their views. This deputation drafted a letter, which was sent to the Council with the recommendation that it be sent to the Solicitor of the Water Board.

Researches on Timber.—In the last annual report reference was made to the fact that the Council had, on the suggestion of the Science Committee, memorialised his Majesty's Treasury with a view to obtaining a grant for investigation upon problems connected with timber, the solution of which would benefit architects. Though any definite reply to this memorial is still awaited, this action has at least brought the Science Committee through Government channels into touch with the Cambridge Forestry School, which, under the direction of Mr. E. Russell Burdon, is carrying out a series of most useful researches. At Mr. Burdon's request the committee formulated a series of problems, the solution of which it was considered would prove of great value to all who have responsibilities in connection with timber; and not only have these suggestions been referred to in the report of this school to the University Senate, but some of the lines of work put forward have been taken in hand. The attention of architects is therefore directed to the reports of this Forestry Centre.

Among other matters dealt with in the course of the session on which advice has been sought, or which are still under investigation, may be mentioned: (*a*) Stains on Portland stone, (*b*) killing "worms" in timber, (*c*) dry rot, (*d*) factory lighting, (*e*) lead roof coverings.

The Town Planning Committee.

During the past year the most important work of the Town Planning Committee of the Institute has been in connection with the town planning of London, with particular reference to the arterial roads, the Institute having strongly pressed for the creation of some authority able to deal with the matter in a comprehensive and effective manner.

As a result of the conference reported last year, at which representatives of the Royal Academy, the Institution of Civil Engineers, the Surveyors' Institution, the Institution of Municipal and County Engineers, and the London Society, met the Town Planning Committee of the R.I.B.A., the Prime Minister consented to receive a deputation at which an opportunity was given for putting before him the views of these bodies. As a result of the arguments there put forward, the Prime Minister suggested, as a temporary measure, that the different local authorities and professional bodies should go into conference with the President of the Local Government Board and see if some voluntary measure of co-ordination would be practicable to carry on till something more effective could be advised.

Mr. Asquith then said: "On the larger question as to what authority—and I confess I am very much impressed with the view that there ought to be some authority—as to what should be the character and position and the precise functions of any authority which might ultimately seem to be the best fitted for the purpose in regard to the general survey of schemes of this kind, that is a matter which I should like to reserve for further consideration."

As a result of this meeting the President of the Local Government Board called a general conference, at which the R.I.B.A. was represented. At that conference it was decided that in order to study the details of the problem, London should be divided into six areas; and that district conferences, composed of representatives of all the different authorities affected, from the City to the outlying district councils, together with representatives from this Institute and other professional bodies, should be set up, and should study the problems of their district collectively. There would thus be in each of these conferences representatives from the Government Departments and others who were familiar with the work of all the other conferences; in this way a commencement can be made of the study of the problem as a whole and the co-ordination of the town planning schemes. Representatives of the R.I.B.A. have agreed to serve on the different conferences, all of which have now commenced their work. There can be no doubt that the action of the R.I.B.A. in calling together the other professional bodies and arranging a deputation to the Prime Minister has materially helped to focus attention on the importance of securing some central authority competent to deal with these problems.

In addition to this general work, small groups of the Town Planning Committee have been studying the individual proposals as to new arterial roads put forward by the Traffic Department of the Board of Trade, and they have prepared reports of these proposals which are being submitted to the district conferences.

Action is also being taken in connection with the different town-planning schemes that are being prepared up and down the country.

Report of the Auditors for 1913.

There is a very satisfactory balance for the year amounting to £1,302 1*s*. 3*d*., and the interest on the overdraft for the year is £152 13*s*. 9*d*., in place of £274 3*s*. 10*d*. last year.

The bank overdraft this year is £4,846 7*s*. 1*d*., in place of £6,391 13*s*. 11*d*. last year.

The expenditure account shows a net increase of £357 18*s*. 10*d*. compared with last year. This amount includes an additional grant of £100 to the Architectural Association and £26 5*s*. to the Crystal Palace Fund.

The income from the galleries amounts to £312 6*s*. 3*d*., in place of £365 3*s*. 2*d*. last year.

During the last three years there has been a steady increase in the number of Associates.

If the satisfactory state of the finances of the Institute is to be maintained it is essential that all eligible Associates and Licentiates should be induced to become Fellows.

The settlement in connection with the winding-up of the Architectural Union Company is still incomplete.

At the Whitechapel Art Gallery there opens to-day, the 8th inst., the summer exhibition of Twentieth Century Art, being a review of modern movements in art. It will include pictures, sculpture, fabrics, furniture, &c. The exhibition closes on Saturday, June 20.

EARLY AMBONES.

By J. Tavenor Perry.

The ambone is a feature quite unknown to English Ecclesiology, and we look in vain for the name in any Mediæval documents relating to buildings; but it comes to us direct from the Italian, like so many other architectural words, and is now as much a part of our language as other technical terms, such as cornice, cupola, or loggia. With the question of whence the Italians derived the name we are not directly concerned, but a statement of some of the theories is not without interest. The probabilities are that the word is of purely Greek origin, since the ambone first made its appearance in the Eastern churches, and was derived from *anabainein*, to mount, in reference to the going up which had to be accomplished to reach the enclosed platform or pulpit. As the thing itself was introduced into Italy from Constantinople the name doubtless came with it; and that the Italians perfectly understood the allusion which it contained to this ascent is shown by the verse inscribed on the earliest one they erected, that of St. Peter's in the Vatican:—

> Scandite Cantantes Domino Dominumque Legentes
> Ex Alto Populis Verba Superna Sonent.

Nevertheless, it has been common to ascribe the origin of the word, as does Ducange, to the Latin word *ambiendo*, on account of the parapet which surrounds the pulpit; and Rohault de Fleury quotes the description given by Wallafride Strabon in the ninth century, which runs: "Ambo ab ambiendo dicitur quia intrantem ambit et cingit." But it is sufficient for our purpose to know that the earliest ambones received this name, and by that they have been known ever since, not only in technical, but in general literature, for Milton uses the word in the sentence, "The admirers of antiquity have been beating their brains about their ambones."

From the earliest time that any number of people assembled together to listen to a speaker some raised position, natural or artificial, had to be found for him. The first Scriptural reference to the use of such a thing at any religious ceremony was on the occasion of the dedication of the Temple, when Solomon had a brazen scaffold made and set up in the midst of the court, and stood upon it to offer up his prayer. Again, there is in Nehemiah an account of the pulpit of wood which Ezra the Scribe had made, from which he read and expounded the Law to the people. This must have been a platform of some size, for we read of thirteen others who stood with him, some to his right hand and some to his left; and both in this particular and in the purposes to which it was applied it prefigured the Gospel ambones of the Italian churches. Either of these historical pulpits may be regarded as the precursor of the reading desk which is to this day set up in the centre of every synagogue; and it was from such a desk that Our Lord read the law in the synagogue of Nazareth.

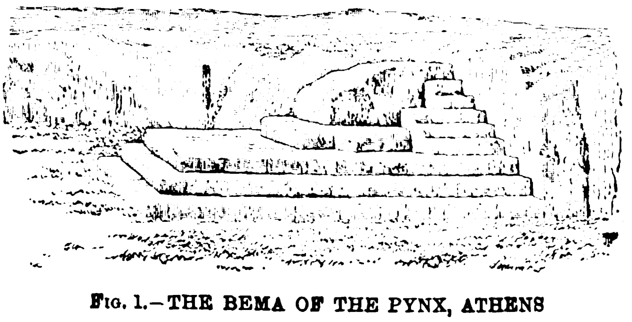


Fig. 1.—THE BEMA OF THE PNYX, ATHENS

These scriptural precedents may seem quite enough to have suggested the liturgical use of the ambone, but its form can be traced with more probability to such secular sources as the Bema in the Pnyx at Athens, and the Rostra in the Forum at Rome. These, though very dissimilar in appearance, were both intended for the same purpose, to raise the speaker well above an assembly to which he had to address himself. Of the ruined Bema "facing the sea" we have remaining the nearly isolated rock and steps to the platform on which the orators stood; and of the Rostra Vetera we have views in the bas-reliefs of the Arch of Constantine and of the sculptured Plutei, while of the Rostra Julia very considerable remains are left standing. These monuments of antiquity were still existing, and not, perhaps, wholly fallen into desuetude, when the earliest ambones were erected in the churches; and to them, as well as to the traditional forms of those described in Scripture history, we must look as forming the models on which the ambones were based.

As we shall have to refer presently to the Classic examples for comparison with the later works, it is necessary to give some description of them to understand the character of the structures which were before the eyes of the first ambone builders. The Bema in its ruined condition (fig. 1) shows a large squared mass of rock, some 10 feet high, projecting from the wall or natural cliff bounding the Pnyx, resting on a flight of three steps and approached by a narrow flight of stairs on either side adjoining the cliff. As the Pnyx was planned in the form of a theatre and the Bema was placed against the centre of the diameter, the position of the speaker in relation to his audience was similar to that adopted later in the Greek churches for the reader or preacher in the ambone.

The Roman Rostra, of which there were at least two in the Forum, the Rostra Vetera and the Rostra Julia, were of a more elaborate character than the Bema, as they seem to have been parapetted platforms, giving the speaker room to move about and turn towards various points when addressing the people; and we know from the bas-reliefs that he was accompanied by others within the enclosure. The structure was of curved form on plan, as shown on the coin of Palicanus preserved in the British Museum, raised on arches and approached by a flight of steps at either end. The representation on this coin may refer to the Rostra Vetera, as the excavations made in recent years round the Rostra Julia show some variation from these details (fig. 2).

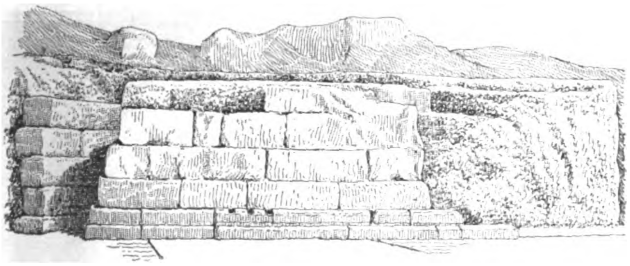


FIG. 2.—THE ROSTRA JULIA IN THE FORUM ROMANUM.

Before the epoch-marking date of Justinian's great ambone in Santa Sophia at Constantinople, the first one of which we preserve any detailed and definite account, this important accessory to the ceremonial services of the Church had doubtless become necessary and usual. The state of things which existed in Rome during the period when the Church had to seek refuge in the catacombs and ecclesiastical buildings were unnecessary, was unknown in the East or in North Africa; and in them may be found ruins of Christian churches erected before the advent of Constantine. There seems to be no doubt that among the Copts of Egypt a liturgical form of worship sprang up at a very early period; and among them and their churches may, perhaps, be found the germ of the structure in which originated equally the Christian ambone and the Moslem minbar.

During the time which elapsed from Justinian to Constantine the use of the ambone spread gradually from the East to the West, although it was not until quite the end of the period that it appears first to have been introduced into Rome. Its liturgical use had been well established before the close of the fourth century, for we find that it was considered a remarkable thing that St. John Chrysostom should use it as a place from which to preach. Its use had spread into Gaul at an early date, and towards the end of the fifth century St. Perpetuus set up one in the church he erected in honour of St. Martin at Tours; and during the next two centuries we know that St. Eloy constructed one at St. Denis for King Dagobert, and Chrodigand, Bishop of Metz, made another, decorated with gold and silver. Of the last two, however, we have no detailed account; and although the ambone of St. Apollinare Nuovo, Ravenna, and some portions of those of Grado, Torcello, and Murano may belong to the fifth century, it is with the two erected by Justinian in Santa Sophia, as described to us by Paul the Silentiary, and that of old St. Peter's, Rome, imitated from one of them, of which some fragments still remain in the *Sagre Grotte Vaticane*, that we have to make our starting point.

It is necessary to describe the liturgical uses the ambones were intended to fulfil before we deal with their form and construction. In the Primitive Church the small size of the buildings, whether under or above ground, rendered any considerable elevation of one part above another difficult; and, having regard to the fewness of the congregation, unnecessary, since all were well able from the same level to see and hear all that went on; and although from the first special parts of the area were assigned to the clergy and people there was little or no division between them. Thus, in the well-known subterranean church in the cemetery of St. Agnes, Rome, although the presbytery, with the episcopal chair and seats for the clergy surrounding the space left for the altar was well defined, the whole chamber had its floor practically level throughout. When, however, churches began to be built above ground in Rome, or in other places where they were already raising edifices for Christian worship of considerable size, some modification of the early arrangement became necessitated by the altered circumstances. And though in the evolution of the church plan slight variations occurred in various countries, particularly as between the East and the West, one broad arrangement was common to all. The extreme end of the building, the east end generally but not invariably, contained the presbytery arranged on an elevated platform, and within this space were celebrated the Divine Mysteries; before it, but on a lower level, were placed the seats for the singers, enclosed within a low screen, and beyond them was the congregation of men and women, catechumens, and others, separated by various arrangements, but generally on one level. To them certain portions of the services were especially addressed, such as the lectionaries, homilies, and sermons, and it became necessary that the speaker or reader should be raised sufficiently high to be seen and heard of all; and it was for this purpose the first ambones were erected. Of these lectionaries there were three: the Prophets, the Epistles, and the Gospels; and the reading of the Gospel was, from the first, attended with a special reverence, and early became an imposing ceremonial. Thus we find, from an Ordo Romanus of 492, that before the close of the fifth century many persons had come to take part in it, as the deacon, who was the reader, at least two sub-deacons with censers, and two acolytes carrying the Gospel lights; and where, under rare circumstances, the ambone has continued in use to the present day, as in San Ambrogio in Milan, these persons are still engaged in the ceremony. Besides the uses already mentioned for which the ambone was employed, others grew up in course of time; certain psalms sung from its steps acquired from that circumstance the name of the graduals, and important ceremonies in connection with blessing the Paschal Candle at Eastertide and the singing of that remarkable composition known as the Exultet were performed in the ambone; and thus it was that the association of the candlestick with the ambone was brought about and eventually produced so many pleasing architectural groups, such as those to be found in the Roman and South Italian churches. It was also customary to make special announcements and sometimes to perform civil ceremonies in the ambone. Pope Pelagius purged himself from a charge of heresy in the ambone, and Charlemagne ordered the manumission of slaves to be proclaimed from it; it was used for

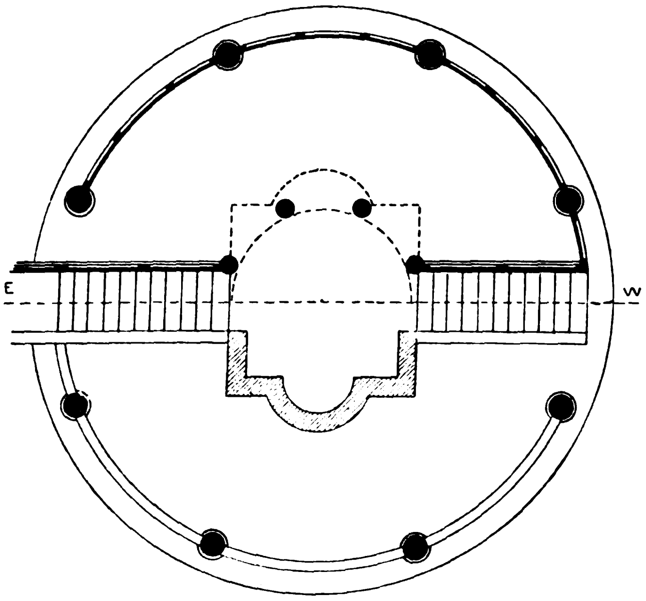


FIG. 3—SKETCH PLAN OF JUSTINIAN'S SECOND AMBONE IN SANTA SOPHIA. (After LETHABY.)

the publication of papal edicts, and the Doge of Venice was enthroned in it after his election.

Until the twelfth century, when the ambone became divided or duplicated, its invariable position, with a possible exception in some Coptic churches, was the centre of the nave immediately before the entrance to the choir, with a flight of steps leading therefrom to the ambone, by which the deacon ascended to read the Gospel, and another flight on the other side and towards the congregation, by which he afterwards descended. This is the position described by Germanus, Patriarch of Constantinople from 715 to 740, as the correct one, "Ambo coram porta tribunalis statuitur," as well as by Simeon of Thessalonica; and this is the position in which the great ambone of Justinian was placed in Santa Sophia. Nor was this position peculiar to the East, for we are informed that when St. Perpetuus built his great church of St. Martin at Tours, towards the end of the fifth century, he formed a choir entered by three doors, and separated from the nave by an ambone. All the existing ambones constructed at this early period, such as those of Ravenna, although now relegated to one side or the other of the church, show by the ornamentation of their sides and the ancient arrangement for their staircases that they were intended for and originally occupied a central position. If, as has been assumed, the great ambone of St. Peter's, Rome, contemporary with that of Santa Sophia, always occupied the sideward position in the nave in which it stood when it was destroyed with the old church, though this is extremely doubtful, it must be remembered that the Confessionary of St. Peter, itself never quite in the centre, may have been considered of too great an importance to have had the view of it blocked by the ambone.

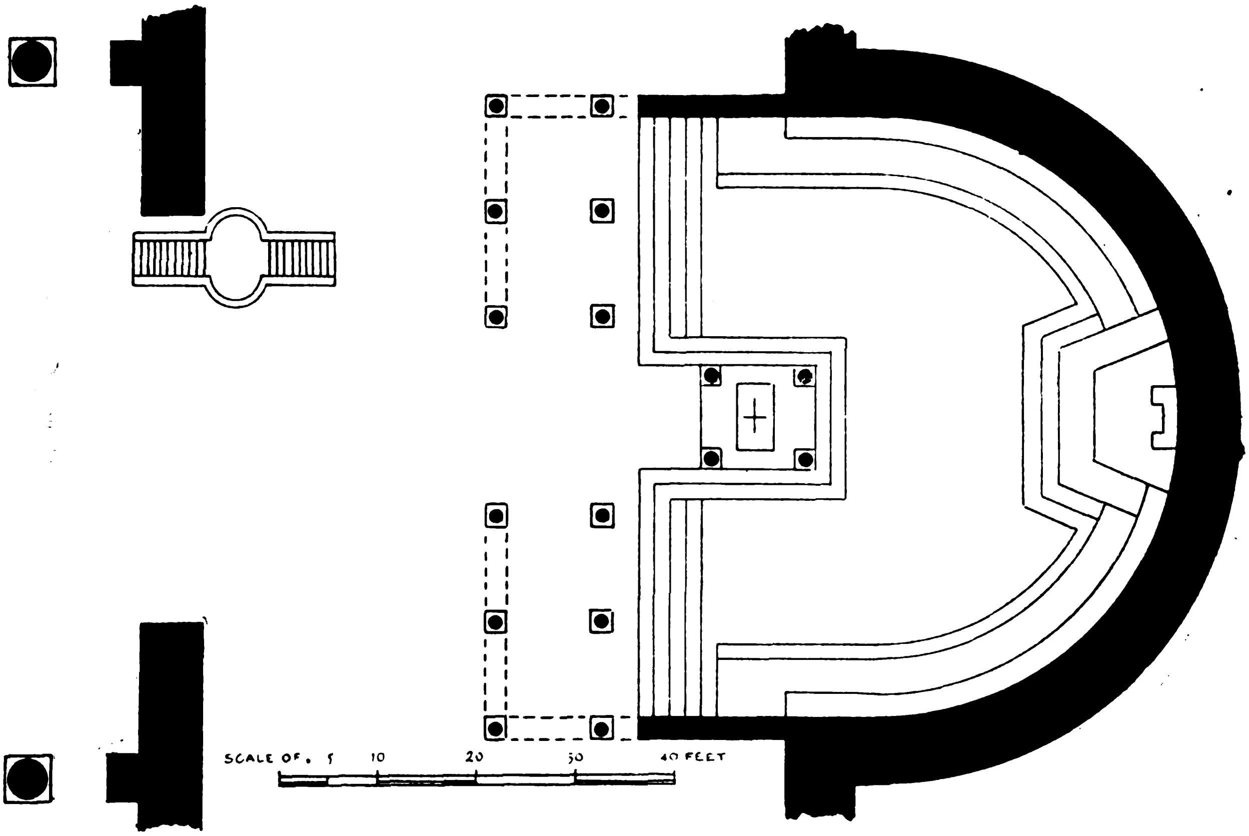


Fig. 4.—PLAN OF PRESBYTERY SHOWING POSITION OF AMBONE IN OLD BASILICA OF S. PIETRO IN VATICANO, ROME.

Having now dealt with the origin and use of these earliest ambones and the position they occupied in the churches, we now proceed to a more detailed account of their appearance. Justinian erected two ambones in his church of Santa Sophia, for the first was destroyed by the fall of the dome in consequence of an earthquake on May 7, 558; and this one is chiefly interesting to us because it was the one seen and perhaps used by Pope Pelagius during his sojourn in the East, and it doubtless formed the model of the one he erected in St. Peter's, Rome, on his return. As we have plans of the Vatican ambone, taken previous to its destruction, we are able to conclude that there was no radical difference between the first of Justinian's ambones and the second, of which we have so full an account in the work of Paul the Silentiary. The general form of these three ambones became the type on which were modelled those of the next five centuries. It probably was that of the earlier one which stood in Constantine's church from which St. John Chrysostom preached, destroyed in 532; and, if so, we can see that this traditional plan was, with some modifications, based on that of the Rostra Julia of the Roman Forum.

This second ambone of Justinian's consisted of a square platform enclosed within parapets having on each side semicircular projections, and raised to some height above the floor of the nave on eight columns. Access to it was gained on the east and west sides by flights of steps, also enclosed by parapets; and all this work appears to have been executed in white marble, though probably the shafts of the columns were in coloured marbles or porphyry (fig. 3). Over the pulpit was raised a dome, as at Venice and Grado, but revetted with plates of gold set with precious stones, and surmounted by a cross of gold. This ambone was placed under the arch of the great eastern apse, and immediately before the Bema, and seems to have remained in all its magnificence until the Fourth Crusade and sack of Constantinople by the Venetians and Franks, when, among other works of destruction, they tore down the gold and jewels from the dome of the ambone, though whether they carried off the marbles for St. Mark's, as according to Venetian legend they did, cannot now be determined. If this was not so, however, it is probable that it fell into desuetude, and was destroyed by the Greeks themselves, since the second sack of the church by the Turks under Mohamet II. in 1453 was much less sweeping than that perpetrated by their Christian predecessors; and such an object as an ambone could have been converted into a minbar, such as forms so remarkable a feature in all the mosques of Constantinople to this day. Indeed, so little damage did these un-Christian conquerors do to Santa Sophia that, if the story be true, the great candles now standing on each side of the Mirab, which are still occasionally lighted, are the Paschal candles left by the Greeks; but as, according to the Moslem legend, when they are burned out Constantinople will again change hands, they are now but charily used.

Pelagius I. (555-560) soon after his return to Rome for his election seems to have erected the first ambone in St. Peter's more or less in imitation of the one he had seen and used in Constantinople. From the drawings we have remaining of it by Ciampini and others it appears to have been of a circular form, or, rather, of two semicircular balconies on each side of a platform reached by the usual flights of stairs on the east and west sides. It was destroyed in the middle of the fifteenth century, when the rebuilding of the choir was commenced, and the only remains of it left are a cross of Greek form in mosaic and porphyry, with which it was adorned. The inscription which it bore we have already quoted. Exactly where this ambone was first placed in the basilica we cannot now say, for when the old scola cantorum was removed, no doubt to give better access to the Confession, the ambone was probably shifted to the position it stood in, on the southern side of the Arch of Triumph, at the time of its destruction (fig. 4).

We must now turn to that important group of ambones erected under Greek influence at Ravenna, which are the most ancient examples left to us, although they have been much knocked about and shifted from their original positions. Of these, according to Clausse in his "Les Marbriers Romains," that of St. Apollinare Nuovo may date from the fifth century, and, if so, it must be older than those we have just described. It is of a square form with curved projecting balconies on each side, and originally stood on four columns and had the soffite of the pulpit worked into a richly ornamented circular panel; but when it was denuded of its stairs and shifted to the south side of the nave the frustum of an ancient marble column was placed to support it in the middle (fig. 5).

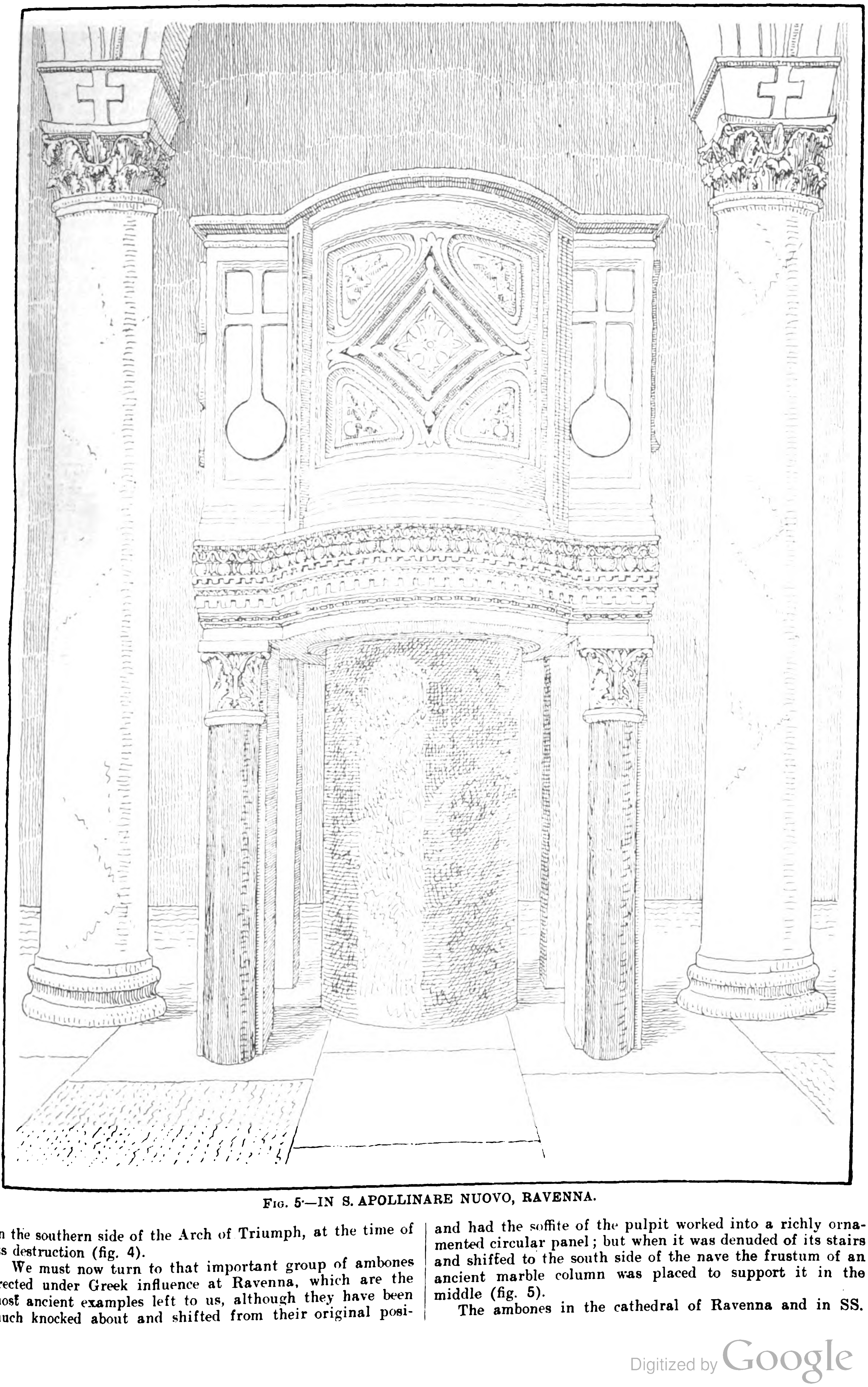


FIG. 5—IN S. APOLLINARE NUOVO, RAVENNA.

The ambones in the cathedral of Ravenna and in SS.

Giovanni e Paolo, as well as a third one now in a private collection, are of the same plan as the last, but are all covered with a reticulation in low relief, the squares of which contain profiled figures of birds, beasts, and fishes, and are no doubt of one date. Round the upper margin of the one in the Duomo runs the inscription: SERVS . XPI . AGNELLVS . HVNC . PYRGVM . FECIT. As Agnellus was bishop from 553 to 568, it must have been erected during that period, and was therefore contemporary with the ambones of Santa Sophia and St. Peter's (fig. 6).

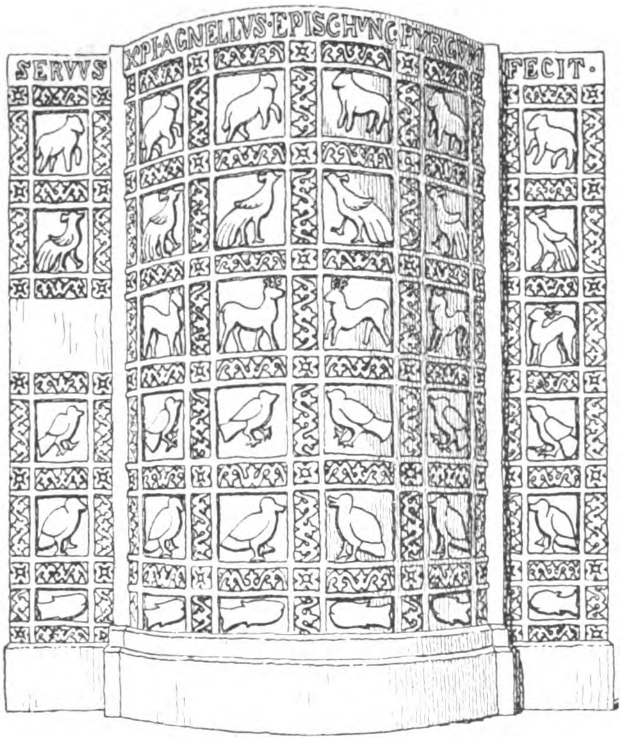


Fig. 6.—IN THE DUOMO, RAVENNA.

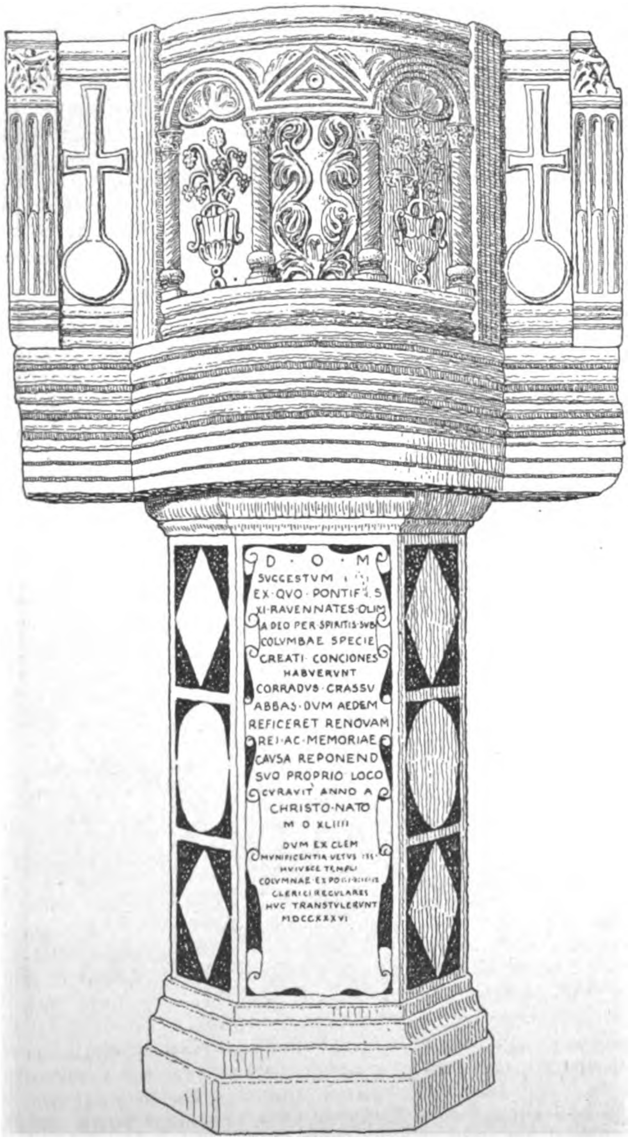


Fig 7.—IN S. SPIRITO, RAVENNA.

The ambone of Santo Spirito, Ravenna (fig. 7), is very similar to St. Apollinare, except in the carving of the panels, which indicates a slightly later date; while another in the church of Sant' Agatha, which has its pulpit formed of the hollowed frustum of an inverted fluted column, with its base acting as a cornice, is of an early though uncertain date. In connection with this group must be mentioned the ambone of St. Donato, Murano, the pulpit of which is so like that of St. Apollinare Nuovo that it must belong to the same period.

At Salonica are considerable remains of an ambone of a very abnormal type which at some time has been divided into two parts, each serving as an ambone in a separate church. From the extensive use of a rude sort of figure sculpture with which it is covered, it may be considered to be of a later date than the Ravenna examples, and to have suffered its partial destruction during the troubles caused by the iconoclasts. On plan it is an oblong with one semicircular end containing the two staircases enclosed by a high ramped wall, and at the square end in each angle was a space for the reader. How this peculiar shaped ambone was originally placed in the church it is now impossible to say; but it is quite clear that the reader had to ascend from and descend to the same point in a manner quite contrary to the usage of the period.

THE LONDON BUILDING ACTS.

57 and 58 Vict. Chap. ccxiii. (1894). 61 and 62 Vict. Chap. cxxxvii. (1898). 5 Edw. 7 Chap. ccix. (1905). 9 Edw. 7 Chap. cxxx. (1909).

The Tribunal of Appeal.

The Tribunal of Appeal constituted under the London Building Act, 1894, has made, and the Lord Chancellor has approved of, new regulations as to the procedure to be followed in cases of appeal to the Tribunal, the time and notice of appeal, and the fees to be paid by appellants and other parties (in substitution for the regulations of February 21, 1895).

These new regulations come into force as from April 23.

The Lodging of Appeals.

1. Notice of appeal shall be addressed to the Clerk of the Tribunal, and shall be lodged and a fee thereon paid to him at the Office of the Tribunal, No. 13 Great George Street, Westminster, S.W., within the period (if any) prescribed by the Act or Acts under which the appeal is made and where no period is so prescribed, within one calendar month after notice of the act or matter the subject of an appeal has been given to or served on the appellant.

Note.—All notices to be given to the Tribunal as well as all documents to be lodged (other than plans or drawings) in pursuance of these regulations must be on foolscap paper and entitled in the matter the subject of the appeal and the statute or statutes relating thereto. All notices prescribed by these regulations must be in writing.

Notices of Appeal.

2. The appellant shall within the time limited for giving notice of appeal give notice of such appeal to the Clerk of the London County Council, the District Surveyor, or other authority against whose act the appeal is made.

3. The appellant shall also within the time above limited in cases where the appellant is not the original applicant give notice to such original applicant of such appeal.

4. The London County Council, the District Surveyor, or other authority to whom such original application was made, shall furnish to the appellant on request a copy of such application (other than plans accompanying or forming part of the same), together with the name and address of the original applicant, and of the names and addresses of all persons to whom notices under the original application were given.

5. In case of an appeal under any of the sections of the London Building Act, 1894, in the Schedule to these

Regulations mentioned, the appellant (in addition to the notice to the London County Council and others under Regulations 2 and 3 hereof) shall give notice of such appeal within seven days from the date of his notice of appeal to the respective authorities and persons mentioned opposite each section in the schedule hereto under which the appeal is made, and when giving the notice provided for by this regulation shall supply the said respective authorities and persons with a copy of Regulation 9.

Documents to be Lodged with the Tribunal.

6. The appellant shall deposit with the Clerk of the Tribunal within seven days of the date of notice of appeal copies of the original application (if any) and of the decision, determination, certificate, refusal, consent, requirement, regulation, condition, grant, or other act or matter the subject of an appeal with copies in duplicate on tracing linen or sunprints or photographic reproductions on stout paper of all necessary plans or drawings relating thereto.

7. The documents referred to in Regulation 6 shall be supplemented by a short statement of the facts which shall specify the Act, section and sub-section under which the appeal is made, and shall set out the grounds of the appeal together with the name and address of the original applicant (if any) as well as the names and addresses of all persons to whom notice of appeal is to be given under Regulation 2 hereof.

Extension of Time and Amendments.

8. The Tribunal may from time to time extend the time for compliance with the requirements of these regulations (other than the time limited for lodging appeals under Regulation 1) and allow all necessary amendments, including amendments in the notices and documents prescribed by these regulations, upon such terms as to the fees to be paid to the Tribunal and as to costs and as to rights of parties not before the Tribunal, and as to adjournment of the proceedings or otherwise as the Tribunal may order.

Procedure for Hearing Appeals.

9. After an appeal has been lodged the earliest convenient appointment shall be arranged for the hearing of the appeal, and notice by letter of such appointment shall be communicated to the parties to the appeal and to the persons to whom notice of appeal is to be given under Regulations 2 and 3, and to such of the persons as are entitled to notice of appeal under Regulation 5 as shall within seven days of the receipt by them of notice of appeal have requested in writing the Clerk of the Tribunal to give them notice of the hearing.

10. The Tribunal may hear an appeal at, or adjourn to, such place as they may from time to time deem most convenient, and may have any inspection or view which they may require for the better disposal of the case. They may also from time to time upon the application of any party to an appeal grant adjournments upon such terms as to the fees to be paid to the Tribunal and as to costs or otherwise as they may think proper.

11. The hearing of appeals shall be open to the public.

12. Any person entitled to appeal before the Tribunal may appear either in person or by counsel, solicitor, or agent, and the precedure at the hearing shall, subject to such variations as the Tribunal may think fit, be similar *mutatis mutandis* to that adopted on the trial of actions before a Judge of the High Court.

e.g. Preliminary objections, if any, to be heard and disposed of.

Appellant to state his case and call his witnesses.

Any other parties interested to be heard.

Respondent to state his case, call his witnesses, and sum up.

Appellant to reply.

Order of Tribunal

13. The decision of the Tribunal shall be embodied in an Order under the Seal of the Tribunal.

Notice of Order of Tribunal.

14. Notice of the Order of the Tribunal, together with an office copy of the Order, will be sent by registered letter to each of the parties to the appeal, but in cases where a party is represented by a solicitor or agent, then the notice will be sent in the above manner to the solicitor or agent.

Evidence and Production of Documents.

15. The parties to an appeal and all persons claiming through them respectively shall, subject to any legal objection, submit to be examined on oath or affirmation in relation to the matters the subject of the appeal, and shall, subject as aforesaid, disclose and produce before the Tribunal all books, deeds, papers, accounts, writings, plans, and documents within their possession or power respectively which may be required or called for, and do all other things which during the proceedings on or in connection with the appeal the Tribunal may require.

Attendance of Witnesses.

16. Any party to an appeal may by *subpœna ad testificandum* or *duces tecum* require the attendance of any witness at the hearing of an appeal. Such *subpœna* shall issue upon the *fiat* of a Master of the Supreme Court (King's Bench Division). Applications may be made *ex parte*. They shall be in writing headed in the matter, and shall be accompanied by a certificate signed by the Clerk of the Tribunal showing that:—

(i.) The applicant is a party to the appeal.

(ii.) The hearing fee for such appeal has been paid or a date has been fixed for the hearing.

Provided that no *subpœna* shall issue for the attendance of the Superintending Architect of Metropolitan Buildings, and when the London County Council is a party to the appeal, no *subpœna* shall issue for the attendance of any member of the Council without the certificate first obtained of the President of the Tribunal.

17. Witnesses summoned to attend before the Tribunal shall be bound to attend in pursuance of the summons, and shall be liable to process of contempt in like manner as witnesses are liable thereto in case of disobedience to any Order of the Supreme Court, or in case of default in attendance, in pursuance of any Order of the Court or of any writ of *subpœna ad testificandum*; and all persons swearing or affirming before the Tribunal shall be liable to all such penalties, punishments, and consequences for any wilful and corrupt false swearing or affirming contained therein as if the matters sworn or affirmed had been sworn and affirmed before any other persons by law authorised to administer oaths, to take affidavits, and to receive affirmations.

18. If any person duly summoned by *subpœna* to attend at the hearing of an appeal shall refuse to attend, or, if having attended, he shall refuse to be sworn or to answer any lawful question, a certificate of such refusal by the President of the Tribunal shall be transmitted by the Clerk of the Tribunal to the central office of the Supreme Court and there filed, and thereupon the party requiring the attendance of the witness may apply to a Judge of the Supreme Court *ex parte* or on notice for an order directing the witness to attend, or to be sworn, or to answer any question, as the case may be.

19. If any witness shall object to any question which may be put to him at the hearing of an appeal the question so put and the objection of the witness thereto shall be taken down by the Clerk of the Tribunal and transmitted by him to the central office of the Supreme Court to be there filed, and the validity of the objection shall be decided by a Judge of the Supreme Court.

20. In any case under the two last preceding rules a Judge of the Supreme Court shall have power to order the witness to pay any costs occasioned by his refusal or objection.

Taxation of Costs.

21. One of the taxing masters of the Supreme Court will, upon the request of the Tribunal signed by the President, tax the costs of and incidental to appeals before the Tribunal where costs are ordered by the Tribunal to be paid by any of the parties to such appeals, and such costs have not been fixed by the Tribunal.

22. The certificate of the taxing master shall be deposited by the person entitled thereto with the Clerk of the Tribunal, who will endorse and sign the original and the office copy of the Order of the Tribunal with the amount of the taxed costs so certified, and the office copy of the Order so endorsed and signed shall be sufficient proof in any Court of Law of the amount due for costs payable on the said Order of the Tribunal.

Case Stated.

23. Application by any party to an appeal to the Tribunal to state a case for the opinion of the High Court on any question of law involved in any appeal submitted to them shall be by notice addressed to the Clerk of the Tribunal at the office of the Tribunal. A copy of such notice shall be sent by the party requesting a case to the other party or parties to the appeal.

24. In case of any change in the constitution of the Tribunal, whether by death, retirement, or otherwise, after the order of the Tribunal is made in any appeal and before a case is stated, the remaining members of the Tribunal by whom the case was heard shall state the case.

Records.

25. The original Order of the Tribunal and all documents lodged in connection with any appeal and any other documents retained by the Tribunal shall remain deposited in the office of the Tribunal as records.

Inspection of Records.

26. The documents mentioned in Regulation 25 shall be open to inspection by any person on payment of the fee provided for by these regulations at the office of the Tribunal between the hours of 11 and 3 (Saturdays 11 to 1).

Office Copies of Records.

27. Office copies under the Seal of the Tribunal of Orders and other documents of record shall be admissible in evidence for all purposes of the statutes, and these regulations made thereunder to the same extent as the originals would be admissible. Any document purporting to be a copy and appearing to be sealed with the seal of the Tribunal shall, in the absence of evidence to the contrary, be deemed to be an office copy of the document of which it purports to be a copy, and shall be admissible in evidence without further proof.

Office copies of such Orders and other documents may, subject to the approval of the Tribunal, be supplied to persons other than parties to an appeal upon payment of the fees provided for by these regulations.

Copies other than Office Copies.

28. Copies other than office copies of Orders and other documents of record shall be supplied to any person on payment of the fee or fees provided for by these regulations.

Fees Payable to the Tribunal.

29. The fees to be paid to the Tribunal by appellants and others are as follows:—

Lodging appeal	£2	0	0
View	2	0	0
*Hearing, not exceeding five hours	5	0	0
Certificate of the clerk under any of these regulations	0	5	0
Transmission to the Central Office of the Supreme Court under Regulations 18 and 19	0	5	0
Certificate of the President of the Tribunal under Regulations 16 and 18	1	0	0
Order	2	0	0
Stating special case	2	0	0
Inspection of an Order	0	1	0
Inspection of file of proceedings	0	2	6
Copy of regulations of the Tribunal	0	1	0

Office copies, 6*d.* per folio. Plans, &c., according to work involved

Copies other than office copies. 4*d.* per folio. Plans, &c., according to work involved.

*In addition to the above hearing fee, an additional fee of £1 per hour shall be paid by the appellant for each hour or part of an hour occupied in the hearing over and above the first five hours.

All fees shall be payable in cash in advance, and in any case in which an appellant may have paid an amount in excess of the fees due, the party so paying shall be entitled to the return of any amount so paid in excess, by the Comptroller of the London County Council, upon the certificate in writing of the President of the Tribunal endorsed upon a form provided for that purpose.

SCHEDULE

(*see Regulation* 5).

Section of London Building Act, 1894.	Subject of Appeal.	Authorities and Persons to whom Notice to be given.
5 (8)	The Superintending Architect's determination as to the level of the ground.	The Superintending Architect. The District Surveyor.
13 (3)	The Council's determination that the prescribed distance shall be greater than 20 feet from the centre of the roadway.	The Local Authority.
13 (4)	The Council's consent as to the erection, &c., of any building, &c., at a distance less than the prescribed distance from the centre of the roadway.	The Local Authority. The Owners and Occupiers of the nearest building on each side of the proposed building.
19	The refusal or conditional grant of the Council's sanction to the laying out of streets, &c., under Part II. of this Act or any condition imposed by the Council.	The Local Authority.
19	The refusal by a District Surveyor of his Certificate to plans of a building or structure to be altered or re-erected under Section 13.	The District Surveyor. The Local Authority.
25	The Certificate of the Superintending Architect as to the general line of buildings.	The Superintending Architect. The Local Authority and all other persons entitled under Section 24 to notice of the Superintending Architect's Certificate.
29	The Certificate of the Superintending Architect determining in what street or streets a building or structure is situate.	The Superintending Architect. The Local Authority and all other persons entitled under Section 24 to notice of the Superintending Architect's Certificate.
43 (*i*) & (*iii*)	The decision of the Council or a District Surveyor under this Section.	The London County Council or District Surveyor as the case may be.
44	The Council's determination in cases where a person desires to re-arrange a cleared area.	The Local Authority.
46	The Superintending Architect's Certificate determining the front and rear of a building.	The Superintending Architect.
48 (2*b*) & (4)	The Council's refusal to allow a building to be erected to a greater height than the prescribed height.	The Owner or Lessee of any building or land within 100 yards of the building to which the refusal relates. The notice in this case to be given in such manner as the Council may direct.
78	The District Surveyor's requirements respecting the construction of public buildings.	The District Surveyor.
79	The District Surveyor's requirements respecting the conversion of any building in this Section mentioned into a public building.	The District Surveyor.
122	The Council's refusal to permit, or any regulation of the Council, or decision of their Engineer, or requirement or condition made by him, as to the erection or the adaptation for use of a building as a dwelling-house on low-lying land.	The Council's Engineer. The Local Authority.

MANCHESTER SOCIETY OF ARCHITECTS.

THE annual general meeting of members of the above Society was held on April 29.

According to the fiftieth annual report of the Council, the aggregate membership is 272—viz., 121 Fellows, 113 Associates, and 38 students, as against 281 at the date of the last report.

Registration.

Consideration has been given by the Council to the much-debated subject of the registration of architects; the interim report of the R.I.B.A. Registration Committee was under review, and the Council adopted a resolution to the effect that, in its opinion, a Registration Bill is desirable, but in view of the difficulties surrounding the matter it is better not to proceed at present with the proposed Registration Bill, but to endeavour to obtain a new charter on the lines laid down in the above-mentioned interim report, and added that it is desirable to submit the draft Registration Bill to the members of the R.I.B.A. so that it may be settled ready for submission to Parliament when the R.I.B.A Council shall think fit.

Official Architecture.

A committee of the R.I.B.A. has been appointed to consider the subject of public officials designing buildings erected out of public funds, and at the request of that committee a very full schedule of public buildings so erected during the past few years in this Society's province was compiled, showing the class of building erected in various towns, the names of the designers, and, where possible, their qualifications. A copy of this schedule has been placed in the Society's library. The Council, when submitting the schedule, expressed the opinion that in the interests of administrative bodies and the public, and in the higher interests of the art of architecture, public bodies, whether Government, Provincial or Municipal, should entrust important architectural works only to professionally qualified architects, either by competition or otherwise.

County Membership of A.A.

The Architectural Association of London has proposed a scheme for admitting to country membership architects residing fifty miles or more from London, who are members of provincial professional societies. The Council recommends this proposal to the members of this Society.

Provincial Societies' Boundaries.

The question as to the exact demarcation of the boundaries of the provinces allotted by the R.I.B.A. to the allied societies is still under consideration. The boundary between the provinces allotted to this Society and the Liverpool Architectural Society has been mutually agreed upon.

Representation on Air Pollution Advisory Board.

On the invitation of the Manchester Corporation, Mr. Paul Ogden, F.R.I.B.A., was appointed the Society's representative on the Air Pollution Advisory Board.

Manchester Academy of Fine Arts.

A graceful compliment has been paid to the Society and the profession generally by the election of Mr. John Ely, F.R.I.B.A., as President of the Manchester Academy of Fine Arts.

School of Architecture.

Messrs. W. Orlando Jones and G. B. Howcroft were each awarded by the Manchester University a travelling scholarship (£50) and a graduate scholarship (£25), and the former has also been awarded a scholarship by the Glamorgan County Council. It is announced that by an agreement between the Manchester Education Committee and the University Publications Committee, the latter has undertaken to publish the first number of the Sketch Book. On the invitation of the Advisory Committee Messrs. F. B. Dunkerley, F.R.I.B.A., and F. P. Oakley, A.R.I.B.A., were appointed as visitors to the School of Architecture.

Society's Jubilee.

Members are reminded that the Society was founded on April 8, 1865, so that on April 8, 1915, the Society will have attained its jubilee, and the most suitable manner of celebrating this will be the subject of the next Council's consideration.

Education in Architecture Committee.

A new scheme of prizes which transfers much of the work formerly done by the committee to the School of Architecture has been inaugurated. The object is to bring the work of the School of Architecture and that of the Society into closer touch, the Professor of Architecture having felt that the continuity of the student's work was often interrupted by the student's competing for the Society's prizes. Under the new scheme the prizes are given for work done through the session in a regular sequence, and the committee feel that this is much more beneficial to the student's education. The prizes for measured drawings, sketches, and water-colours are still awarded by the Society, as most of this work is done in the vacations. There are also prizes for design for students who do not attend the School of Architecture. The committee have given most careful consideration to the scheme, and it is hoped that the change will result in material benefit to architectural education in Manchester. The students requested permission to use the club room as an architectural studio in the evenings. The attendance has been good, and the committee appreciate the enthusiasm the students have shown.

House List, 1914-15.

President, Mr. F. B. Dunkerley, F.R.I.B.A.; Vice-Presidents, Mr. F. P. Oakley, A.R.I.B.A., and Mr. J. B. Gass, F.R.I.B.A.; Hon. Secretary, Mr. Isaac Taylor, F.R.I.B.A.; Assistant Hon. Secretary, Mr. J. T. Halliday, A.R.I.B.A.; Members of Council, Messrs. John Brooke, John Ely, H. Q. Farmer, W. C. Hardisty, Edward Hewitt, P. D. Lodge, Paul Ogden, J. H. Sellers, J. H. Woodhouse, P. S. Worthington, J. H. Worthington, and W. Cecil Young.

THE EDINBURGH ARCHITECTURAL ASSOCIATION.

THE annual meeting of the Edinburgh Architectural Association was held in the Rooms, 117 George Street, Edinburgh, on the 29th ult, Mr. A. Lorne Campbell, F.R.I.B.A., president, in the chair. Mr. Campbell, in the course of an address reviewing the work of the session, referred to the question of a revised set of conditions of contract and mode of measurement. There appeared to be, he said, a deep-seated feud between the surveyors and the contractors in the West of Scotland, such as had not existed, as far as he was aware, in the East. The Glasgow schedule was the last word in slackness, amounting to practically a number of items of assumed quantities to which rates were attached, and involving a complete re-measurement of the work on the completion of the buildings. Many of the items were so loose in their definition that the contractors maintained that the pricing of a schedule was a mere gamble from beginning to end. He urged that the architects and surveyors combine and deal with the question, or complications would arise all over Scotland. Mr. Campbell also commented on the liberality of Sir Rowand Anderson, who had given £150 for the financing of two studentships for the special study of steel construction as applied to buildings, and who had supplied the funds for the collecting of a record of Scottish domestic architecture. The following office-bearers were appointed: President, Mr. T. Forbes Maclennan, A.R.I.B.A.; Vice-Presidents, Mr. John Wilson, F.R.I.B.A., and Mr. T. Aikman Swan, A.R.I.B.A.; Hon. Secretaries, Mr. James Kerr, 122 George Street, and Mr. P. M. Cunningham, 5 Queen Street; and Hon. Treasurer, Mr. W. G. Walker, C.A., 39 George Street.

Mr. W. Johnstone, writer, Glasgow, secretary and treasurer of the Faculty of Surveyors of Scotland, has addressed a letter to Mr. A. Lorne Campbell, F.R.I.B.A., ex-president, Edinburgh Architectural Association, stating that the West District Council of the Faculty of Surveyors of Scotland has instructed him to call attention to the following statements he is reported to have made at the above meeting:—

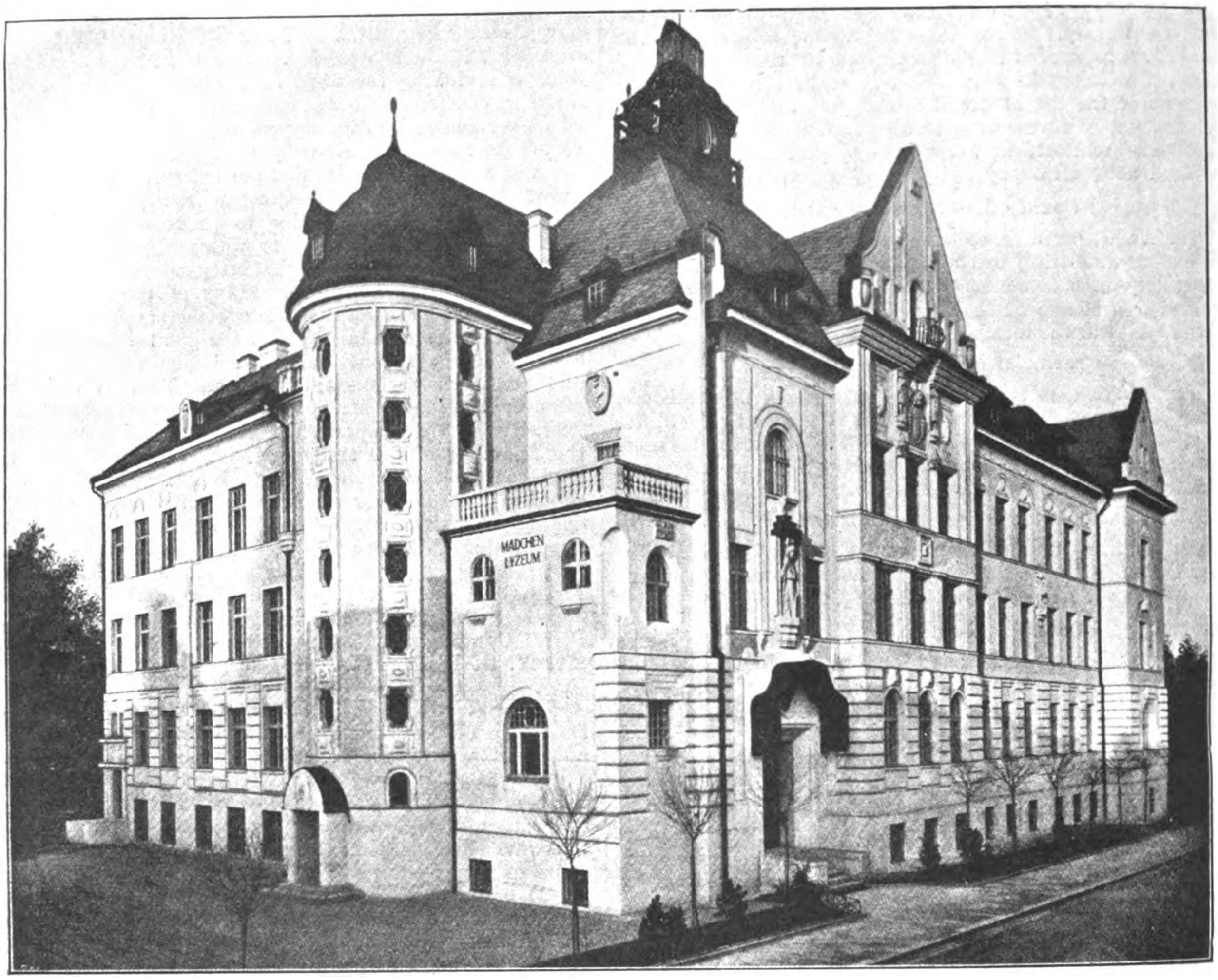
(1) "You stated that there appeared to be a deep-seated feud between the surveyors and the contractors of the West of Scotland. The Council cannot imagine on what grounds you found this statement. The members of the Faculty have always been on the best of terms with the various Contractors' Associations and with individual contractors. At the present time the Faculty is dealing with an intimation on behalf of the wrights that they are to insist on a new mode of measurement of their own. The intimation is now under the consideration of the Faculty and of the Glasgow Institute of Architects. The position of the surveyors and the architects in the matter is identical.

(2) "You are reported to have stated that the Glasgow schedule was the last word in slackness, amounting to practically a number of items of assumed quantities, &c. My Council can only assume that you have been led to make this charge through complete ignorance of the Glasgow mode of measurement and schedules. The mode of measurement provides for tenders being received on the footing of after-measurement, or no after-measurement, as the proprietor may prefer, but in either case the quantities are taken from the plans with equal carefulness, and where plans are given by the architect these schedules issued by Glasgow surveyors do not contain assumed quantities. There may be cases in which, in order to save time, the architect asks that schedules should be issued before the plans are completed, but that is entirely exceptional, and is beyond the control of the surveyors. So far from there being slackness, any surveyor or contractor who is familiar with Glasgow schedules will inform you that the main difference between them and other schedules is the extreme scrupulousness with which they enter into the details of quantities.

(3) "The juxtaposition of these two statements suggests that the Glasgow contractors object to after-measurement, and that they would prefer to have no after-measurement. If this is in your mind, it has to be pointed out that the suggestion is a completely erroneous one, as the contractors, wherever they have any say in the matter, insist on the after-measurement system, and there has never at any time been the slightest difference between the surveyors and contractors on this question.

(4) "You are reported to have stated that many of the items are so loose in their definition that the contractors claim that the pricing of schedules was a mere gamble. This statement is so far removed from the facts that the Council

MODERN EUROPEAN ARCHITECTURE.
AUSTRIA.



[From *Der Architekt.*

GIRLS' SCHOOL AT LINZ.—Herr JULIUS SCHULTE, Architect.

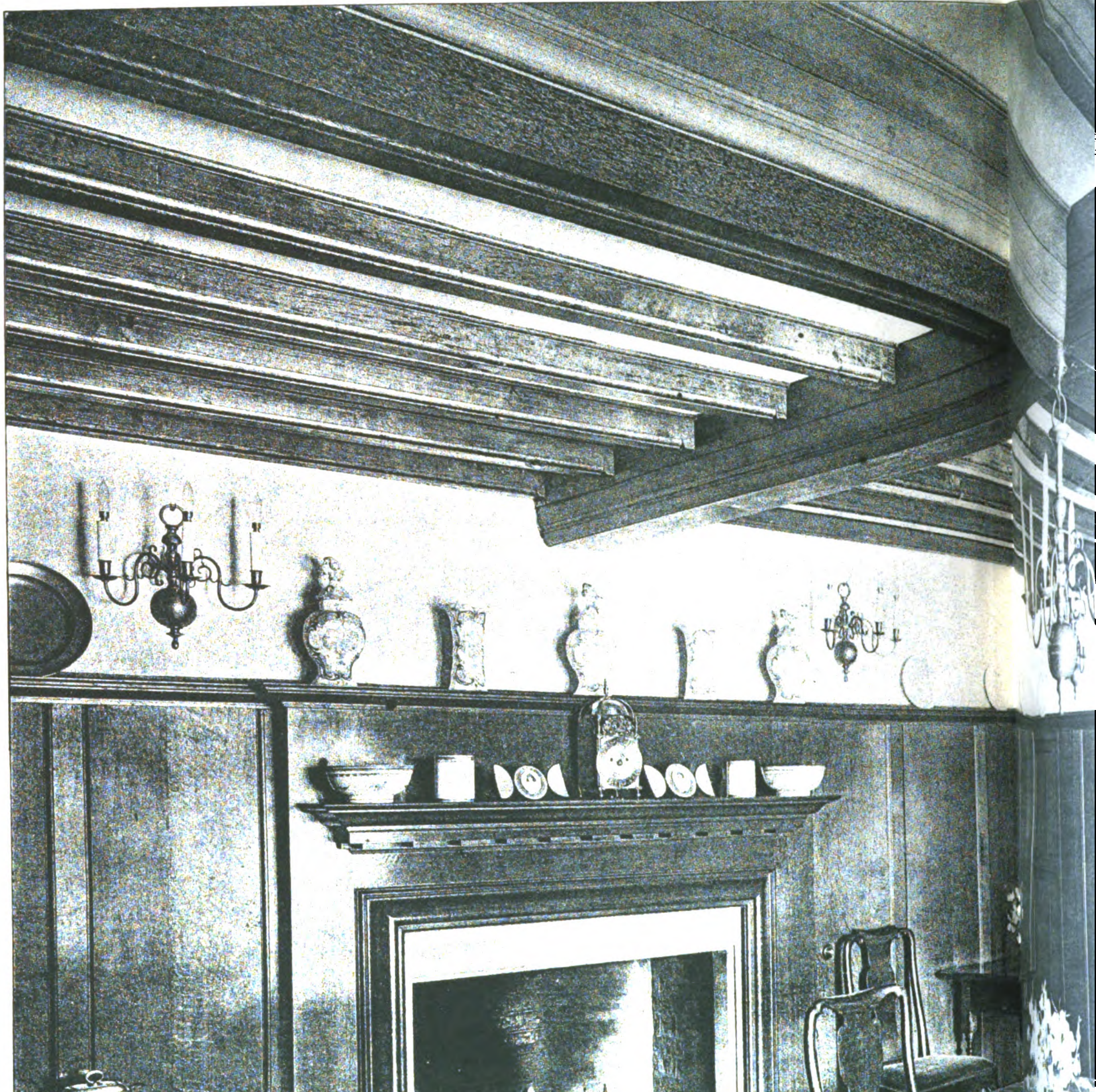
can only assume that you have been misinformed by someone who either knew nothing of the subject of which he was speaking or had some sinister purpose to serve. The items in the Glasgow mode of measurement are specially clearly defined. The effect of the schedule is exactly the opposite of what you state. So far from being a gamble, it is found that in a large number of cases the three lowest offerers on the schedules prepared by the Glasgow surveyors do not vary 1 per cent. in amount, whereas it is a matter of common knowledge that offers made on schedules prepared on other methods, such as for engineering works, vary from 20 to 50 times that extent.

"My Council cannot imagine that you have formed the deliberate intention of making unfounded statements to the detriment of members of a profession in friendly relationships with your own, and they accordingly greatly regret that it should be necessary for them to write as they now do."

A DECORATIVE ARTISTS' SKETCH CLUB.

ON Thursday of last week a preliminary meeting was held at the Arts Centre, Mortimer Street, W., for the purpose of considering a scheme for the organisation of a Sketch Club for those engaged in the Decorative and Kindred Arts. About ninety people were present. Mr. Arthur S. Jennings, Editor of *The Decorator*, took the chair.

Mr. Bertram Puckle, as being responsible for the suggestion, opened the proceedings with an account of his past experiences of a similar kind and with an explanation of the lines on which he proposed the club should run—if after discussion it was decided a real demand existed for such an Association among those engaged in the "trade" side of art. For a long time he had believed that amongst the hundreds of artists in London alone engaged in one branch or another of commercial art there should be a considerable number who would enjoy the advantages of an art society of their own to encourage individual expression outside the limitation of daily work. It had always seemed a sad thing to him that those who had acquired a mastery of the pencil or brush neglected to take advantage of the gifts which should compensate their toil by producing work for the very love of it. That was the sort of work it did everyone good to produce. To the argument that it is not necessary to join a sketch club in order to produce individual work, he would reply that it was in the nature of man to act collectively. As a rule, the artist is a bad starter without a special inducement. Furthermore, a human weakness is satisfied by co-operation, for there is an inborn desire to exhibit anything which has given pleasure to produce. Amongst the suggestions he would make, based on past experience, was the inadvisability of hampering the funds of a young Society with the expense of club premises; it would be quite easy to hire a suitable room in a suitable position as required. As an object lesson and a warning he would narrate the history of an art society with which he had been associated some years ago in a provincial city. Certain grandmotherly restrictions concerning draped models, prohibition of smoking, &c., having been issued at the Council Art School which he and others were attending, led a few of the bolder spirits to set up for themselves a sketch club unhampered by convention. An old cabinet maker's workshop on a top floor in a side street was rented from a publican who lived next door. The rent was certainly nominal, but there was a curious restriction, the inwardness of which was only apparent afterwards. They were not allowed to retain the key of the premises; it had to be called for and returned to the "pub" every day. The landlord let it get round that every time this was done a drink ought to be registered for the good of the house. Other minor difficulties were encountered. The first floor was let to a Mission Society, which devoted two nights a week to band practice, which



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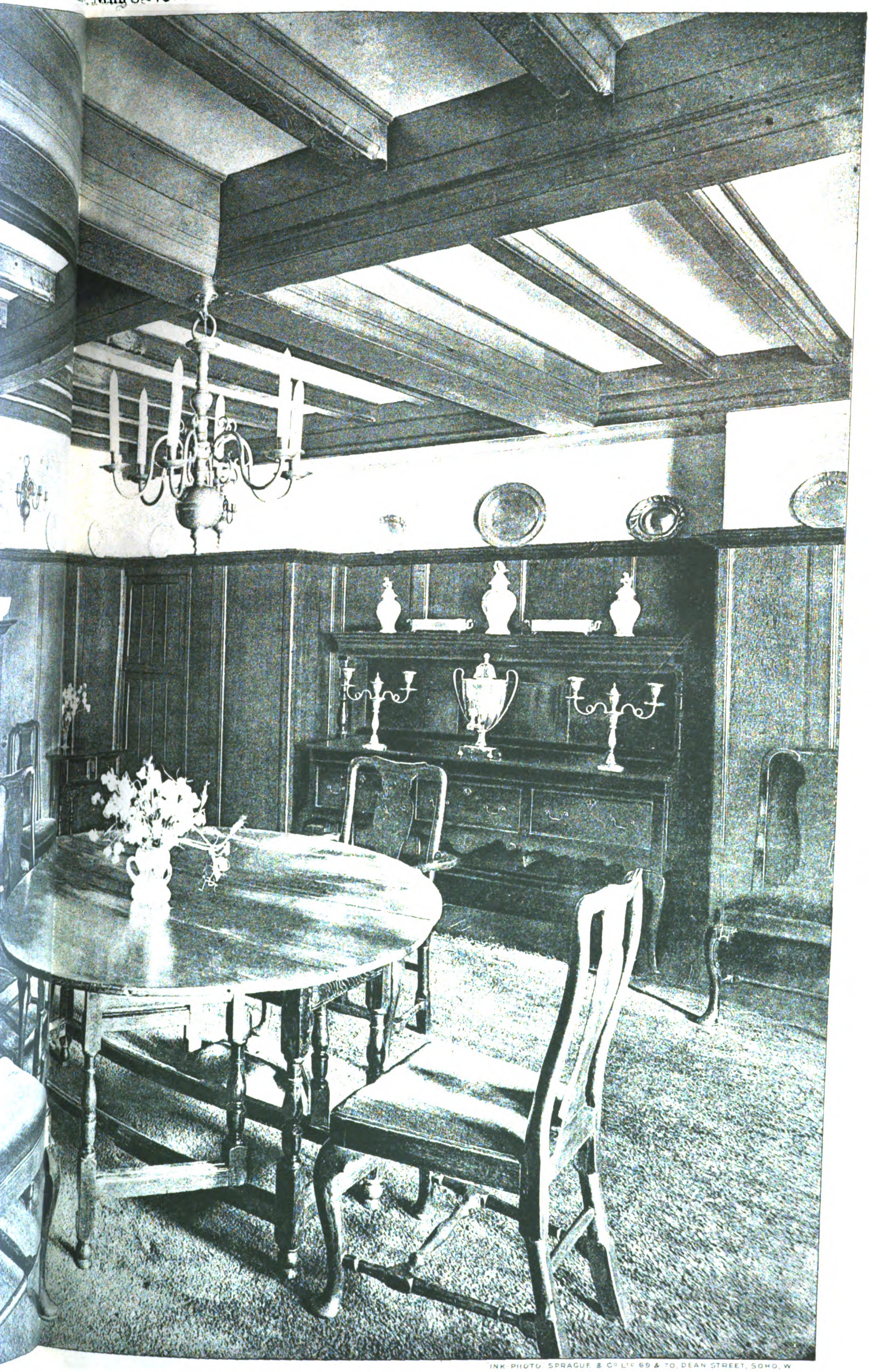

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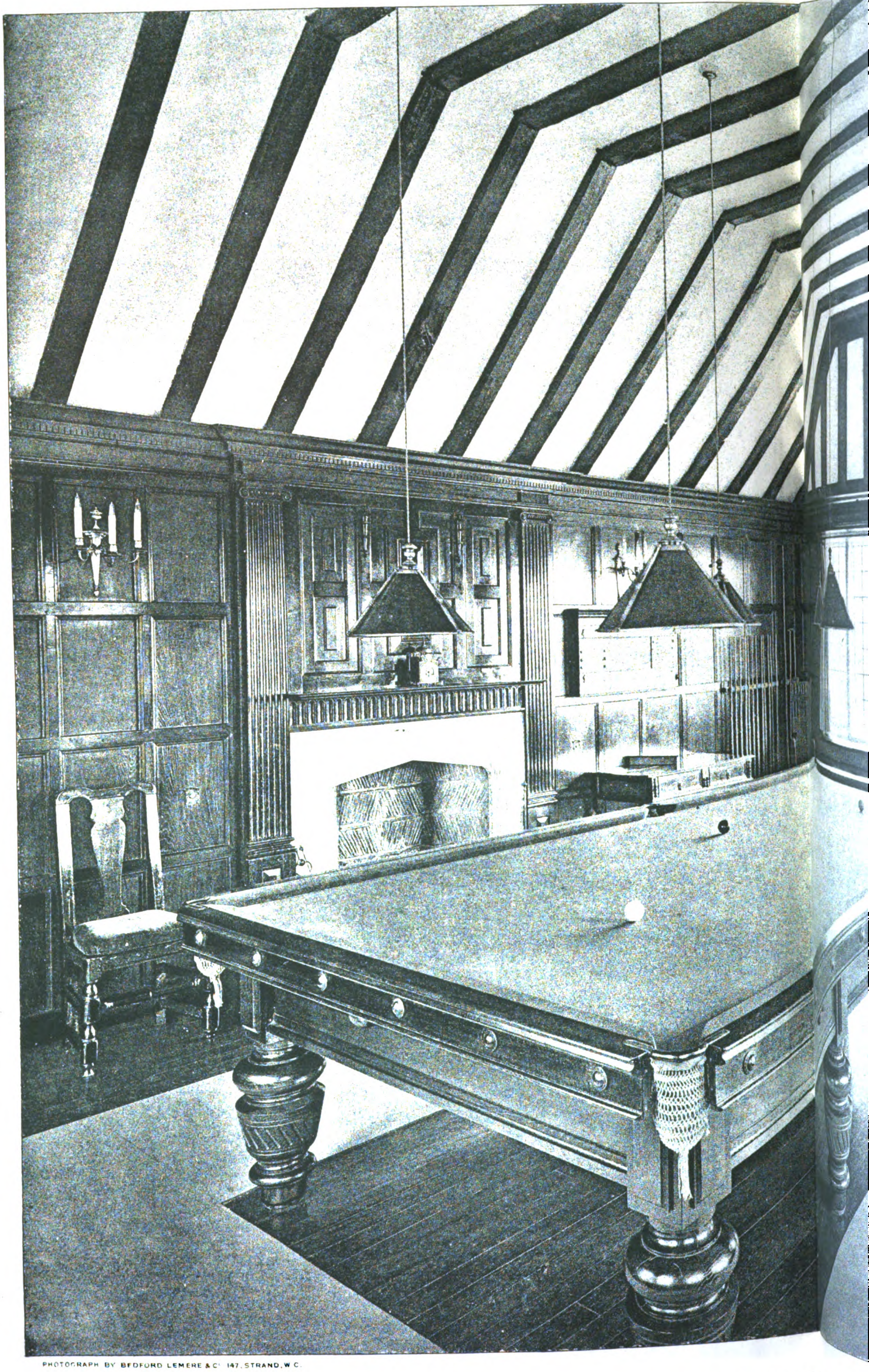

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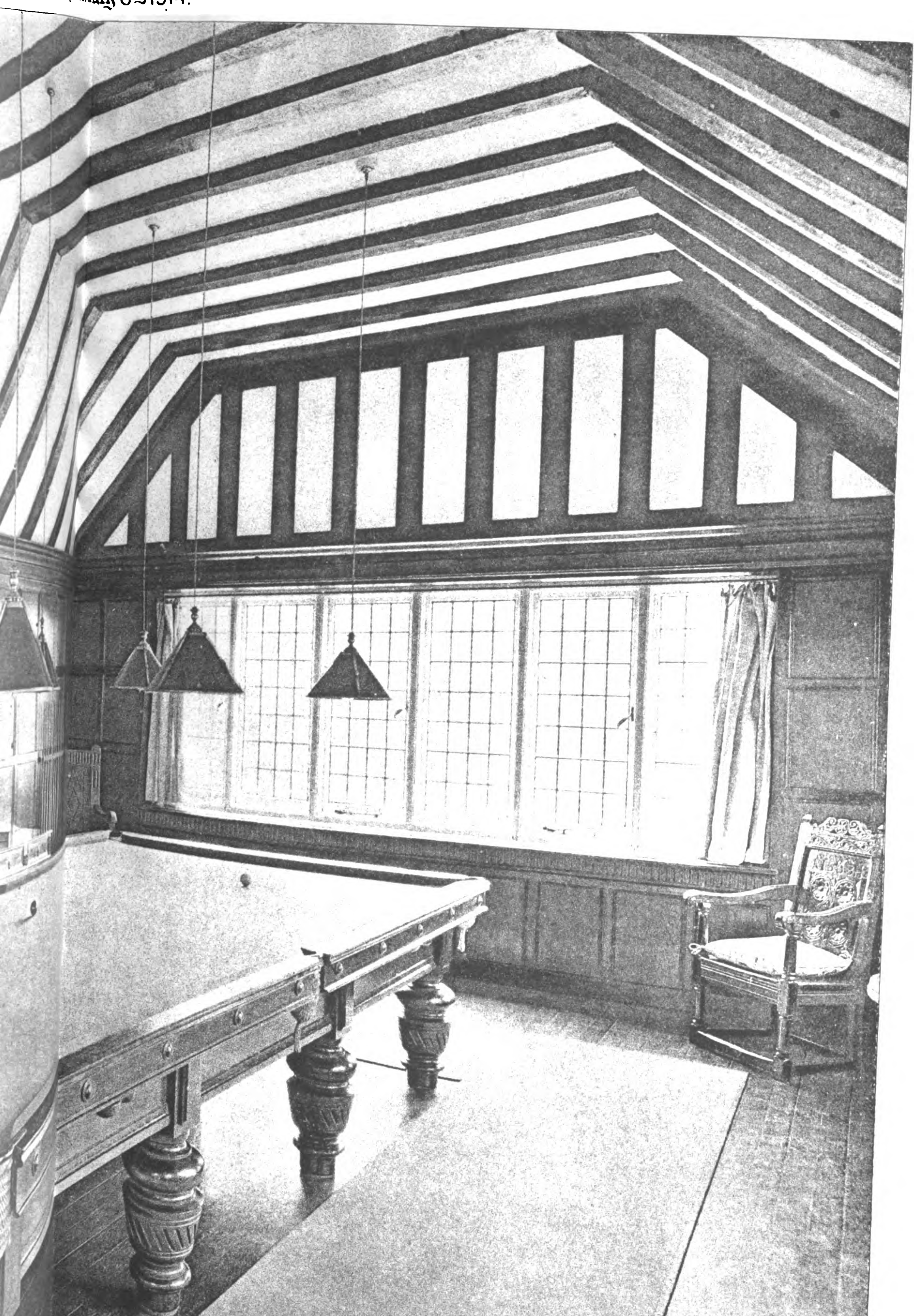

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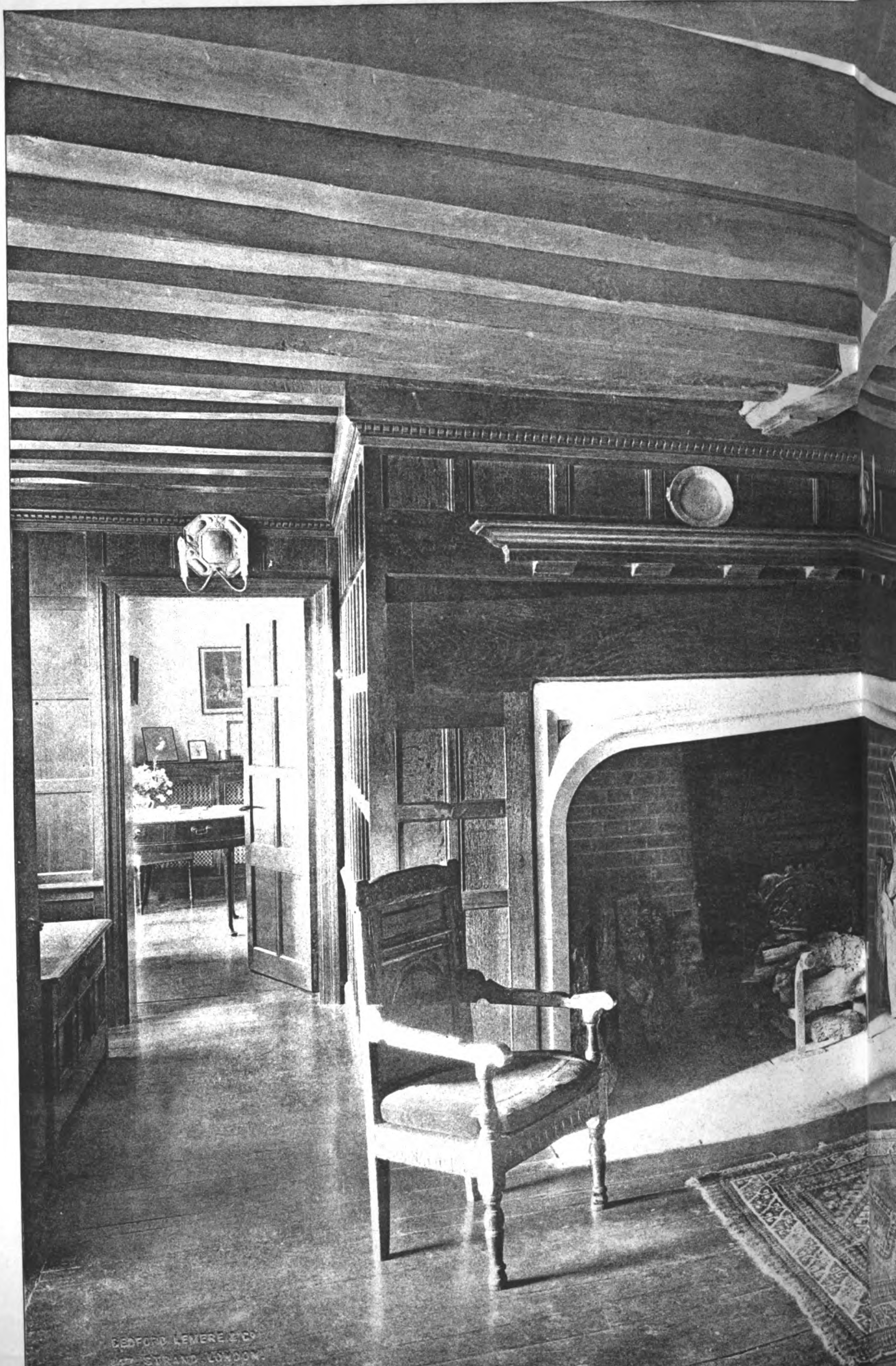
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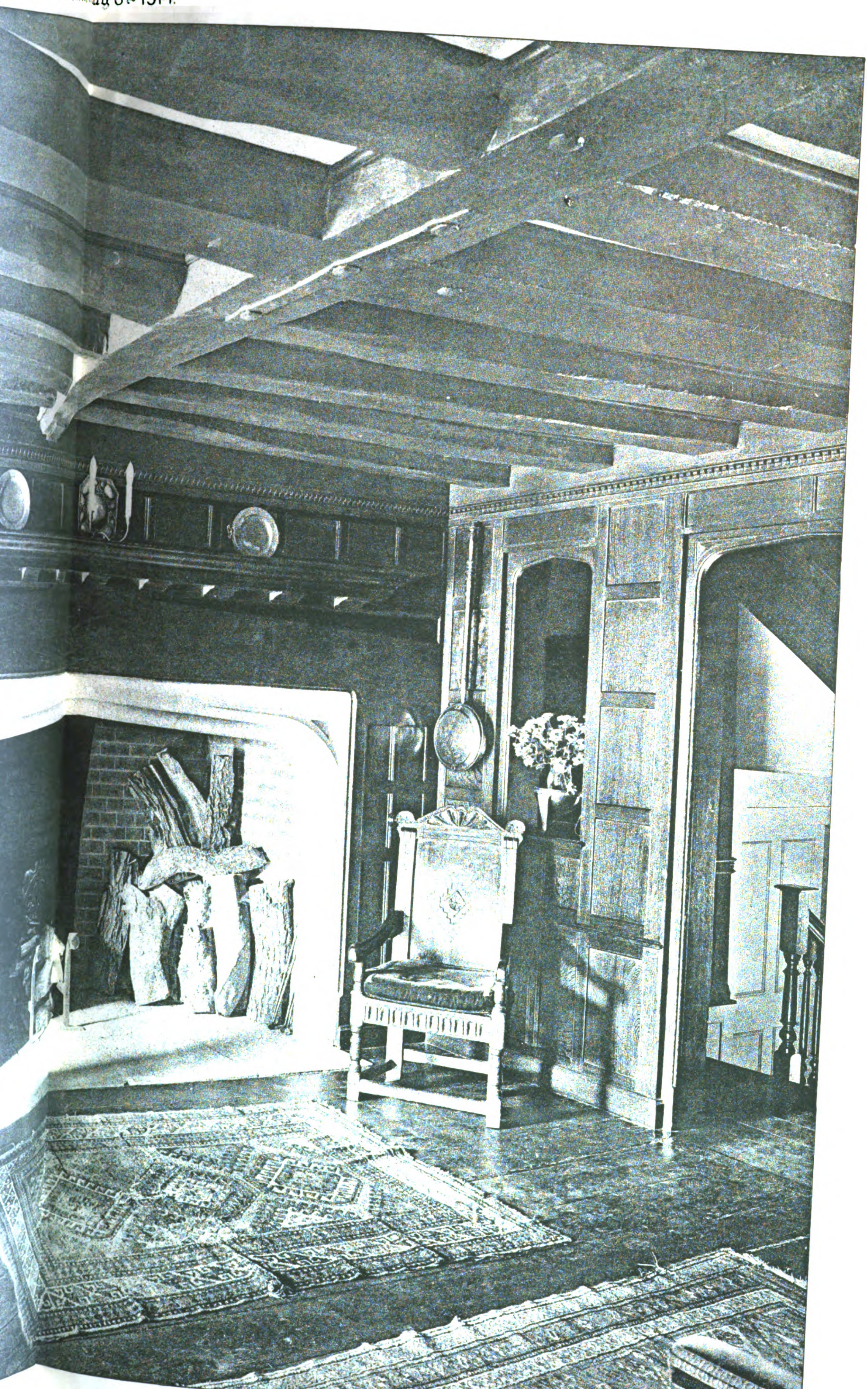

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GOUDHURST, KENT: THE HALL.

by Mr W F YOUNG, F.R.I.B.A.

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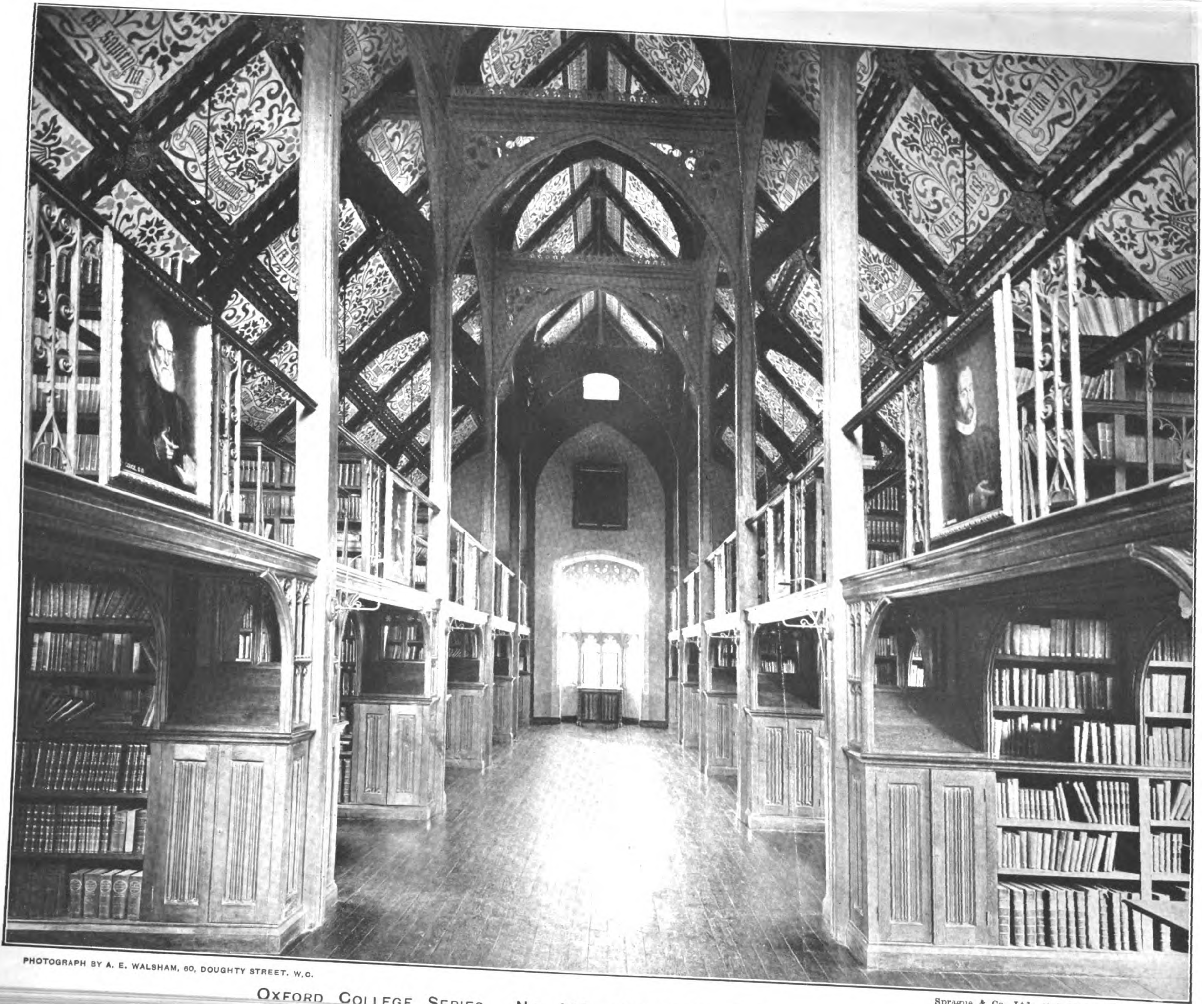

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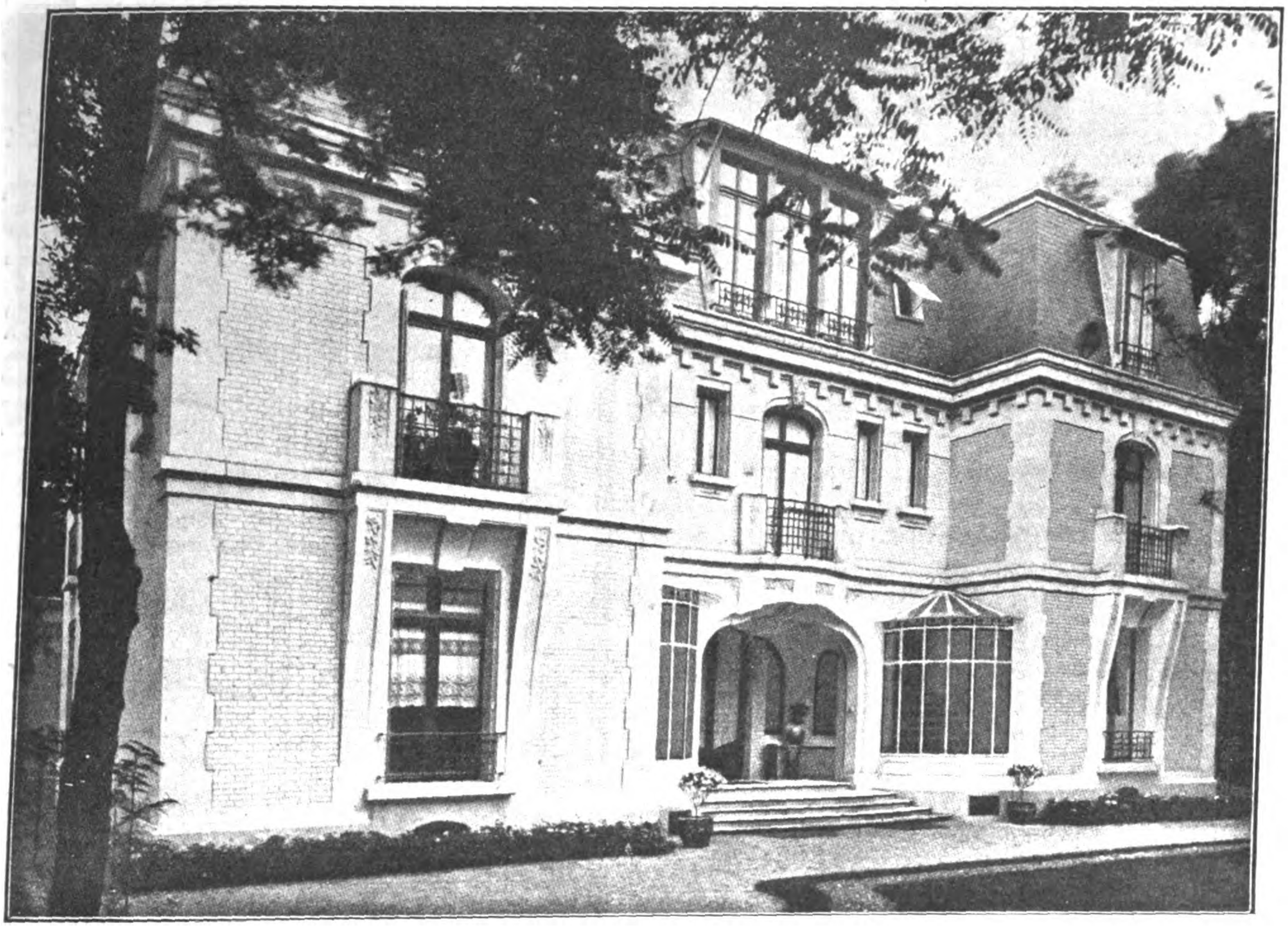
MODERN EUROPEAN ARCHITECTURE.

FRANCE.



[From *La Construction Moderne.*

PRIVATE HOUSE IN RUE RAFFET, PARIS.—*M. Henri Preslier*, Architect.

simply rattled the joists overhead. A great joy was a huge open fireplace, where the late occupier boiled his glue pots; round this well-heaped fire the sketchers sat on many a cold winter evening. But this resulted in heaps of dust and a small mountain of cinders, of which there was no means of disposal. Again, it not being easy in a provincial city town to get a regular supply of models, the suggestion of a woman to act in the dual capacity of cleaner-model was welcomed. But before long, having exhausted every pose constituting her stock-in-trade, having drawn her in every possible position that the human frame could assume, inspiration deserted them, and a change was required. It proved extremely delicate to get rid of this self-appointed Trilby. In spite of such little difficulties, some good work was put in, and quite a successful exhibition was run of "work for the trade." The present interest of this experience lay in the fact that part of his suggestion was that winter evenings might profitably be spent in drawing from the life. In considering the question of a sketch club, one of the most difficult points would be how far they would claim the powers of selection or rejection. In conclusion, Mr. Puckle made the following general suggestions for a working basis:—

1. The members to consist of any artist employed in connection with a trade, and no one else shall be qualified.
2. That a moderate subscription (say of 10*s.* per annum) be levied, with no entrance fee, but that every picture exhibited shall pay a small fee towards the general cost of the exhibition.
3. That a President, Vice-Presidents, Secretary, Treasurer, and a committee be appointed to hold office for one year.
4. That at least two annual exhibitions of the work of members be held at a public art gallery rented for the purpose.
5. That an outdoor sketching section be formed for the summer, and a life class for the winter.
6. That no regular club premises be considered until such time as the Society is in a financial position to bear the expenses.

At the conclusion of Mr. Puckle's introductory remarks, discussion of the project was thrown open to the meeting. The general feeling was that a sketch club would be desirable. A resolution to that effect was unanimously carried, and a committee of fifteen were nominated to go into the matter. During the discussion such points were raised as (1) competition of existing art schools, especially those aided by the rates; (2) the usefulness or otherwise to students working for the trade of sketching from living models; (3) the comparative merits of an empty studio as against one furnished with Period furniture, hangings, and *objets d'art*; (4) the nature of the works suitable for the occasional exhibitions; (5) the frequency of the sketching evenings; (6) the possibility of hiring a studio of some existing sketch club. But as nothing definite had been proposed nothing definite was arrived at in the way of detail.

Mr. Hindley formally proposed that a club to be called The Decorative Artists' Sketch Club should be formed. And this, as already stated, was agreed to unanimously. The first meeting of the proposed committee, which was fixed for Tuesday, May 5, has, we understand, been postponed until further notice.

AN ARCHITECT'S RESPONSIBILITY.

IN the King's Bench Division on Friday, May 1, Mr. Justice Lawrence delivered his reserved judgment in the action in which the Secretary of State for War sued Messrs. Kirkland & Capper (electrical engineers) and Mr. John Henry Townsend Woodd (architect), both of Westminster, for negligence in the performance of their duties in connection with the installation of electric lighting at the new Army Medical College and Laboratories at Millbank. Mr. Woodd (said his Lordship) was selected as the architect for these important buildings, his engagement being confirmed by a contract dated October 30, 1903. By this contract Mr. Woodd undertook to prepare and be responsible for the designs, estimates, specifications, drawings, and detailed working drawings of the new works, including lighting, and also be responsible for the proper supervision and execution

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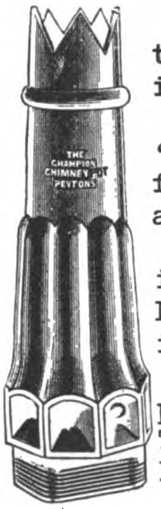
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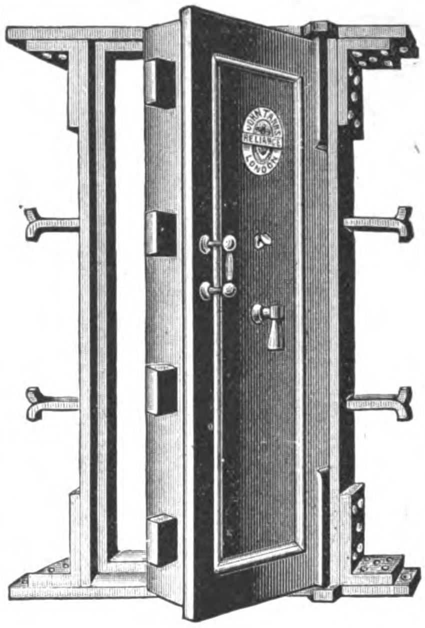

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of the work. His remuneration was to be a commission of 5 per cent. upon the net cost of the buildings and works completed under his direction. He was empowered to employ a local superintending staff at the cost of the War Department, but to be under his own orders and to be engaged and discharged by him subject to the approval of the War Department. It was further provided that the electrical engineering and lighting work were to be placed under responsible experts, and that no commission was to be charged thereon by Mr. Woodd unless special interviews or plans were required of him, in which case the charge was to be according to the time and trouble involved.

In February 1904, continued his Lordship, the defendants Kirkland & Capper were employed to prepare plans and supervise the electric lighting of the building. They were nominated by Mr. Woodd, and were employed upon the terms of their receiving 5 per cent. commission upon the cost of the electrical work. It became apparent, in the course of this action, that this commission was shared by Mr. Woodd in the proportion of 4 per cent. to Kirkland & Capper and 1 per cent. to Mr. Woodd. This fact was unknown to the plaintiff and his advisers until after the action was brought. The installation was completed on May 13, 1907, and the first complaints of the work appeared to have been made in the following August. In February 1909 serious complaints of the installation were made to the effect that there were various defects, and tests made in July 1909 disclosed the fact that twenty-three circuits out of eighty-three were defective. A subsequent test disclosed seven more defective circuits.

The first allegation of negligence or breach of duty, continued his Lordship, was that the defendants had improperly departed from the provisions of the specifications by employing a system of wiring under which lead-covered wires were buried in plaster.

His Lordship thought this was not permissible under the specification, and was one of the main contributory causes of the defects which subsequently revealed themselves. The second head of complaint was that the supervision of the work of wiring was negligent or insufficient, and this appeared to be true.

For the defendants it was contended that the defects were due to the use of improper fuses, that was to say, of fuses which would permit a stronger current to pass than the wires were capable of carrying in safety.

His Lordship was satisfied upon the evidence of the experts who were called, that the faults were due to the work done before or during erection.

On the question of liability, his Lordship said it was clear, firstly, that Kirkland & Capper were liable, for they were specially charged with the work of installation, and it was the sole purpose of their employment. As to Mr. Woodd, it had been urged for him that the responsibility of Kirkland & Capper relieved him from all responsibility for the electrical installation, but he (the Judge) thought that contention failed. First, his contract specially provided that he should be responsible *inter alia* for the lighting and for its proper supervision and execution, while the clause providing for responsible experts contained no words of express exoneration of the architect. In this case Mr. Woodd himself required this system of wiring to be adopted, and it was his own architectural designs which rendered it necessary, if it was necessary. Further, he shared in the payment made by the plaintiff for this very work of supervision.

"It is a matter of regret to me," observed the Judge, "to have heard of and to have to express my disapprobation of this secret commission transaction between the defendants. The excuses put forward for it were most unsatisfactory. There was no service performed by Mr. Woodd for Kirkland & Capper, proved before me, which he was not bound to perform under his obligations to the plaintiff."

His Lordship held that both the defendants were liable for damages, and he thought the true measure of them would be the cost of reinstating the defective circuits. If the parties could not agree upon an amount the Official Referee would estimate the cost of such reinstating.

Judgment was accordingly entered in favour of the plaintiff for the amount so agreed or found against both sets of defendants, and with costs.

THE will of the late Mr. Richard John Leeson, aged sixty-three, of The Corner House, Lacock, Wilts, and of Cullercoats, Northumberland, architect, the designer of several of the principal buildings in Newcastle, has been proved at £15,548, with net personalty £6,580.

LIVERPOOL ARCHITECTURAL SOCIETY.

THE annual meeting of the Liverpool Architectural Society (Incorporated) was held last week at the Society's rooms, 13 Harrington Street, Mr. G. Hastwell Grayson, the retiring President, occupying the chair.

According to the report, the membership of the Society consisted of seventy Fellows and fifty-nine Associates, while there were also three Hon. Fellows, nine Hon. Associates, and nine students. The financial position was satisfactory.

In moving the adoption of the report, Mr. Grayson, the chairman, observed that it was a great pity there were not more younger members coming in. They were going backwards so far as Students and Associates were concerned, although they were progressing as regarded Fellows. He suggested that perhaps some of the senior members might induce more of the younger members of the profession to join. Dealing with the finances, he said there was £234 standing to their credit, which had been invested. They also had a fund for opposing the suggested alteration to St. George's Hall. With regard to the Podium account, they did not know exactly where they stood. He had communicated with the Town Clerk, and had received a very guarded reply, to the effect that the Town Clerk was by no means in a position to say whether the Podium suggestion was dead.

The report and accounts were approved.

The Chairman extended a cordial welcome to the new President, Mr. Gilbert W. Fraser, who thanked the meeting for the honour.

The other officials are as follows: Vice-Presidents, Messrs. E. P. Hinde and W. E. Willink; Hon. Secretaries, Messrs. Egerton L. Bower and Duncan A. Campbell; Hon. Auditors, Messrs. J. Woolfall (Fellow) and D. Bullen (Associate). The following unofficial members of the Council were elected: Fellows, Messrs. E. B. Kirby, O. D. Black, W. G. Dobie, T. E. Eccles, G. H. Grayson, R. Holt, and P. C. Thicknesse; Associates, Messrs. L. P. Abercrombie and H. O. Burroughs.

BUILDING PROGRESS IN THE PROVINCES AND SUBURBS.

A LIST OF WORKS PROJECTED OR COMMENCED.

(N.B.—Local Authorities, architects, and others are invited to submit full particulars for insertion in this weekly list. Where districts are not entered against names of architects and builders the address is as a rule local.)

ENGLAND.

BERKSHIRE.

Reading.—Kendrick Girls' School, Sidmouth Street, for the Education Committee.

CORNWALL.

Falmouth.—Forty-four Council houses. Trevethan Cottages.

St. Austell.—Conversion of three dwellings, Almyr Place, into a tuberculosis dispensary.

CUMBERLAND.

Carlisle.—Ladies' Swimming Bath, James Street: extension (£2,000).

Seaton.—Council School. Mr. J. Foster, architect, 13 Earl Street, Carlisle.

DURHAM.

Sunderland.—Training College: men's hostel (£6,330) and Principal's house (£1,500).

Willington.—Working Men's Club and Institute (£550). Mr. J. H. Armory, contractor.

ESSEX.

Chipping Ongar.—Council Trust School: enlargement (£3,250).

GLOUCESTERSHIRE.

Gloucester.—Twenty-four working-class houses (£4,800). Messrs. La Trobe & Weston, FF.R.I.B.A., architects, 1 Unity Street, Bristol.

HEREFORDSHIRE.

Hereford.—Reading Room, for the Garden City (£500).

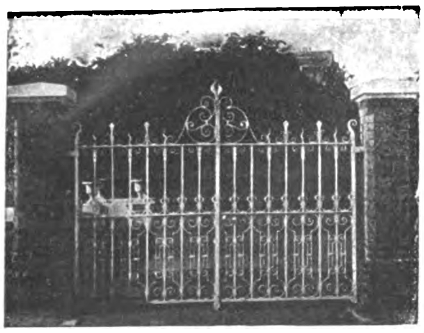
HERTFORDSHIRE.

Barnet.—Infants' Home, &c., for the Board of Guardians. Messrs. Williams & Cox, FF.R.I.B.A., architects, 34 Henrietta Street, London, W.C.

KENT.

East Farleigh.—Proposed Council School.

Gravesend.—"Mayfield," Pelham Road: additions and alterations to form Girls' County School. Mr. W. H. Robinson, Education Committee architect, Sessions House, Maidstone.



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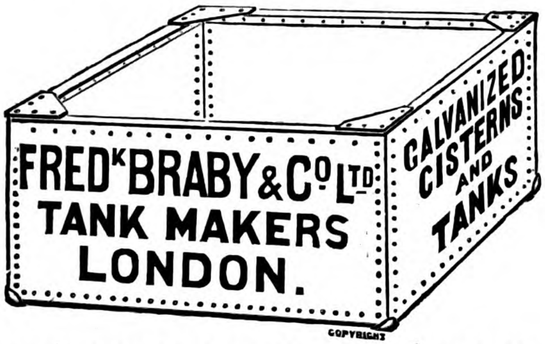

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ENGLAND—*continued*

Maidstone—continued.

Green Theatre, New Road: alterations. Mr. C. E. Lovell, architect, 8 Wrotham Road.

LANCASHIRE.

Accrington.—Proposed Picture Theatre, Whalley Road, for Mr. J. T. Sutcliffe.

Audenshaw.—St. Hilda's Church.

Barrow-in-Furness.—Proposed Council Schools, Victoria and South Vickerstown (£31,000).

Blackburn.—Tuberculosis Dispensary (£800).

Burnley.—Victoria Hospital: proposed additions and alterations.

Council Schools, Lionel Street.

Kearsley.—St. Stephen's Infants' School (£1,200).

Liverpool.—Picturedrome, Tunnel Road and Moorgate Street, for the Tunnel Road Picturedrome, Ltd.

Manchester.—Presbyterian Church, Ardwick (£4,000).

Stanley.—St. Anne's Day Schools. Messrs. G. Bradbury & Sons, diocesan architects, 14 Cook Street, Liverpool.

LINCOLNSHIRE.

Holbeach.—Twelve working-class houses (£2,400).

Quadring.—Council houses (£1,700).

Surfleet.—Council houses (£1,450).

MONMOUTHSHIRE.

Bedwellty and Pontilanfraith.—Isolation Hospitals.

NORFOLK.

Diss.—Proposed workmen's dwellings, Frenze Road.

NORTHUMBERLAND.

Morpeth.—N.E.R. Station: additions and alterations. Mr. W. Bell, Company's architect Messrs. S. Fenwick & Co., contractors, Northumberland Road, Newcastle-on-Tyne.

Newcastle-on-Tyne.—Tuberculosis Dispensary alterations, Ridley Villas.

Thirty to forty self-contained houses, for the Tyneside Tenants, Ltd.

130 self-contained tenements, for the Sutton Trustees.

NOTTINGHAMSHIRE.

Scarrington.—Six working-class cottages, for Bingham R.D.C.

STAFFORDSHIRE.

Stafford.—County Council Offices, Martin Street. Mr. W. J. Nevett, County architect, County Buildings.

Stoke-on-Trent.—St. Mark's Church, Basford (for 500 sittings), £6,600. Messrs. Austin & Paley, A.R.I.B.A., architects, Castle Park, Lancaster. Mr. S. Heath (of Basford), contractor.

Tamworth.—Cemetery: chapel (£1,000).

Sixty-seven workmen's houses, Bradford Street (£13,150). Borough surveyor.

WARWICKSHIRE.

Birmingham.—Council House: proposed extension.

Corley.—House, for Mr. F. E. Cooper.

Coventry.—R.C. Church and Schools, Stanley and Highfield Streets, for Rev. L. S. Emery.

Factory, corner of Ironmonger Row and Palmer Lane: additions, for Messrs. Caldicott & Feltham.

Six houses, Durbar Avenue, for Mr. A. Avis.

Six houses, Durbar Avenue, for Mr. R. D. Parry-Jones.

Seven houses, Earlsdon Avenue, for Mr. T. F. Bird.

House, Styvechale Avenue, for Mr. W. Clarke.

Six houses, Styvechale Avenue. Messrs. C. Luck & Son, builders, Earlsdon.

House, Styvechale Avenue, for Mr. F. Oldham.

Two houses, Styvechale Avenue, for Mr. F. M. Turner.

Three houses, Clay Lane, for Mr. H. J. Emery.

Four houses, Clay Lane, for Messrs. Youell & Brooks.

Thirteen houses, Crabmill Lane, for Mr. H. Hiorns.

Two houses, Holbrooks Lane, for Mr. A. Day.

Two houses (one with shop), Swan Lane, for Mr. A. Jeffs.

Five houses, Ethelfield Road, for Messrs. Jervis Bros.

House, Ethelfield Road, for Mr. G. Nichols.

House, Harefield Road, for Mr. E. J. Twigg, sen.

Twelve houses, Kirby Road, for Mr. C. Spiers.

Eleven houses, Latham Road, for Mr. E. Jordan.

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Seven houses, Shaftesbury Road, for Mr. A. J. Crump.

Eight houses, Sovereign Road, for Mr. G. W. R. Philpot.

Four houses, Brighton Street, for Mr. F. Brookfield.

"Sherbourne House," The Butts: extension for Y.W.C.A.

Workshops, Holbrooks Lane, for Messrs H. Goode & Son.

House, Binley Road, Stoke, for Mr. W. Lindley.

Foleshill.—Baptist Church, Webster Street.

S.A. Citadel, Broad Street (£1,270).

Hampton-in Arden.—House for Mr. G. W. Wynn.

Nuneaton.—Three houses and shop, Heath End Road, for Mr. E. F. White.

Six houses, Friary Street, for Mr. G. Aldridge.

Picture Palace, Queen's Road: alterations for Messrs. S. & J. Smith.

Rugby.—House on the Bilton Estate, for Dr. Powell.

Nine houses and two shops on the Brownsover Estate, for Mr. Jewell.

WORCESTERSHIRE.

Harrington.—Sixteen working-class cottages.

YORKSHIRE.

Ackworth.—Ten houses for Messrs. Camplin Bros.

Cudworth.—Hotel, Pontefract Road. Messrs. Crawshaw & Wilkinson, architects, 13 Regent Street, Barnsley.

Darfield.—Forty Council houses.

Golcar.—Mixed Council School.

Halifax.—Technical College: extension (£1,000).

Hemsworth.—Council Chamber and additional Offices for the Board of Guardians (£1,500).

Huddersfield.—Cinema, corner of John William and Brook Streets, for the Huddersfield Cinema Co., Ltd.

Riccall.—Twenty-six houses, Barlby Road, for the Selby Transport and Warehousing Co.

Skipton.—Congregational Church, Newmarket Street. Mr. J. Totty, architect, 20 Moorgate Street, Rotherham.

WALES.

Blackmill.—Mission Hall. Mr. J. M. Williams, architect.

Fforestfach.—Calfaria Baptist Chapel, Revenhill: additions.

House for Mr. W. Lewis (Garngoch).

Gorseinon.—House, Mason's Road, for Mr. J. Davies.

Loughor.—House, Borough Road, for Dr. J. Thompson.

"Cross Keys" Inn: rebuilding for Buckley Brewery Co.

Merthyr Vale.—Church. Mr. A. Grove, architect, 1 Hare Court, Temple, London.

Swansea.—Grammar School and Technical College: extension. Mr. E. Morgan, A.R.I.B.A., Borough architect, Lloyds Bank Chambers, Wind Street.

Wrexham.—Girls' County School, Chester Road (for 281 places).

SCOTLAND.

Aberdeen.—Police Office: extensions (£2,700).

Cathcart.—Parish Church (for 1,200 sittings).

Edinburgh.—Laundry, Craiglockhart: extensions for Parish Council (£2,400).

Glasgow.—Council tenements (£5,200). Mr. A. B. M'Donald, City engineer.

Office block, Linthouse, Govan, for Messrs. A. Stephen & Sons, Ltd.

Picture House, corner of Cornwall and Park Streets, Kinning Park, for the Lorne Cinema Co.

Workshops, Petershill Road, for Messrs. F. Braby & Co., Ltd.

Workshops, corner of Galbraith Street and St. Vincent Crescent, for Messrs. J. Menzies & Co., Ltd.

Morar.—Accommodation School and teacher's house. Mr. J. G. Falconer, architect, 22 Alexandra Place, Oban.

IRELAND.

Hillsborough.—Sixty labourers' cottages.

Rosses Point.—Hotel for the Midland G.W.R. of Ireland Co. Mr. W. P. O'Neill, Company's engineer (Dublin).

PATENT SPECIFICATIONS PUBLISHED, APRIL 23, 1914.

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No. 7,573. March 31, 1913.—H. J. Odet, 19 rue Confort, Lyons. Measuring taps or valves.

9,839. April 26, 1913.—J. R. Happer, Sutherland House, Markinch, Scotland. Astragals for windows and the like.

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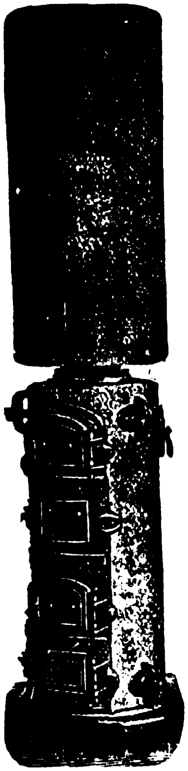

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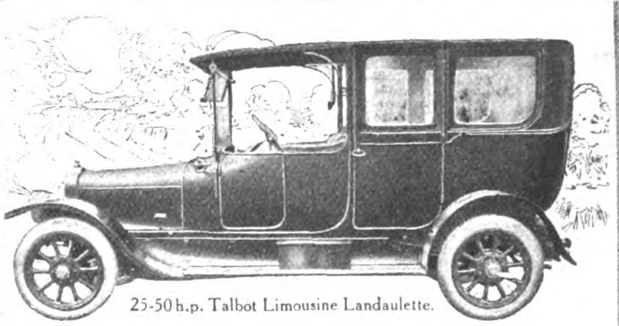

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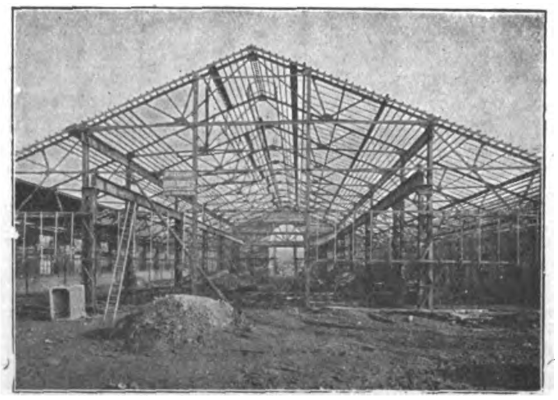

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EDINBURGH, St. Andrew Steel Works.
MANCHESTER, Office and Works, Trafford Park.
GLASGOW, Office: 75 Bath Street. Works: Port Dundas.

7,946. April 4, 1913.—John Stratton, The Lindens, Winton Road, Bowdon, Cheshire, and E. A. Claremont, Broom Cottage, High Legh, Cheshire. Making sheet lead.

10,546. May 5, 1913.—A. F. Ficker, Eibenstock in Sachsen, Germany. Machines for moulding plain and hollow bodies from concrete and the like.

11,752. May 20, 1913.—S. C. Irving, Berkeley, Alameda, California, U.S.A. Roofing sheets.

14,170. June 19, 1913.—O. D. Lucas, 39 Victoria Street, and Veritys, Ltd., 31 King Street, Covent Garden, W.C. Electric-light fittings.

14,182. June 19, 1913.—N. J. Porter, 13 Queen's Square, Belfast. Composition for covering iron or steel or like structures.

15,677. July 7, 1913.—Joseph Stephenson, 15 St. Paul's Road, Fisherton Street, Salisbury. Apparatus for the generating of water gas.

15,821. July 9, 1913.—C. V. Childs, Suffolk House, Laurence Pountney Hill. Side rule for structural engineers.

16,748. July 21, 1913.—A. B. Ward, 25 Crieff Road, Wandsworth Common, S.W. Apparatus for raising portiere or similar curtains, sun blinds, awnings, or the like.

18,757. Aug. 18, 1913.—T. A. White, East Indian Railway, Calcutta, Bengal. Code or combination locks.

20,765. Sept. 15, 1913.—Henry Sidebottom, 75 Hawthorne Road, Chorlton-cum-Hardy, Manchester, and the "Non-Choker" Heater Co., Ltd., 5A Chapel Street, Salford, Manchester. Fuel economisers for domestic and like firegrates.

21,848. Sept. 27, 1913.—Edwin Euston, 4000 Duncan Avenue, St. Louis, Miss., U.S.A. Process of producing white lead.

33,859. Oct. 21, 1913.—Christiani & Nielsen, Copenhagen, Denmark. Pile planking.

26,572. Nov. 19, 1913.—Ernst Meier, of Westfalische Maschinenbau-Industrie, Gustav Moll & Cie A.G., Neubeckum, Westfalen, Germany. Valve for automatically stopping the supply of liquid to pipes upon breaking and the like.

28,103. Dec. 6, 1913.—Thos. Higson, Mackett's Lane, Hunt's Cross, Lancs., and R. L. Burns, 91 Edge Lane, Liverpool. Concrete floor centering.

28,807. Dec. 13, 1913.—Dated under International Convention Dec. 21, 1912. Bauartikel-Fabrik A. Liebel, Dusseldorf-Rath, Germany. Device for joining blocks, slabs, or the like in building operations.

28,847. Dec. 15, 1913.—Geo. Wilkinson, Beech Mount, Otley Road, Harrogate. Apparatus for heating water or other liquids.

6.120. March 11, 1914.—John Bratley, Union Lane, Sheffield. Tenoning attachment to wood planing machines.

No. 28,058. Dec. 5, 1913.—Hugo Dominicus and Robert Neuhaus, Remschied, Germany. Saw-setting appliances.

423. Jan. 7, 1914.—Roland Livingstone, Dunmore, Larbert, Stirlingshire. Locks.

3,191. Feb. 7, 1913.—Andrew Daly, 104 Napiershill Street, Glasgow. Means for securing chimneys to roofs.

5,340. March 3, 1913.—Walter Conan, Ard-na-chree, Dalkey, Dublin. Preventing air locks in pipes, tubes, and the like.

5,507. March 5, 1913.—A. J. Bowyer, 309 Underhill Road, East Dulwich, S.E. Fire escape.

7,911. April 4, 1913.—Arthur Russling, The Croft, Welburn Drive, Far Headingley, Leeds. Building or construction of window and door reveals.

8,069. April 5, 1913.—Dr. Ludwig Landsberg, 22 Lindeneststrasse, Nuremberg. Processes for the manufacture of asphalte-like masses and derivatives therefrom.

8,241. April 8, 1913.—H. J. Palmer, "Mona," Malden Hill, New Malden. Sheets, slabs, strips, tiles and the like for covering and constructing walls, roofs, buildings and structures.

8,357 and 8,358. April 9, 1913.—W. J. Still, 6 St. Stephen's Avenue, West Ealing, and the British Still Tube Co., Ltd., Darlington. Tubular heat interchanging apparatus.

8,497. April 10, 1913.—C. O. Bastian, 32 The Avenue, Brondesbury Park, N.W. Water heaters, such as geysers or the like.

8,599. April 11, 1913.—M. L. Kaye, 6 and 7 Colosseum Terrace, Regent's Park, and the British Silicate Engineering Co., Ltd., 70 Chancery Lane, W.C. Rotary mixers and like machines and processes for mixing bituminous material with stone and sand by the application of heat.

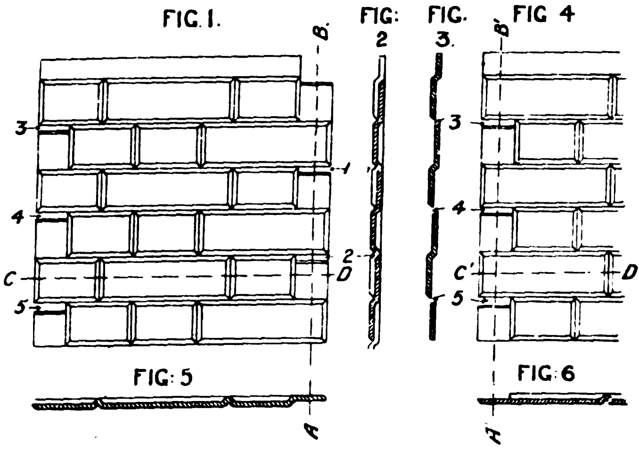
Any of the above specifications may be obtained from J. D. Roots & Co.

BRITISH PATENT SPECIFICATIONS.

Selected by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

The first date given is the date of application; the second, at the end, the date of the advertisement of the acceptance of the completed specification.

No. 8,241. April 8, 1913.—Improvements in sheets, slabs, strips, tiles, and the like for covering and constructing walls, roofs, buildings, and structures. H. J. Palmer, of "Mona," Malden Hill, New Malden, Surrey, architect.—These improvements relate to sheets, slabs, tiles, and the like, made of asbestos cement, fibrous cement, earthenware, metal, and the like. They may be shaped by rolling, stamping, moulding, or the like. The sheets are of any desired shape or design, and are formed at the edges with alternately overlapping and underlying tongues, so that the edges of adjacent sheets interlock or intergage one with another, leaving the outside surface perfectly uniform in appearance. No cover strips are required where the sheets join, and long, straight joints are avoided. Fig. 1 shows a sheet in elevation representing ordinary brickwork. The shape of the section of the jointings is immaterial. V joints are shown, but any other form of jointing can be used. Fig. 2 is a section on the line A-B showing how the edges are formed into a series of tongues with intervening notchings 1, 2, 3, 4, and 5, to allow the edge of the adjoining sheet engaging therewith. Fig. 3 is a similar section on the line A' B' of fig. 4, which shows how that edge alternately overlaps and underlies that of the adjacent sheet. Fig. 4 is a part elevation. Each sheet is capable of being pushed in between the notchings and tongues to interlock with or overlap and underlie each other. Figs. 5 and 6 are sectional plans of the said sheets on the lines C-D and C'-D' respectively. Brickwork is indicated only, but the principle can be applied to all the different forms of masonry, terra-cotta blocks, shingling, weather boarding, and glass slates. The object of the invention is to erect and sheath buildings and structures with as large sheets as possible, and to avoid small pieces and innumerable joints, reducing liability to leakage in roofs and structures. Thin sheets of asbestos cement, concrete, plaster and the like could be reinforced with any of the known forms of fibrous materials, wire or metal work. These sheets or strips are also applicable to temporary, inexpensive light construction, dismountable and the like buildings. April 15, 1914.



Correspondence

[The Editor will not be responsible for the opinions expressed by Correspondents.]

Government Employes.

Sir,—Would you allow me, through the medium of your paper, to warn any architect's assistant against taking up employment under H.M. Office of Works during the continuance of the present policy?

The position is simply "blind-alley" employment; increments are as much as 1s. per week per annum, sometimes less, and at thirty-five he will be dismissed, regardless of proven ability or qualifications.

Graduate R.I.B.A.

May 5, 1914.

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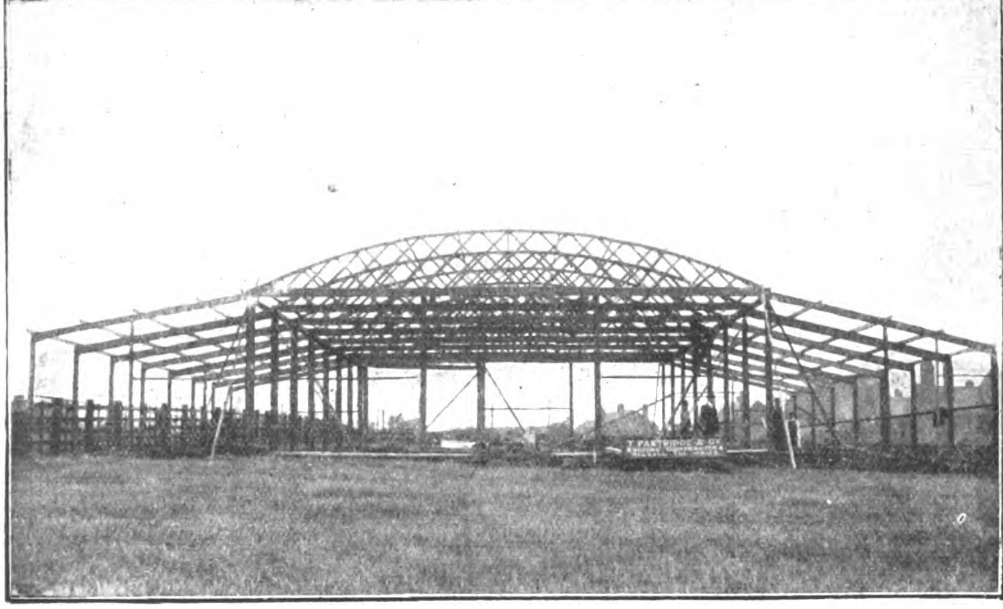

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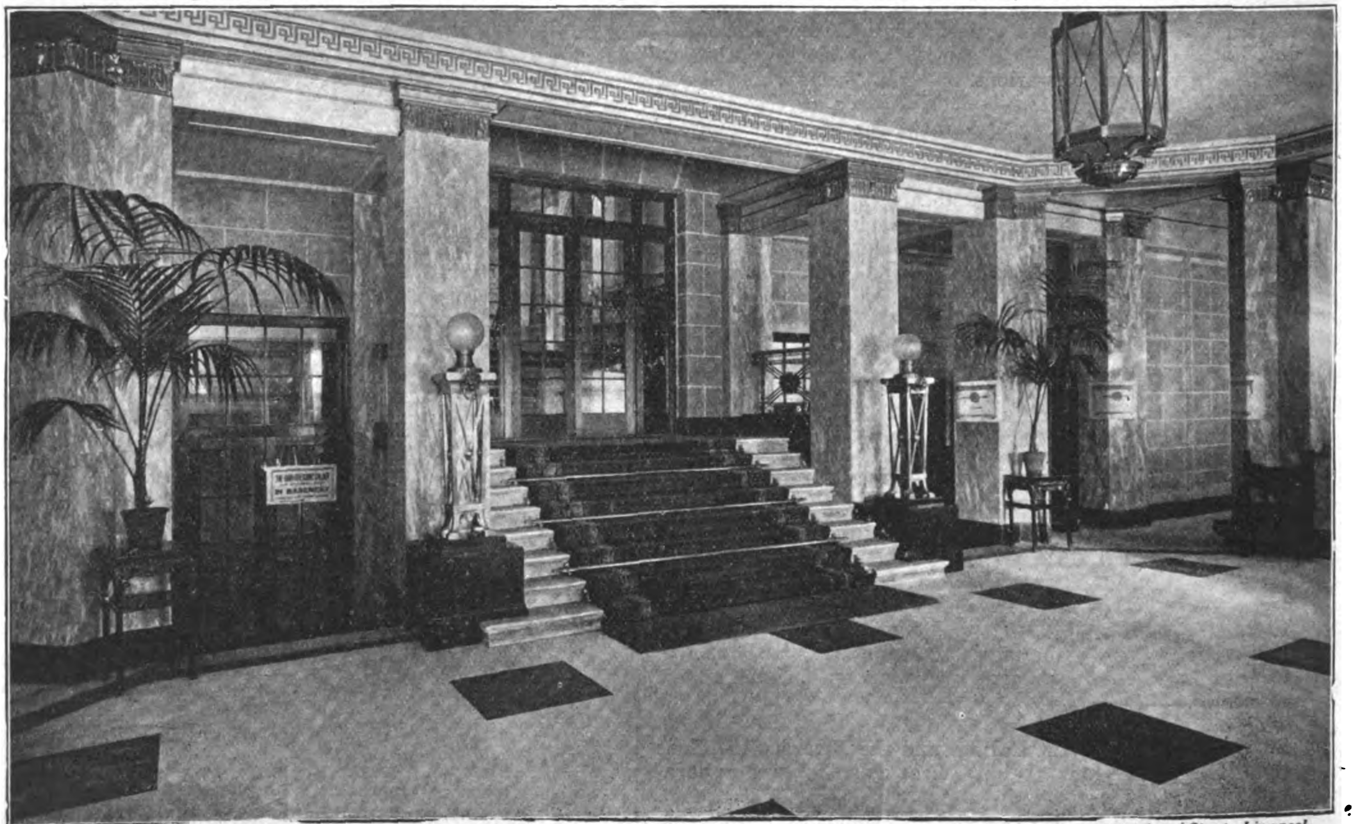
BEN HENRY JOHNSON & SONS, *ARCHITECTURAL DECORATORS,*

were entrusted by the Midland Railway Co. with the contract for the whole of the Plain and Decorative Plaster Work throughout the Midland Adelphi Hotel, Liverpool. R. F. Atkinson, F.R.I.B.A., Architect.



Mowell & Morrison, Photographers] ENTRANCE HALL, ADELPHI HOTEL, LIVERPOOL, *Fibrous Plaster Ceiling and Stucco Walls.* [*Hardman Street, Liverpool.*

69 Victoria Street, London, S.W., and Primrose Hill, Fontenoy St., Liverpool.

HANDSOME CLOTH CASES FOR BINDING "THE ARCHITECT," price 2s. each

THE ARCHITECT

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FORTHCOMING EVENTS.

Monday, May 18.

Royal Institute of British Architects : Paper, entitled "Beautiful London, with special reference to the aims of the London Society," by Mr. T. Raffles Davison, Hon. A.R.I.B.A., at 8 P.M.

Victoria League : Imperial League Housing Conference and Exhibition at the Imperial Institute opens.

Wednesday, May 20.

Royal Institute of the Architects of Ireland : General Meeting to discuss proposed new Charter of the R.I.B.A. and Registration, at 8.30 P.M.

Thursday, May 21.

Illuminating Engineering Society : Annual Meeting and Paper, entitled "The Nomenclature and Definitions of Photometric Qualities," by Mr. A. P. Trotter, at 7.30 P.M.

Institution of Municipal Engineers : Visit to the Works of the General Electric Co., Ltd., Witton, Birmingham.

National Housing and Town Planning Council : Conference at Hull (two days).

Friday, May 23.

Surveyors' Institution : Country Meeting at York (two days).

Saturday, May 23.

Architectural Association : First summer visit to "Bassetts," Farnborough, Kent (Mr. Maurice E. Webb, M.A., architect), to meet at London Bridge 2.20 P.M.

ARCHITECTURE AT THE ROYAL ACADEMY.—II.

Sir Aston Webb, R.A., is represented by four contributions—"Additions to the Junior United Service Club, Waterloo Place, S.W.," in the name of the firm, Sir Aston Webb, R.A., & Sons; and in Sir Aston's own name, "New House at Brooke, Isle of Wight," "New Library Building, Leys School, Cambridge," and "Entrance to the Imperial College of Science and Technology, Prince Consort Road, South Kensington." The additions to the Junior United Service Club are, as far as the exterior is concerned, in the form of an added third storey, which is most admirably arranged and proportioned, so that it adds to the merits of the original design and transforms a good building into an excellent one. The house on the Downs in the Isle of Wight stands "four-square to all the winds that blow." It is a study in massive squareness, with straight uncompromising sky-line without visible roof, and broken only by a square tower, surmounted with a domed cupola. In its yellowish-grey stone, as depicted by Mr. Gascoyne, and its massive squareness, it suggests Yorkshire rather than Hampshire. The new library of Leys School is in quite a different manner, as is, of course, appropriate, and has the normal flavour of collegiate Tudor. Gabled ends and dormered terminal bays, an octagonal oriel and a high central belfry and clock turret form, with a long ridge line, a gratifying composition in which dignity is obtained by symmetry of grouping and piquancy by asymmetry of details. The entrance to the Imperial College of Science is a study in Classic, with a semi-circular recess in the centre, the ribbed semi-dome of which clashes unpleasantly with the more formal detail, the correctness of which is not marred by a new form of egg-and-tongue enrichment.

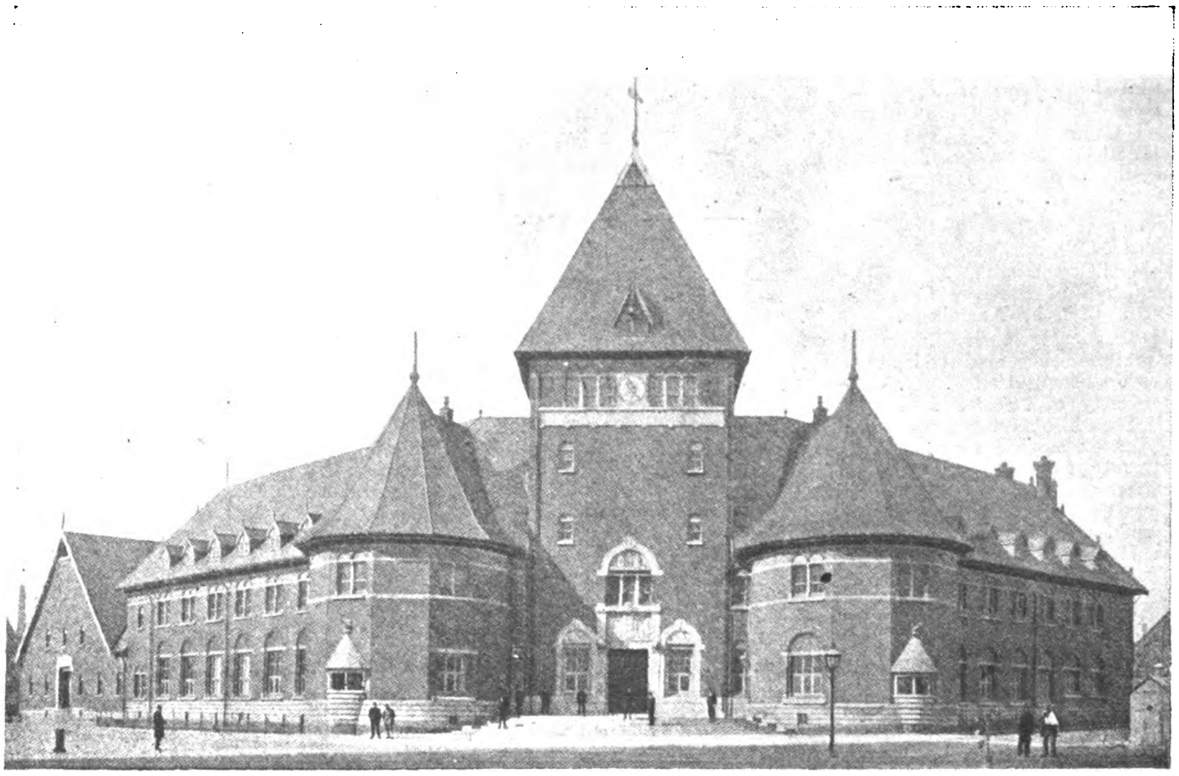
Sir T. Graham Jackson, R.A., does not exhibit this year, nor does the newly-elected Associate, Mr. Edward S. Prior. The contributions of Mr. Edwin L. Lutyens and Sir Ernest George to the Architectural Room we have already noticed in our first article on the Academy. Sir Ernest also sends two sketches made during his recent trip to India, which are hung in the Water-Colour Room, and are bright, sunny studies, full of colour, of "The Agra Gate, Ajmer," and "The Durgar Gate, Ajmer." Mr. Ernest Newton, A.R.A., is represented only by a very excellent model of a typical English house at Jouy-en-Josas, France, in which, once again, we have the advantages, æsthetic and practical, of symmetry in grouping, with asymmetry in detail. The now-recognised adjuncts of a modern English country-house, the formal garden, with summer-houses, pergolas, and the rest, are seen in the model, in which plants and shrubs are well suggested by clever use of sponge, sea-weed, and moss.

Ecclesiastical architecture does not this year make any very remarkable show on the walls of the Architectural Room of the Royal Academy. Perhaps one may take as the most important exemplar Mr. Beresford Pite's "Cathedral of St. Paul, Namirembe, Uganda," of which an exterior is now shown, supplementing the interior, which has previously appeared on the Academy walls. As we noted, with regard to that drawing, it is evident that Mr. Pite has been limited in his possibilities of treatment by the necessity of evolving a design capable of execution by native craftsmen of East Africa. The result shows how little architecture is really dependent upon detail, for here we have a truly great and admirable design in which the whole conception is that of form, mass, and proportion. There is here no attempt to transplant an English church to tropical climes, as architects have so often done, not in all cases voluntarily, but in accordance with imperative instructions from their employers. On the contrary we have a design eminently suited for its locale, and yet withal ecclesiastical in expression.

Mr. Huon A. Matear exhibits his designs for "The Chancel-screen, Holy Trinity Church, Southport," and for "The Chapel, Holy Trinity Church, Southport." The former is an elaborately detailed piece of work in oak, with a quasi-loft carried on vaulted fans, which, according to the section, is somewhat of a sham. The loft front is further enriched with projecting canopies, the centre one of which has a crucifix beneath it as a *raison d'être*, which does not apply to the others. The whole design appears to be an attempt to gain an entirely false effect by pure extravagance. The pulpit and sounding-board shown in the same drawing are further examples of extravagance. The chapel is shown in an interior view, and is vaulted with stone ribs and brick severies. The entrance is through a moulded archway with cusping on the solid. Pinnacle buttresses at the side form supports for statues, over which are canopies. As with the screen, the architect seems to have had instructions to spend as much money as possible, and the consequent lack of repose is disastrous.

MODERN EUROPEAN ARCHITECTURE.

DENMARK.



[From *Het Huis*.

CUSTOM HOUSE AT AARHUS.—Professor Hack Kampmann, Architect.

The only example of Church work which comes from Mr. W. D. Caröe this year is the church of Upton St. James, Torquay. This is a rather more restrained piece of modern Perpendicular than Mr. Caröe has usually produced in the past, and therefore more satisfactory. A wide south aisle with flat roof terminates in a morning chapel, and a fine tower occupies the south-west corner.

Quasi-ecclesiastical, and amongst the churches, is Mr. Eustace C. Frere's detail perspective of the "Entrance, Bloxhall Road Mission," a clever design shown in a clever water-colour drawing. Based on Italian Renaissance work, there is a charming originality in the carved panel over the door combining a cross with the emblems of the four evangelists.

An excellent piece of design is the west front of "Church of St. Andrew, Bedford," by Mr. C. E. Mallows. A single traceried window of Decorated type with a crucifix above in the gable and massive buttresses afford space for broad wall surfaces which are not marred by a pent-roofed projection with low windows. The breadth of composition is rendered possible by porches north and south for the entrances.

In the drawing illustrating "St. Mark's, Camberwell: West Front of Church, Hall, and Vicarage," of which Mr. Richard Creed is the architect, even the skill of Mr. Alec Horsnell is unable to prevent the feeling of unrest in the church design, particularly in the central western tower, which has too much window, and is otherwise too much cut up. It is not quite clear which is the hall and which the vicarage. Possibly they are combined in the one building, which, in its unaffected simplicity of square-headed mullioned and transomed windows and its bounding gables, has the dignity and repose that is lacking in the design of the church.

Following the order of the catalogue we next come to "New Church, Canwell, near Sutton Coldfield," one of Mr. Temple Moore's three contributions. This is an interior view of a single-span nave, whose stone-lined walls with Decorated windows are vaulted. A simply-designed screen of Perpendicular type in no way detracts from the breadth and dignity of the building. Another interior view shows "Additions to Hendon Parish Church," in which it is not quite clear what is original and what additional. The thin arcade is probably not Mr. Moore's design, though the screen and rood-beams no doubt are. Mr. Moore's third drawing shows the interior of "Proposed Church of St. Columba, Scarborough," in which a broadly-treated, high nave arcade is surmounted by a low clerestory. A cambered rood-beam with cross is a piquant relief to the general breadth of treatment, but even in this there is restraint rather than extravagance.

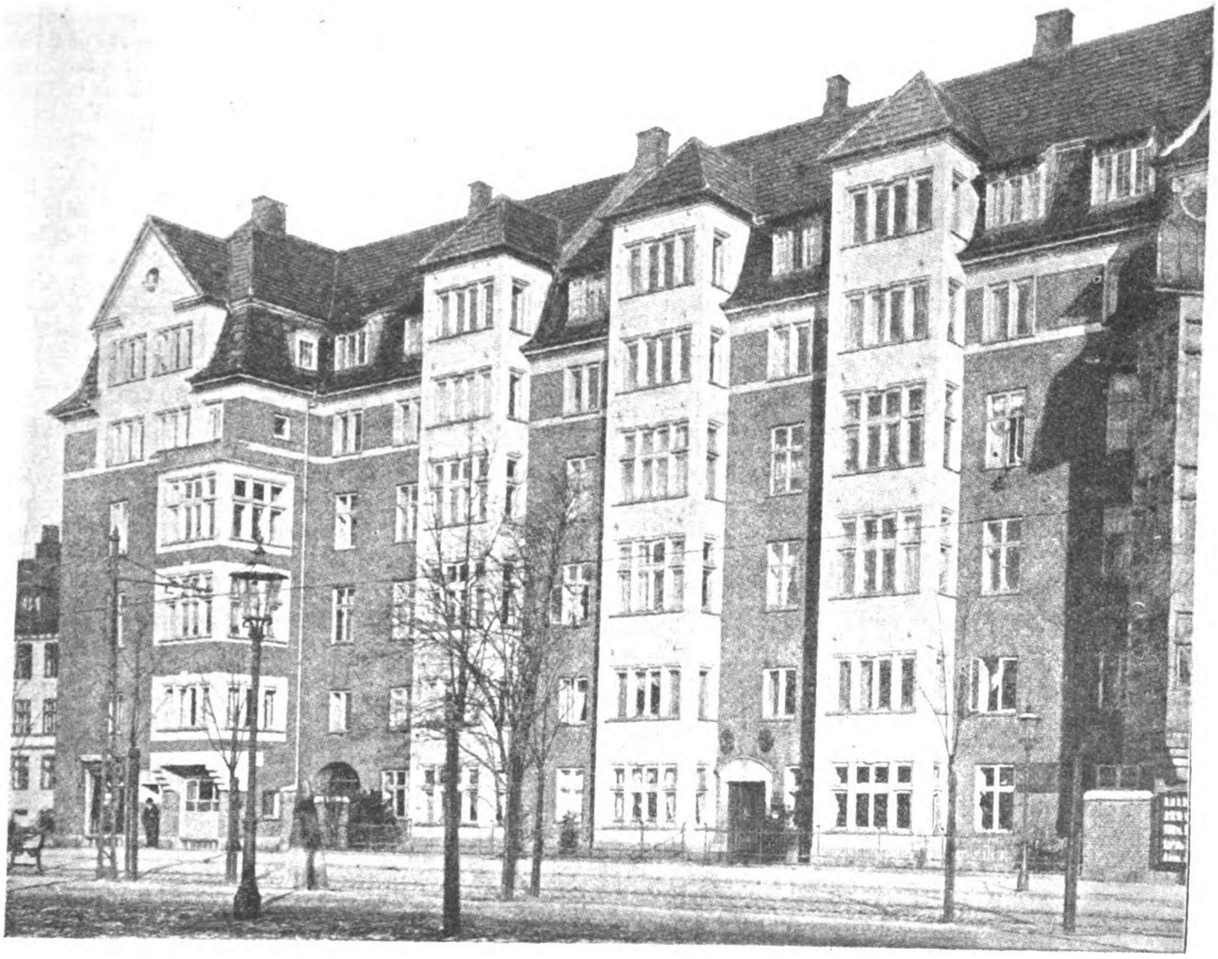
NOTES AND COMMENTS.

One can hardly imagine that in the British Dominions beyond the seas the question of the preservation of ancient monuments can yet have arisen, yet we learn from the *Journal of Proceedings* of the Royal Victorian Institute of Architects that at the first meeting of the present year Mr. John Little (F.) strongly urged that, as it had been decided to demolish the Bank of New South Wales building, steps should be taken to prevent the destruction of the exquisite work of the front elevation, which was erected some 54 years ago. In the speaker's opinion there had not been any building subsequently erected in Melbourne which had equalled this work, either in design or execution, and he pleaded that it should not be destroyed. It might be elsewhere erected, as was the case with Temple Bar some years ago, and quite recently the old Town Hall in Manchester. He moved a resolution which was carried unanimously: "That the authorities of the Bank of New South Wales be asked to give the elevation of their old building to the public, and the President (Mr. Henderson) be asked to convey to the authorities the wishes of the Institute."

That architects are not the only artists whose election within one or other grades of members of the Royal Academy is delayed till a surprisingly late period

MODERN EUROPEAN ARCHITECTURE.

DENMARK.



RESIDENTIAL FLATS, COPENHAGEN.—Mr. Ulrik Plesner, Architect. [From *Het Huis*.

of their lives is instanced by the election of Mr. George Adolphus Storey, A.R.A., painter, as Royal Academician. It is close upon forty years since he became an Associate, and he was then in his forty-second year. Promotion to Academician rank at his great age and with so long an interval after the initial step, are circumstances without a parallel in the long history of the body.

Manchester has made a step in the most profitable direction for smoke abatement by the formation of a provisional committee, consisting of Messrs. Daniel Adamson, R. H. Clayton, C. Dreyfus, Edward Greg, H. P. Greg, L. F. Massey, W. Melland, E. D. Simon, W. T. Stubbs, and L. Sumner, to consider the advisability and feasibility of forming a Manufacturers' League in Manchester. A similar body has been in existence in Hamburg since 1902, and excellent work has been done, through the agency of a technical staff, in the direction of making steam-raising plant more efficient and less smoky. This League maintains a staff of four engineers and six stoker instructors, who give tuition at the works of the members on the best methods of firing boilers. New appliances which are likely to be useful to steam-raisers are tested by the staff, and an important part of the work is the testing of fuels.

The President of the Local Government Board has also taken what may be a very useful course in appointing a Departmental Committee "to consider the present state of law with regard to the pollution of the air by smoke and other noxious vapours, and its administration, and to advise what steps are desirable and practicable with a view to diminishing the evils still arising from such pollution."

The summer meeting of the Royal Archæological Institute of Great Britain and Ireland is this year to be held at Derby from July 14 to July 22, and the preliminary programme includes Lichfield Cathedral and many churches, as well as Tutbury Castle, Wingfield Manor, Haddon Hall, Chatsworth, Barlborough Hall, Bolsover Castle, and Hardwick Hall.

The report of the Committee of the Privy Council on Education in Scotland for the year 1913-14 comments on the great increase in the cost of school buildings, particularly in urban areas. This is due to the increased cost of buildings and the higher standard set up in regard to housing and equipment. Generally speaking, however, economy is scrupulously studied. Proceeding, the Committee state the cost of school buildings in Scotland has nowhere reached the limits which are considered excessive in some of the more progressive States on the Continent or in America. Nevertheless, the cost of some recent buildings is certainly alarming if judged by the standard of earlier days. This condition of things in combination with other causes may possibly result in the development of fresh ideas on school planning and structure. In this connection an interesting departure may be noted in the "open-air" buildings, of which some few have recently been erected, principally for the purpose of schools for defective children, but also at least in one instance as an extension of an ordinary primary school. Bold as the experiment may perhaps appear in a climate like that of Scotland, we are informed that it has been highly successful and that the children in these schools seem to thrive, while the teachers who have once taught in them have no wish to return to schools of the ordinary type.

Mr. William Henry Goodyear, curator of Fine Arts in the Brooklyn Institute of Arts and Sciences, is delivering three lectures in Dublin on his discoveries, or theories—call them which you will—on architectural refinements—or abnormalities. By now it must be admitted that Mr. Goodyear has at least established the position that there are in ancient architecture variations from the normal which can hardly have been, universally, the result either of accident, of carelessness, or of settlement, and as there is, accordingly, *prima facie* ground for believing them intentional, we may suppose that they are refinements.

The good work that has been done by Mr. W. T. Oldreive during his tenure of office as principal architect to His Majesty's Office of Works in Scotland, in the preservation and repair of ancient monuments within his sphere of action, has met with proper appreciation, and on the occasion of a lecture by Mr. Oldreive on "King David's Tower at Edinburgh Castle" this appreciation was voiced by Lord Guthrie, who said they might have a mere official, an excellent official, but nothing more. They had had them in Scotland before; but in Mr. Oldreive they had had a man of thorough knowledge and learning in his own profession, and with a capacity to acquire new information and new learning when it was needed for any particular work. The great difficulty had been to get money for Scotland from the Treasury. They had had officials in Scotland who made requests for grants to Scotland, but those requests had been refused, and that was the end of it; but Mr. Oldreive repeated his requests, and with incredible success. Glasgow Cathedral roof required an expenditure of £13,000. He did not believe they had an official in Scotland who could have obtained that money except Mr. Oldreive. Mr. Oldreive was not a Scotsman, but he had done what no Scotsman had done, perhaps partly because he was an Englishman and because he had no axe to grind in motives except a desire to do the very best he could for the interests committed to him.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

A SPECIAL general meeting of the Institute (for Fellows and Associates only) was summoned for Monday evening last.

Mr. George Hubbard, Vice-President, took the chair, but, after waiting the prescribed period, announced that no meeting could be held as there were only thirty-nine members present, and the quorum required was forty.

The meeting therefore broke up.

It is rumoured that the fortieth member arrived shortly afterwards, while members were taking coffee in the Common Room.

COMPETITION NEWS

CHORLEY.—The Education Committee have decided to invite architects to submit competitive plans for the proposed cookery and handicraft centre in Queen's Road.

DURHAM.—The County Education Committee have selected the design of Mr. J. Wilson Hays, of Wingate, in the open competition for plans for a school for mentally defective scholars to be erected at Glake Hall, near Durham.

GATESHEAD.—The Education Committee have decided to obtain competitive plans for the King Edward School. A proposal that the competition be confined to architects in Newcastle and Gateshead was defeated.

HYTHE.—Members and Licentiates of the R.I.B.A. must not take part in the Hythe Concert Hall competition, because the conditions are not in accordance with the published regulations of the Royal Institute.

NEWCASTLE-UPON-TYNE.—The City Council have adopted a recommendation that competitive designs should be obtained for a proposed town hall in Eldon Square, and authorised an outlay of £500 for that purpose. The scheme, which will involve the clearing away of the buildings on the north side of the square, furnishes a space of 6,795 square yards on which to erect a town hall, facing the ornamental plot recently laid out. The plan also admits of side streets, 50 feet in width, from Eldon Square to Prudhoe Street. A town hall, to accommodate about 3,500 persons, and the municipal offices, are arranged for, and the estimated total cost is £300,000.

WARRINGTON.—The Town Council have adjourned consideration of proposals to erect municipal offices at an estimated cost of £50,000, and to appoint an assessor and draw up conditions for obtaining competitive designs.

ILLUSTRATIONS.

AYLSHAM CHURCH, NORFOLK.

THE large church of St. Michael, with its clerestoried nave of six bays with aisles, transepts, south porch, and west tower, is attributed to John of Gaunt (circa 1380). Of the rood screen, erected in 1507, only the lower part remains in position, containing painted panels in fairly good condition. The fine Late Decorated font bears the sculptured emblems of the Evangelists, the Crucifixion, and symbols of the Passion.

THE BRITISH BANK OF NORTHERN COMMERCE, LTD.

THIS building, which is now occupied by the British Bank of Northern Commerce, Ltd., of which the Right Hon. Earl Grey, G.C.B., G.C.M.G., G.C.V.O., is the chairman, was originally built for the Union-Castle Steamship Co., Ltd., and was known as South Africa House.

The façade is of stone, and the sculpture in the lower part, appropriate enough for the original occupants, represents various denizens of the deep, among which the octopus principally figures. The picturesque weather vane at the top, it will also be observed, represents an ancient galliot or other sailing vessel.

The architect was Mr. Drewe Mercer, and the contractors were Messrs. Waller & Co.

BASSETS, FARNBOROUGH.

THIS house has been recently completed to take the place of a smaller one, now demolished. The design and plan were influenced by the existing garden and by the desire for sunny rooms with balconies and verandahs where possible on the south side. The materials used externally are 2-inch hand-made red bricks, English oak, and some half-timber work in the gables on the south-west and west fronts. Internally, the rooms are plainly finished, with distempered walls and ceilings, with the exception of the hall, which runs up to the roof, and is panelled to a portion of its height in oak. The internal doors, floors, &c., are in oak and teak on the ground floor, and Oregon pine and pitch pine left in its natural colour with a slight polish throughout the rest of the house.

The architect is Mr. Maurice E. Webb, M.A., and the contractors Messrs. Higgs & Hill, Ltd.

The following is a list of the sub-contractors: General contractors: Messrs. Higgs & Hill; bricks, the Binfield Brick and Tile Co.; roofing tiles, Pascall's; wall tiling, Messrs. Craven, Dunhill & Co.; lead glazing and metal casements, Messrs. W. Morris & Co., Ruskin House; hot water and heating, Messrs. Clements, Jeakes & Co.; sanitary plumbing, Mr. Wm. Anderson; ironmongery, Messrs. H. F. Ramsay & Co., 1 Victoria Street; ironwork to staircase and dog grate, Mr. W. Bainbridge Reynolds, 7B Old Town, Clapham; stoves, Messrs. Bratt, Colbran & Co.; coachhouse doors, Messrs. Pearce & Norquoy; lift, Mr. G. Johnson; entrance gates, Mr. W. Lash; Durato floors, "Durato" Asbestos Flooring Co.; carving, Messrs. Finch & Wagstaff and Mr. J. Knox; nursery friezes, Mr. Christopher Webb; and Mr. C. B. Forsdick acted as clerk of works.

OXFORD COLLEGE SERIES.—NO. 139.—MANSFIELD.

THIS week we include an interior view of the dining-hall in our serious of illustrations of Mansfield College.

ANCIENT DOMESTIC IRONWORK.—III.

COOKING UTENSILS.

By J. SEYMOUR LINDSAY.

Illustrated by the Writer.

(Continued from page 407.)

ONE realises after glancing at the numerous specimens of cooking utensils, a few of which are illustrated in this article, that the factor which revolutionised the customs of the kitchen and rendered obsolete so many of the old forms of apparatus that had served for generations was the introduction of the kitchen range. From information supplied by Miss M. P. Willcocks it seems that the honour of inventing the first range in which the flue passed round the baking oven belongs to an ironfounder called Bodley, of Exeter, who introduced this improvement about the end of the eighteenth or beginning of the nineteenth century; and it is interesting to note that the firm, under the name of Bodley Brothers, still supply the market with up-to-date kitchen ranges.

In the first quarter of the nineteenth century kitchen ranges were established in many town houses throughout the country, Birmingham supplying a great number for home and export trade.

Before the advent of the kitchen range, the most usual method of cooking, whether with a down hearth or open grate, was by boiling in large cauldrons suspended above the fire from a pothook, or, if the fire was in a grate, sometimes an implement called a cran was used to support the boiling vessel. The cran illustrated in fig. 1 is an open frame, which was placed over the fire, and was supported on the top bar of the grate by two short forked feet. This implement could also be used with the eighteenth-century cast-iron stove shown in fig. 2, called in some districts a duck's nest, and which, by the way, forms a transition between the down hearth and the fixed kitchener.

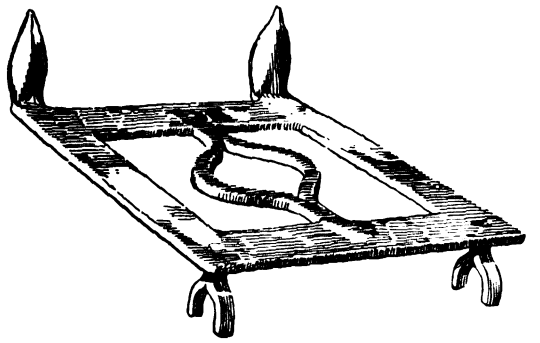


FIG. 1.

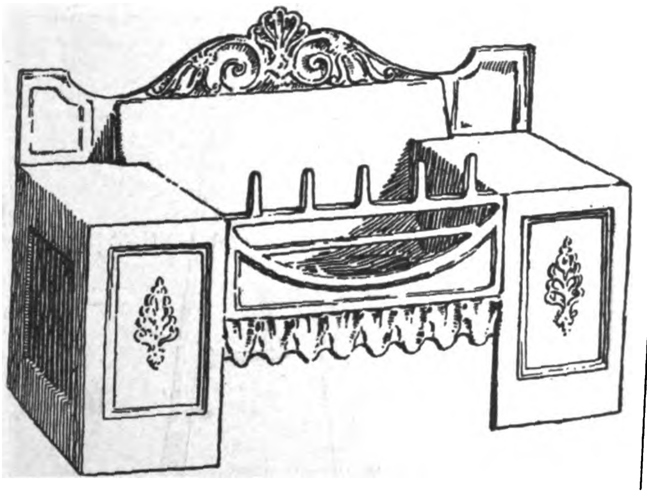


FIG. 2

Roasting meat on a spit in front of a fire is a process that has been in vogue in this country from the earliest historical times. A miniature, the metal work from which is shown in fig. 3, illustrating cooking in this manner, occurs in a fourteenth-century manuscript in the Bodleian Library, Oxford. The cooking is represented as being carried on in the open, not an unusual practice during the Middle Ages, and shows the spit being turned by a cooking-boy.

Another mediæval method of turning a spit, and one that was still practised as late as 1840, was to utilise the energy of a dog, the animal being trained to run up the inner surface of a drum, a drive being transmitted to the spit by a belt. (See fig. 4.)

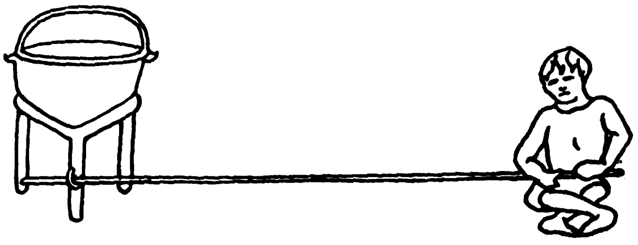


FIG. 3.

In the eighteenth and nineteenth centuries the spits were usually turned by smoke-jacks, which utilised the updraught of the kitchen fire through the medium of a paddle or windmill fixed in the chimney, or else by the clockwork driving gear, an example of which was illustrated in a previous article.

The spit upon which the meat was roasted was constructed of a long shaft of iron, spiked at one end and fitted with a handle at the other, or, if to be used with a mechanical drive, with a wheel. The joint to be roasted was made fast to the shaft by steel prongs, which slid freely up and down the shaft, and were held in the desired position by means of thumbscrews. Spits of this type are shown in fig. 5 A.

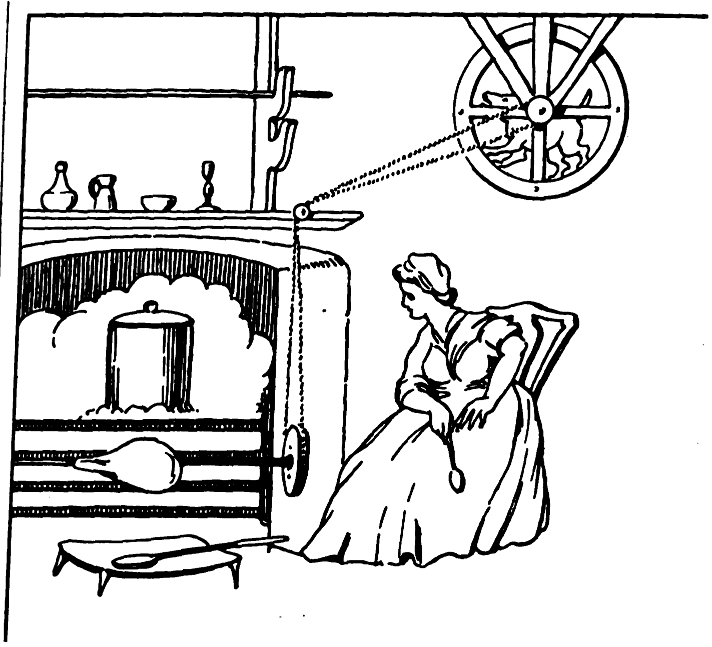


FIG. 4.

A later type of spit has, in place of the prongs, a cage or basket, in which the joint is placed by unscrewing one side; this prevents a joint from being pierced, and is called a basket-spit (see fig. 5 B). These spits would revolve before the fire either upon spitdogs or upon racks specially made for this purpose, of which there are several forms, three of which will be seen in fig. 6 A.B.C.

Ovens for baking bread until comparatively recent times were not constructed on a plan which economised fuel, and the method which is still used in some of the old-fashioned farmhouses and cottages to-day, the origin of which fades into the mists of antiquity, was to have the oven built of brick or stone, top, bottom, and sides, with a door in the front and a chimney. In this oven there would be lighted a large fire of faggots, which would be drawn out after having burned for some considerable time, and, the chimney damper having been closed to prevent the escape of hot air, the batch of bread would be inserted and so be baked by the heat radiated by the fabric of the oven.

This process was all very well when a large quantity of bread was required, but with cottagers when only a few loaves were required at a time less extravagant methods

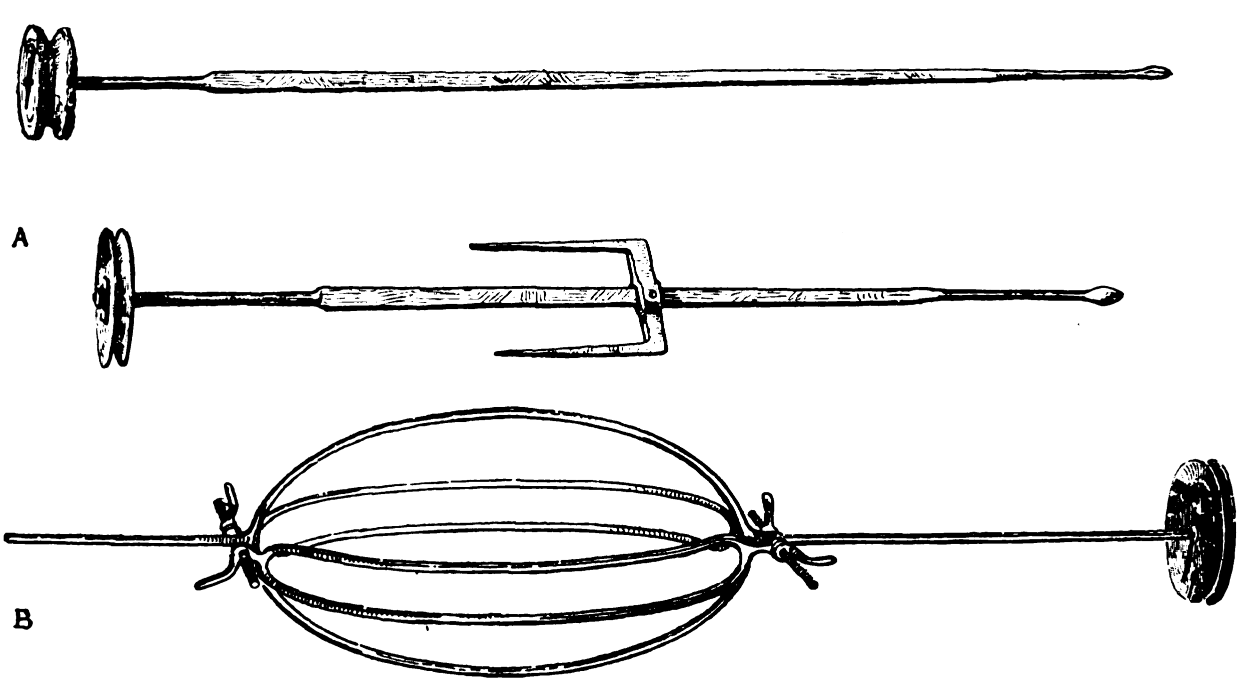


Fig. 5.

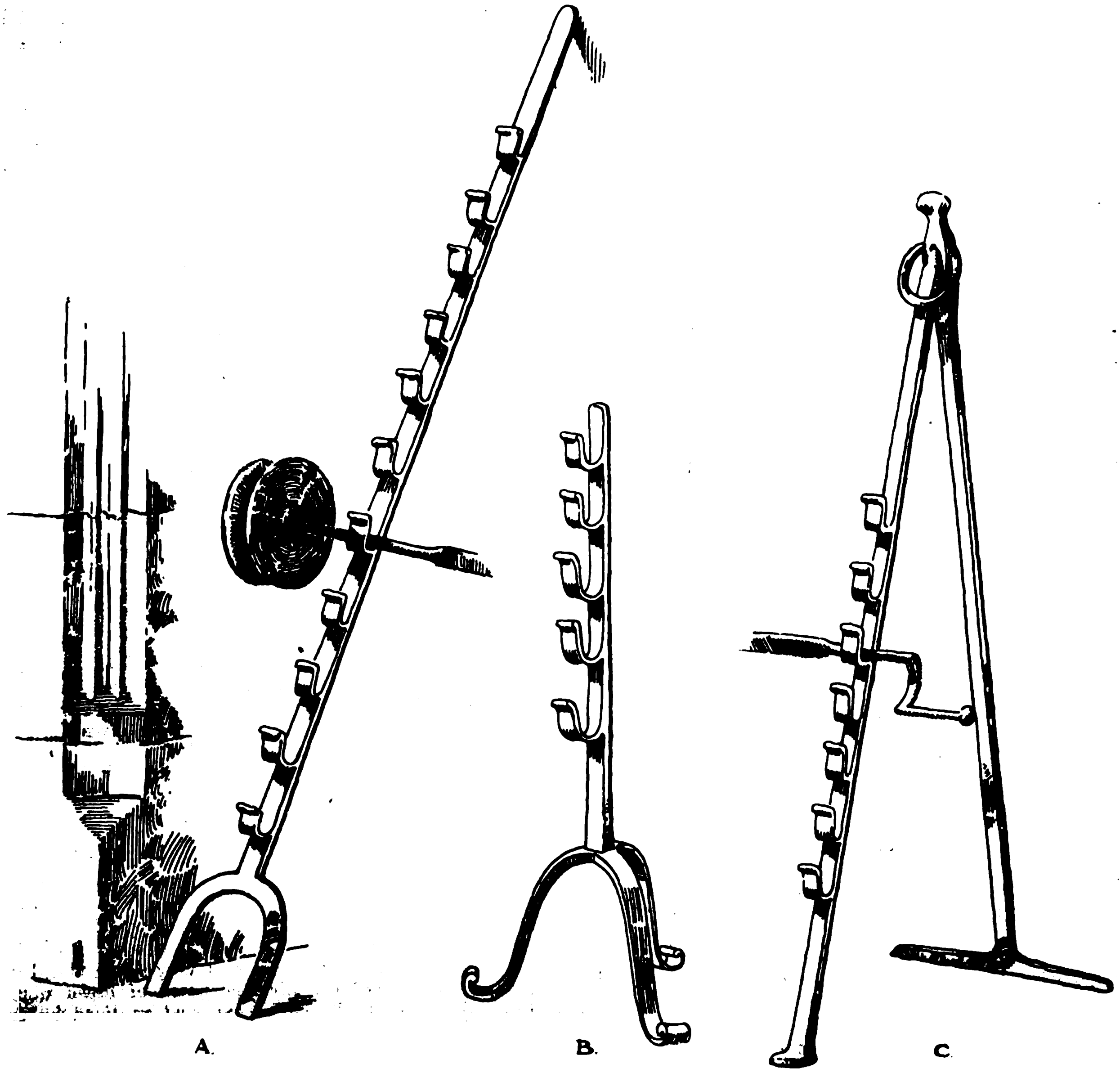


Fig. 6.

were adopted, either by baking bread in cauldrons inverted upon the hearth, which form of loaf was called an "upset" or pot-oven bread, or by toasting the dough in the form of scones or flat cakes, and for this purpose numerous forms of iron toasters were made.

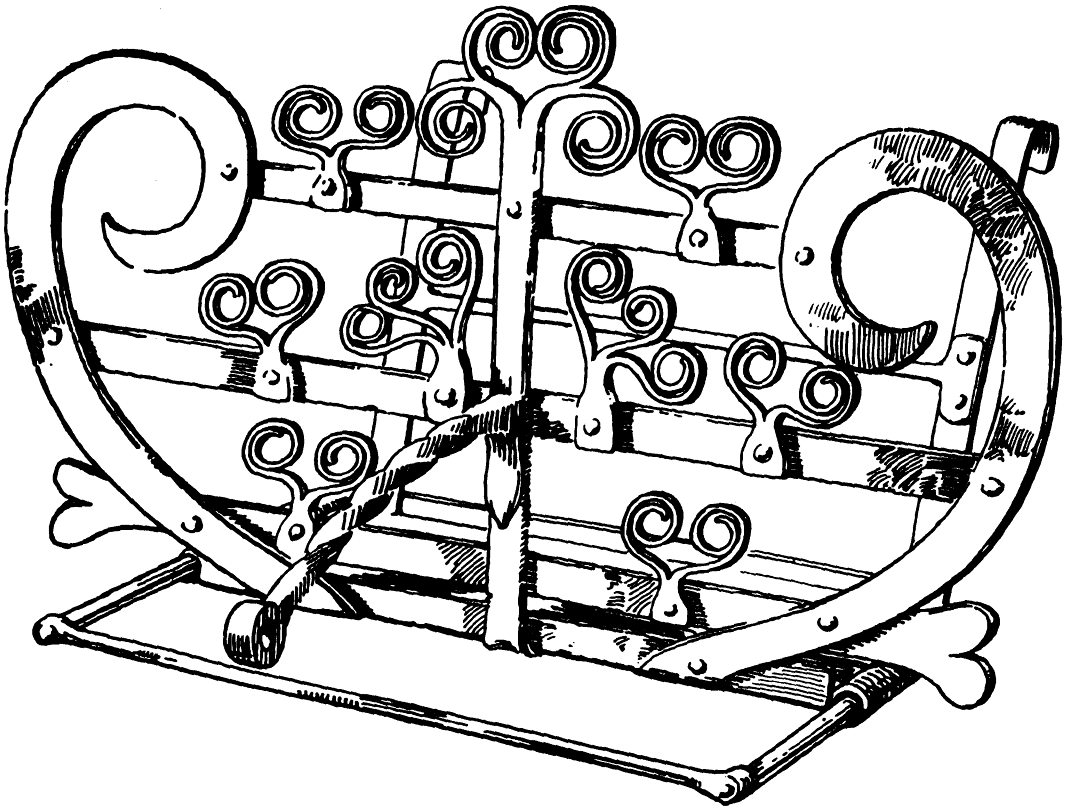


FIG. 7.

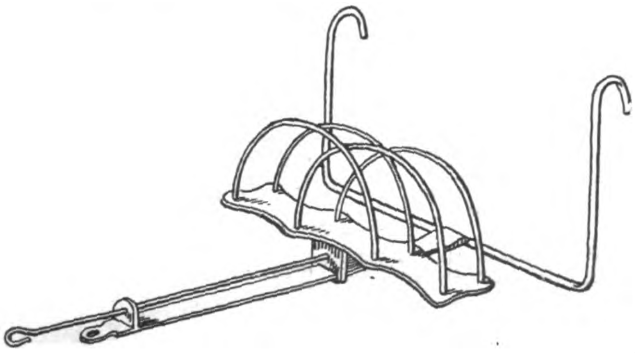


FIG. 8.

The most elaborate form is the large wrought-iron Scotch toaster, which hangs on the bars of a grate and is made to slide to and from the fire. The example illustrated in fig. 7, which is in Mr. John Lane's collection, is unusually large and elaborate, and measures two feet in width. Another form of toaster shown in fig. 8, with a carrier on the toast-rack principle, which can be drawn away from the fire on a slide, is of a later date than the Scotch toaster, although the same principle was also used in early down-hearth implements.

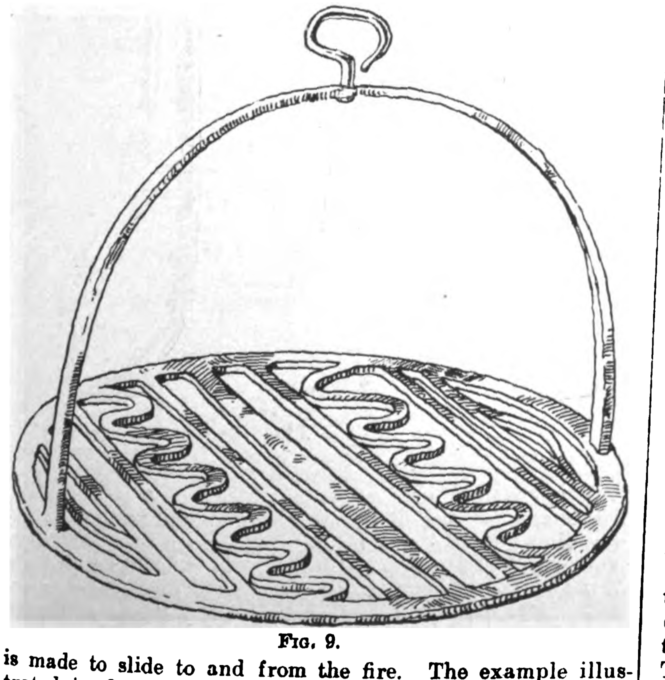


FIG. 9.

Toasters capable of toasting both bread and meat were constructed on tripod stands for use in front of a raised hearth or grate. These usually have a carrier for a plate immediately under the fork or hooks to catch the dripping. Fig. 11 A shows a toaster with the food and plate carrier made to slide up and down independently of one another upon a vertical stem, while the other example (fig. 11 B) has the plate carrier on the top of a trivet with the fork adjustable in both extension and height.

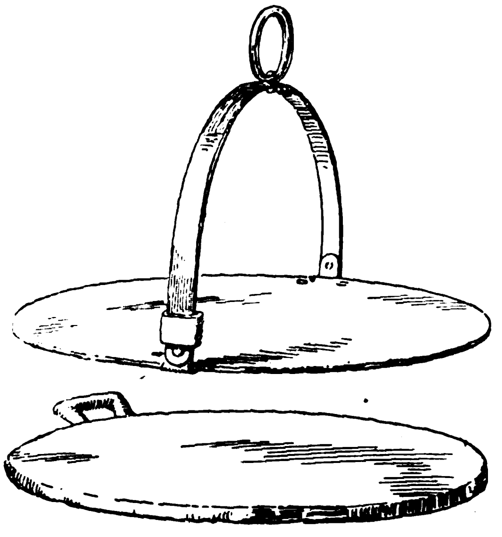


FIG. 10.

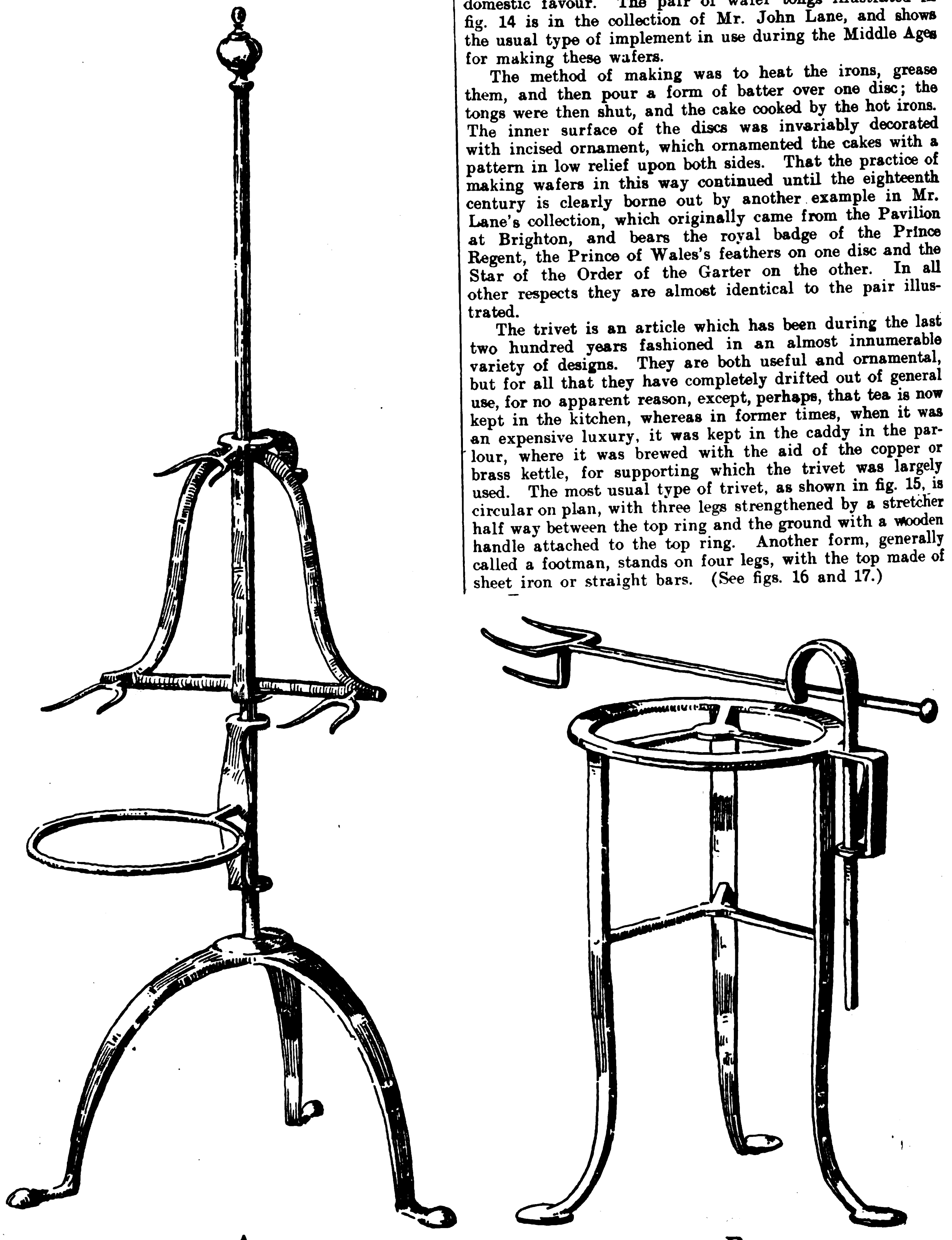
Flat cakes were often made upon branders—a custom quite common in Scotland. This implement, as shown in fig. 9 is similar in form to a gridiron, being circular on plan, with a half-hoop handle, by which it is suspended over the fire from a chain or pot-hook.

Cakes thus baked were called brander bannocks. Similar cakes to the bannock, made of oatmeal kneaded with water only, though sometimes spice and sugar were added to give additional interest, were cooked upon girdle plates (see fig. 10), which differ from the brander inasmuch as they have in place of the open grid a flat cast-iron plate. These implements, which have been in use in Scotland and the North of England for centuries, are still to be found in farmhouses and cottages where an open hearth makes this form of cooking possible. This fact also applies to the large gridirons, some early examples of which are ornamented by scroll-work. Several fine specimens of these are exhibited in the Victoria and Albert Museum, one of which is illustrated in fig. 12.

Wafers are a form of bread that has been in general use for a very long period. In mediæval times they were used by the Church for the Eucharist and in various ecclesiastical festivals, but their use was not restricted to the Church, for, judging by the accounts of mediæval banquets, they appear to have been in very general domestic favour. The pair of wafer tongs illustrated in fig. 14 is in the collection of Mr. John Lane, and shows the usual type of implement in use during the Middle Ages for making these wafers.

The method of making was to heat the irons, grease them, and then pour a form of batter over one disc; the tongs were then shut, and the cake cooked by the hot irons. The inner surface of the discs was invariably decorated with incised ornament, which ornamented the cakes with a pattern in low relief upon both sides. That the practice of making wafers in this way continued until the eighteenth century is clearly borne out by another example in Mr. Lane's collection, which originally came from the Pavilion at Brighton, and bears the royal badge of the Prince Regent, the Prince of Wales's feathers on one disc and the Star of the Order of the Garter on the other. In all other respects they are almost identical to the pair illustrated.

The trivet is an article which has been during the last two hundred years fashioned in an almost innumerable variety of designs. They are both useful and ornamental, but for all that they have completely drifted out of general use, for no apparent reason, except, perhaps, that tea is now kept in the kitchen, whereas in former times, when it was an expensive luxury, it was kept in the caddy in the parlour, where it was brewed with the aid of the copper or brass kettle, for supporting which the trivet was largely used. The most usual type of trivet, as shown in fig. 15, is circular on plan, with three legs strengthened by a stretcher half way between the top ring and the ground with a wooden handle attached to the top ring. Another form, generally called a footman, stands on four legs, with the top made of sheet iron or straight bars. (See figs. 16 and 17.)



A. B

FIG. 11.

The most usual English type of gridiron is rectangular on plan, the early examples being supported on short legs for use on the down hearth, the later types, one of which is shown in fig. 13, having short feet fashioned in the same way as the cran, which enabled them to rest on the top bar of a grate. This example is fitted with a trough for holding the gravy that drains off the grid.

The foregoing articles are but a few of a large number of interesting relics of bygone manners and methods which may often serve to give the finishing touch to a room decorated and furnished on old lines. The "duck's nest" stove, as before mentioned, though now rarely seen in use except in some ancient inn or farmhouse, is quite a serviceable grate, capable of burning both wood and coal, and can now

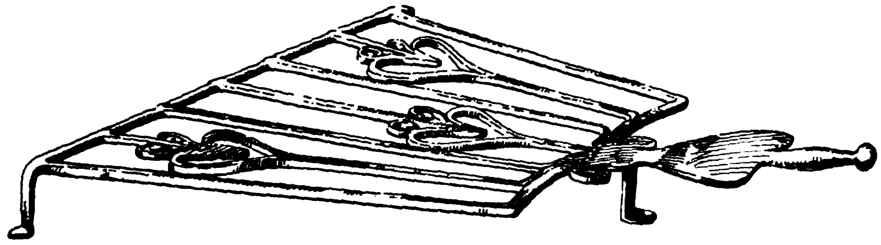


Fig. 12.

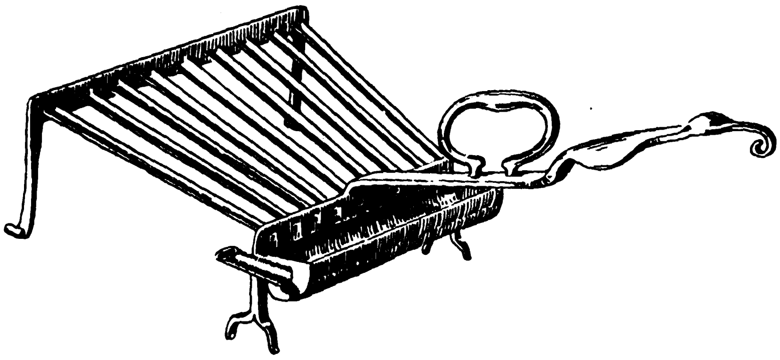


Fig. 13.

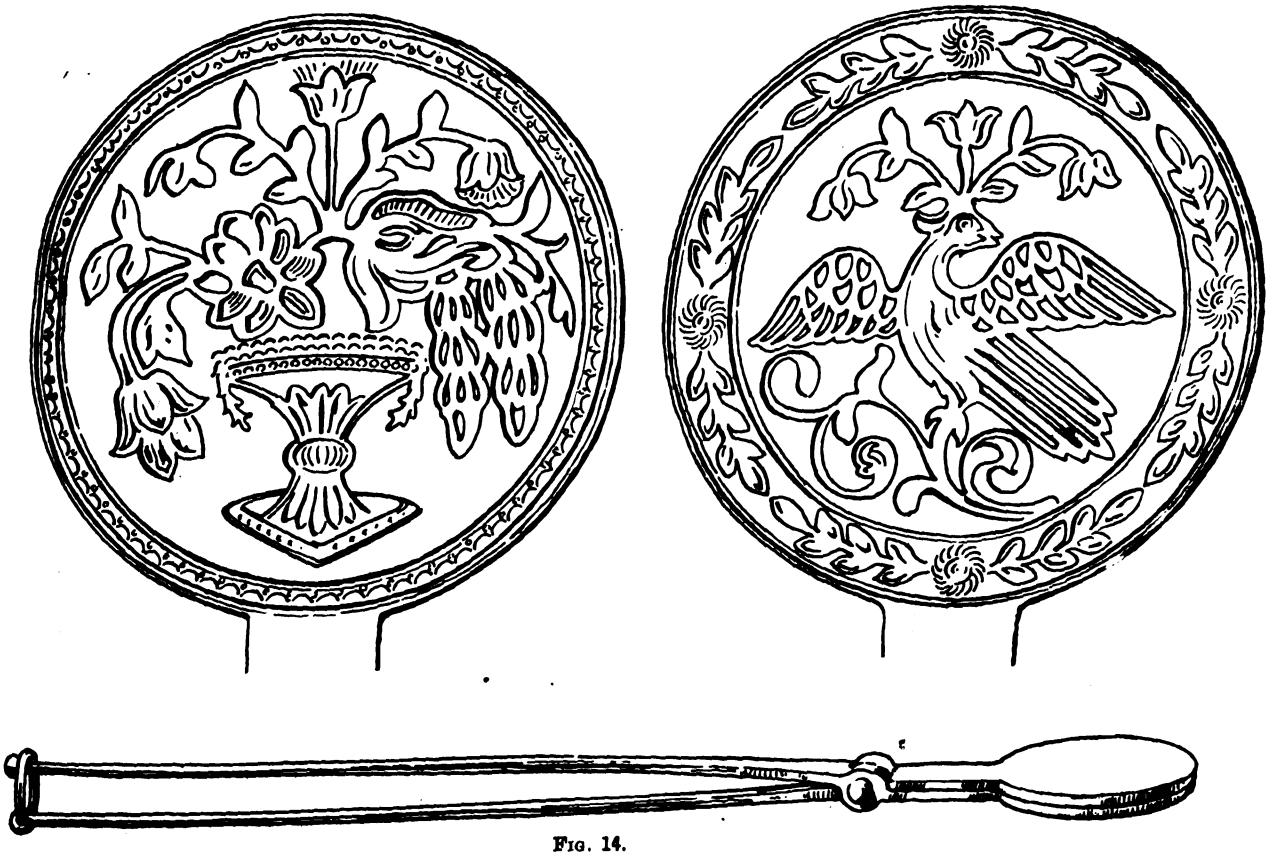


Fig. 14.

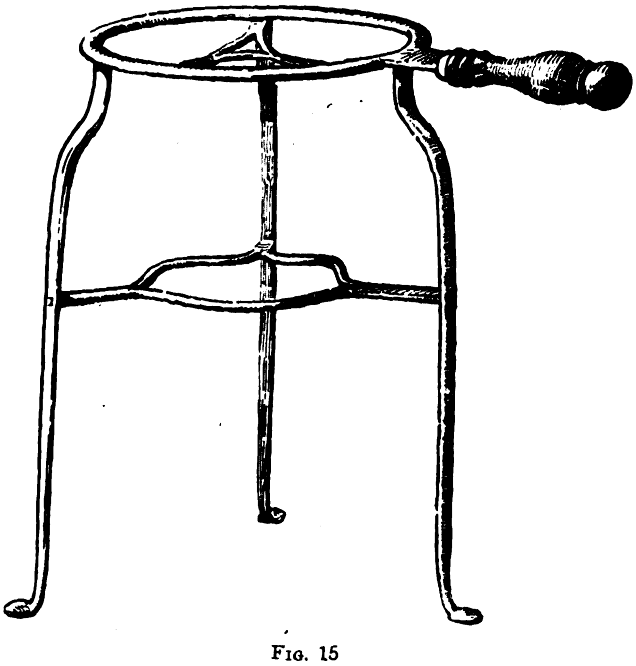


Fig. 15

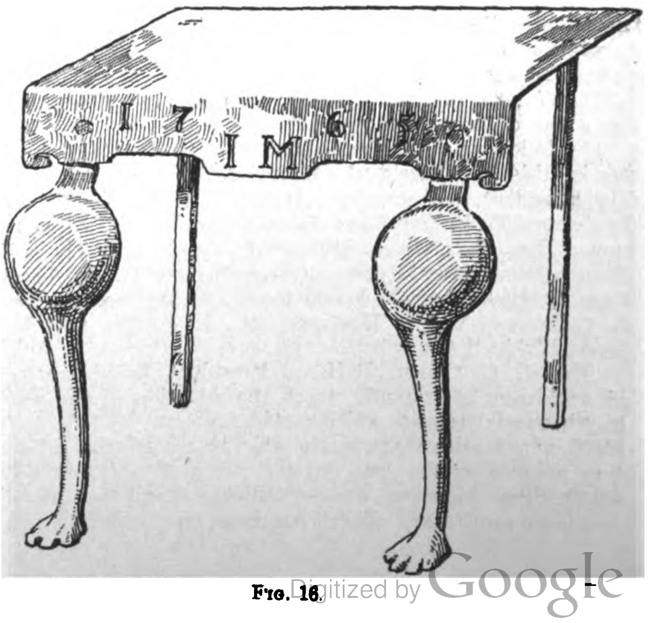


Fig. 16.

be picked up for a few shillings at marine stores, especially in Sussex and Kent. The advantage of this form of grate to collectors of old domestic metal work is that it permits other articles—such as a crane, fire-back, trivets, &c.—to be exhibited in the correct position.

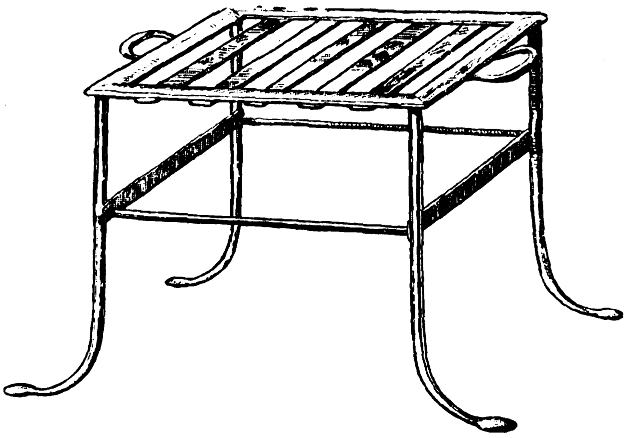


Fig. 17.

The beauty of these old wrought-iron domestic bygones is not fully realised until they are cleaned so that the true colour of the metal is visible, not burnished, but brought to an old "armour-bright" finish. This can be maintained by warming the metal and rubbing the surface over with a piece of beeswax.

DESCRIPTION OF ILLUSTRATIONS.

Fig. 1.—Cran. In Mr. L. G. Russell-Davies' collection in the Brighton Museum.
Fig. 2.—Duck's nest. Taken from a photograph by Mr. Edward Dean.
Fig. 3.—Brandreth and spit. From a miniature in MS. Bodleian 264.
Fig. 4.—Turnspit. After a drawing by Rowlandson.
Fig. 5.—A. Common type of prong spit. In the writer's collection. B. Basket spit. In the collection of Mr. L. G. Russell-Davies in the Brighton Museum.
Fig. 6.—Standing racks, A.B.C. Drawn from illustrations.
Fig. 7. Scotch toaster. In the collection of Mr. John Lane.
Fig. 8.—Toaster. In the collection of Mr. L. G. Russell-Davies in the Brighton Museum.
Fig. 9.—Brander. In the National Museum of Antiquities of Scotland.
Fig. 10.—Girdleplate. In the writer's collection.
Fig. 11.—A. Three-legged toaster. In the collection of Mr. J. F. Garrod. B. Toaster. In the ironwork collection at Victoria and Albert Museum.
Fig. 12.—Gridiron. In the ironwork collection in the Victoria and Albert Museum.
Fig. 13.—Gridiron. In the collection of Mr. Maurice Escare.
Fig. 14.—Wafer tongs. In the collection of Mr. John Lane.
Fig. 15.—Trivet. The property of Miss E. Perry.
Fig. 16.—Footman. In the collection formed by the late Lady Dorothy Neville. In the Victoria and Albert Museum.
Fig. 17.—Footman. Mr. L. G. Russell-Davies' collection in the Brighton Museum.

ARCHITECTURAL ASSOCIATION OF IRELAND.

The seventeenth annual general meeting of the Architectural Association of Ireland was held at the rooms of the Association, 15 South Frederick Lane. Professor W. A. Scott, A.R.I.B.A., outgoing President, occupied the chair, and there was a large attendance.

The following officers and committee were elected for the session 1914-15: President, Harry Allberry, A.R.I.B.A.; Vice-President, Frederick Hayes, M.R.I.A.; Hon. Treasurer, T. F. Strahan; Hon. Librarian, T. L. Cullimore; Hon. Secretaries, Hubert J. Lundy and Louis F. Giron; Committee, Messrs. J. Geoghegan, H. G. Leask, Page L. Dickinson, J. M. Mitchell, C. W. Beckett, Geo. L. O'Connor, W. S. Keatinge, M. J. Burke, and Professor W. A. Scott.

Mr. R. C. Orpen, R.H.A., President Royal Institute of Architects of Ireland, moved the adoption of the seventeenth annual report, which stated that:—

Your committee are again able to record the satisfactory progress of the Association.

The new members number thirteen, and one member has been reinstated. There has been one resignation, and three members have been struck off the roll by the operation of By-law 12. Four candidates are waiting election. The total membership now stands at 111.

The average attendance at the general meetings was thirty-five—a figure below that of last session. The committee note with regret that the attendance at lectures of a practical, as opposed to a historical or purely architectural character, is uniformly low. In the absence of improvement in this respect, lecturers cannot fairly be invited to prepare papers of a technical and highly educational nature. The ordinary meetings were held on Thursday instead of on Tuesday, to facilitate the attendance of members who were studying at the Technical Institute; but, under the circumstances, the question of reverting to the former day will be considered.

The report of the sub-committee appointed to deal with the inauguration of a system of class work, referred to in the preceding annual report, was received early in the session. As a result, classes on building construction, architectural history and design were formed on a broader basis than hitherto. The construction classes were held at the Technical Institute, Bolton Street; the other classes were held in our own lecture-hall. Under the able guidance of Mr. Leask, who undertook the heavy work in connection with the winter programme covering thirty-two class meetings, the scheme has proved satisfactory—fifteen students having joined, of whom eleven took up the whole course. Examinations in each subject have been held. There is reason to believe that some, if not all, of the classes will be re-established during the coming session, as many members desire to proceed with an advanced course. The question of mutual co-operation between the School of Art and the Association in reference to instruction on special subjects was postponed for further conference next session.

The Technical Museum does not increase in scope as rapidly as your committee would wish, and it is regrettable that manufacturers do not more generally avail themselves of the opportunities offered of keeping the members in touch with materials and other requirements for building purposes.

The Employment Register continues to be used by the members when occasion arises, and has proved of service.

The annual prize competitions attracted more than usual attention. Four sets of drawings were submitted for the Institute prize, and were assessed by Mr. C. H. Ashworth, who placed those of Mr. A. A. Murphy first. Three sets were submitted for the President's prize, those of Mr. W. A. Dixon being placed first by the assessor, Mr. T. J. Cullen. One set was submitted for the Downes' bronze medal from Mr. W. N. Spence; the assessor, Mr. G. P. Sheridan, considered the drawings to be of sufficient merit to entitle them to the medal. The prizes in these competitions have, therefore, been awarded to the three members named.

The annual exhibition of members' work was held from February 9 to February 23. The exhibition of R.I.B.A. drawings was also held in the Association lecture-hall, under the auspices of the R.I.A.I. Owing to transit difficulties, the promised exhibition of London A.A. students' drawings had to be postponed, and will be held during the summer.

During the year the London Architectural Association held an exhibition of Ecole des Beaux-Arts drawings at their home in Tufton Street, which attracted much attention. Your committee deemed this an excellent opportunity for obtaining the drawings for exhibition in Dublin, and, on being approached, the Council of the London A.A. readily made all the arrangements necessary to attain this object. The drawings were accordingly placed on view for about a week in June last in the Supper Room of the Mansion House, kindly lent by the Lord Mayor of Dublin. The exhibition was opened by the French Consul, and during its continuance a conversazione was held. Neither the profession nor the general public supported the exhibition to the extent that was hoped for, and a heavy financial loss accrued, somewhat diminished by a donation kindly given by the Royal Institute of the Architects of Ireland.

Your committee have met eighteen times, and have considered a scheme for increasing the country membership, which has hitherto grown but slowly. The possibility of inaugurating a working arrangement with the London Architectural Association has also been under review, by which members of the latter body resident in Ireland will receive local advantages by reason of such membership, and our own members will receive reciprocal advantages while resident in England. It is not possible at the moment to detail the proposals. In this connection it is a matter for regret that the proposed visit of the London Association to Dublin, for which due arrangements had been made, and to which our members looked forward with much pleasure, had to be abandoned. It is to be hoped that the opportunity of welcoming the Society to Ireland will not be long deferred.

A favourable opportunity having arisen of asking Mr. Goodyear, the well-known authority on architectural refinements, to visit Dublin and deliver a series of lectures on his theories, your committee, in conjunction with the Councils of the R.I.A.I. and the Classical Association of Ireland, issued a joint invitation to Mr. Goodyear, which was cordially accepted. A committee of welcome has been formed, to which your President and hon. secretaries have been elected, and a programme has been arranged, including an exhibition of photographs taken by Mr. Goodyear, a conversazione, and three lectures. These functions will take place during the month of May, on dates which have already been announced.

During the year the Council of the R.I.A.I. received a deputation from the Association in reference to a possible co-relation between the A.A. educational system and the studentship examinations of the former body. As a result, the Council of the R.I.A.I. consented to reduce the entrance fee of candidates who had satisfactorily passed through the Association classes.

The report was adopted.

The hon. treasurer's report was adopted on the motion of Mr. J. H. Webb, seconded by Mr. A. Jones.

The prizes having been distributed, it was announced that the annual excursion would be held in July, at London and Oxford.

The outgoing President then delivered his valedictory address, in the course of which he spoke of the encouraging work achieved by the classes and clubs connected with the Association, and said everything pointed to still more extensive work in the future. In the coming session there would be ample opportunity of visiting many important new buildings now in course of construction in Dublin. In the course of references to the question of registration of architects, he said their own Royal Institution had declared in favour of it, and it really was a very pressing question in this country. Referring to the forthcoming Civic Exhibition, he said their Association was supporting it, and their President and Hon. Secretary had been appointed to represent the Association on the executive. The exhibition would be an event of great interest, and it was to be hoped that a comprehensive scheme for planning in Dublin would be evolved.

Mr. H. Allberry, the incoming President, then took the chair and thanked the members for the high compliment paid him by giving him a second year of office. This was the first occasion on which that had been done in the history of the Association.

The proceedings then closed.

THE SURVEYORS' INSTITUTION.

On the 7th inst. an important conference between representatives of the Universities, the Public Schools, and the Council of the Institute was held, with the object of ascertaining whether any steps might usefully be taken in order that the usefulness of the Institution scholarships might be extended to a wider circle of competitors.

Four scholarships of a value of from £50 to £80 per annum are offered yearly, tenable at Oxford, Cambridge, and the other Universities in Great Britain, and it had been suggested that the conditions attaching to them were such as unnecessarily to restrict competition for them.

The following is a list of the representatives attending the conference:—

Universities.

Oxford.—Rev. G. B. Cronshaw, Queen's College, and Professor Somerville, Head of the School of Rural Economy.

Cambridge.—Mr. W. L. Mollison, Clare College, and Professor Wood, School of Agriculture.

London.—Professor A. H. Jameson.

Durham.—Professor Gilchrist.

Manchester.—Principal T. J. Young.

Birmingham.—Professor Lea.

Liverpool.—Professor J. Wemyss Anderson.

Wales.—The Registrar, Professor J. Mortimer Angus.

Schools.

Westminster School.—The Headmaster, the Rev. J. Gow, Litt.D.

St. Paul's School.—The High Master, the Rev. A. E. Hillard, D.D.

Haileybury College.—The Headmaster, Mr. F. B. Malin.

University College School.—The Headmaster, Dr. H. J. Spenser.

Owen's School.—The Headmaster, Mr. R. F. Cholmeley.

Reigate Grammar School.—The Headmaster, Mr. F. S. Orme.

Bedford Grammar School.—Mr. J. P. Kirkman.

Dulwich College.—Mr. Russell.

Whitgift Grammar School.—The Rev. W. Burton.

The Surveyors' Institution.

Mr. Howard Martin (Past President and Chairman of the Education Committee), Mr. H. Chatfeild Clarke (President-elect), Mr. Andrew Young, Mr. John Willmot, and Mr. J. H. Sabin (Members of Council), and Mr. A. Goddard (Secretary).

The conference lasted an hour and a half, and many valuable suggestions were made, which will be embodied in a report to the Council.

In the evening the chairman entertained the members of the conference to dinner at the Whitehall Club, Sir Thomas Elliott, K.C.B., Sir Ellis Cunliffe, and Mr. Cecil Walsh, K.C., being among those invited to meet them.

SHEFFIELD SOCIETY OF ARCHITECTS.

The report of the Sheffield Society of Architects and Surveyors was presented at the annual meeting last week. In it reference was made to the by-law dealing with open spaces in connection with domestic buildings. The Council stated that they submitted draft proposals for a revision of the by-law, and suggested that it should embody the following recommendations:—

That the requirements with regard to open spaces at the rear or side of buildings should apply only to dwelling-houses used wholly or principally as places of residence by day and night; that when a dwelling-house is erected upon any upper storey of a building the open space required by the by-laws shall be provided upon the level of such storey; and that in all cases the distance across the open space shall be governed by the height of that portion of the building which immediately abuts upon this open space.

These suggestions were possibly too much at variance with the model by-laws of the Local Government Board, and the sub-committee of the City Council had not been able to recommend their adoption in their entirety. Until the matter was settled, the Council had resolved that the requirements should not be enforced in the case of buildings other than dwelling-houses, but the benefit of this could only be regarded as temporary, pending a satisfactory alteration of the actual by-law.

The report also stated that some of the requirements of the Corporation with regard to engine chimneys appeared to be unduly vexatious and wasteful, and involved a much greater cost than would be incurred by the erection of a similar structure in other parts of the country. The President (Mr. A. F. Watson) was congratulated upon his election to the Council of the Royal Institute of Architects, and the probability that he would be elected for another year, and the value of his work was cordially recognised. Congratulations were also extended to Mr. G. A. Booker, a student member, upon having passed the intermediate examination of the R.I.B.A., and to Messrs. H. B. S. Gibbs and H. B. Leighton upon passing the final examination. The theses submitted by the last two gentlemen gained the mark of distinction, an honour which was achieved by only five candidates altogether. This was exceedingly creditable to them, and showed the thoroughness of the training obtained in the Department of Architecture at the University, where both of them passed through the full courses of study. The Society has at present 115 members, and a balance in hand of £62.

The retiring officers were re-elected as follows: Messrs. A. F. Watson (President), C. B. Flockton (Vice-President), R. W. Fowler (Treasurer), J. R. Wigfull (Hon. Secretary), W. G. Buck, F. E. P. Edwards, J. R. Hall, C. F. Innocent, H. L. Paterson, H. I. Potter, C. S. Sandford, E. Winder, and F. H. Wrench.

A selection from the prize drawings of the R.I.B.A. for this year was on exhibition at the meeting.

LEEDS AND YORKSHIRE ARCHITECTURAL SOCIETY.

THE annual general meeting of the Leeds and Yorkshire Architectural Society was held in the Leeds Institute, Cookridge Street, on the 7th inst. Mr. A. E. Kirk, A.R.I.B.A., retiring President, was in the chair

Mr. William Whitehead, A.R.I.B.A., the Hon. Secretary, read the annual report for the year 1913-14—the thirty-eighth of the Society's existence—which showed that the membership had increased in a gratifying way. Arrangements had been made for practising architects to visit the classes in architecture at the Leeds School of Art from time to time during the session, as it was believed that would increase the usefulness of the classes. The prizes given by the Society had been awarded as follows: Silver medal and President's prize for measured drawings, Norman A. Blackburn; consolation prize, R. L. Palmer; design competition—1, L. Foster; 2, H. Beard; sketching prize, L. A. Elsworth; Sketching Club prizes for black and white and detailed studies, L. A. Elsworth; Holden prize, Eric A. Ramsden; architectural history prize, C. B. Chadwick. It had been arranged to hold the design competition in two classes in future—junior and senior.

The Hon. Librarian's report showed that during the year one volume had been presented by the author, and a number of books on architectural subjects, to the value of over £20, had been purchased. The annual statement of accounts disclosed an income for the year of £242 15*s.* 9*d.*, with expenditure £123 1*s.* 4*d.*, leaving a balance in hand of £119 14*s.* 5*d.*

The reports and balance-sheet were then unanimously adopted, and the retiring office-bearers heartily thanked for their services.

Some discussion took place as to the extent to which the Society's library was covered by insurance. The books, which are worth over £200, were placed some time ago in the City Reference Library by arrangement with the City Librarian. It was decided to inquire how far the insurance paid for by the Society covered the safety of the books, and how far the responsibility of the City Librarian extended.

The following office-bearers for the ensuing year were elected: President, Mr. G. F. Bowman; Vice-Presidents, Mr. J. F. Walsh and Mr. C. B. Howdill; Hon. Treasurer, Mr. R. Fielding Farrar; Hon. Librarian, Mr. G. J. Coombs; Hon. Secretary, Mr. William Whitehead; members of Council, Messrs. W. J. Morley, G. W. Smithson, J. C. Procter, J. E. Braithwaite, W. A. Jones, and Douglas Bowman.

A meeting of the Sketching Club was afterwards held to arrange a programme of excursions to places of architectural interest for the summer months.

THE ROYAL ARCHÆOLOGICAL INSTITUTE.

THE spring meeting of the Royal Archæological Institute was held in London on Thursday of last week, when visits were paid to four churches—viz., to St. Bartholomew the Great, Smithfield, and St. Helen, Bishopsgate, in the morning; and St. Catherine Cree and Southwark Cathedral Church in the afternoon.

St. Bartholomew the Great.

The history of St. Bartholomew's was given by Mr. E. A. Webb, F.S.A. This Austin Canons church was founded for thirteen canons by Rahere in 1123, being one of the earliest of that important order in England. Rahere, its first canon and prior, died twenty years later, and his body lies beneath the elaborate fifteenth-century tomb on the north side of the presbytery, the effigy of which is clothed in the Augustine habit of that later time; the tomb was opened in 1864. The hospital which he also founded hard by is more active now than ever it was. Rahere laid his church out on a plan which was rather going out of fashion—that is to say, with a large ambulatory—though Malmesbury was another instance of it. Much of what remains may be considered as the founder's work, the exception being the crossing and transepts, the single remaining bay of the nave, and the Lady chapel. Whether that original apse included a clerestory is uncertain. About the middle of the thirteenth century the nave of ten bays, or of seven west of the rood screen, was completed. About 1336 the present Lady chapel was built. In 1539 the house was surrendered to Henry VIII. The nave, with the three chapels on the north side and the north transept, were then destroyed; while the Lady chapel, the whole of the monastic buildings, the Close and Cloth Fair were sold to Sir Richard Rich, then Speaker of the House of Commons, in whose family they remained until early in the nineteenth century. The choir and one bay of the nave was reserved for ecclesiastical use. Portions of the property were let out for business purposes. The Lady chapel, for example, was used at one time as a printing office, and here Benjamin Franklin was employed during his first visit to London; later it was occupied by a fringe manufacturer. In the eighteenth century the south triforium served as a Nonconformist school; it was reopened to the church in 1890. The north transept was, until 1893, a blacksmith's forge. A restoration of the fabric, commenced in 1863, was resumed in 1885 under the direction of Sir Aston Webb, R.A., and is still in progress. The new work, while harmonising with the old, is differentiated from it, and can be recognised without difficulty. The latest work is on the site of the diminutive St. Stephen's Chapel on the south side; here within the past three months the foundations have been discovered of a curious double apse; new walls are being constructed inside the circuit of the foundations of the old. Other works carried out by Sir Aston Webb include the restoration of the Lady chapel and a small portion of the cloister, the re-roofing of the church, the lowering of the floor, a conjectural rearrangement of the Norman apse; the rebuilding of the two transepts and the north porch.

Mr. C. R. Peers briefly described the architecture.

St. Helen, Bishopsgate.

The Benedictine nunnery of St. Helen was founded between the years 1204 and 1216 by William, son of William the goldsmith, on a site adjoining the pre-existing parish church. To this date belongs the main structure of the nuns' church which forms the northern part of the present building. The southern part, forming the parish nave and choir, were probably rebuilt about the middle of the thirteenth century, when also the south transept was added. The arcade between the parish nave and the nuns' church was inserted about 1475 in consequence of a bequest of Sir John Crosby of 500 marks. The priory was dissolved in 1538, when the nuns' choir, formerly shielded by a screen, was thrown open to the parish church. In the north wall of this choir is a remarkable Easter sepulchre with a six-light squint below. St. Helen's is best known for its monuments, and of these a detailed account by Mr. H. F. Murrell, A.R.I.B.A., was given in our columns as recently as July 26, 1912.

St. Catherine Cree.

A third London City church that escaped the Great Fire to be visited was St. Catherine Cree (or Christ). This was described by Mr. Philip Norman, LL.D., V.P.S.A. Of the original thirteenth-century church little or nothing remains, and the present building dates from 1628. It consists of a continuous nave and chancel, with aisles, from which it is separated by a Corinthian arcade without an intervening entablature. Above is a clerestory and a flat groined ceiling bearing shields of arms. The building has often been ascribed to Inigo Jones. Mr. Reginald Blomfield, however, states that "there is no evidence beyond a vague tradition that he had anything to do with this church; the south doorway is the only detail that bears any resemblance to his manner." The clerestory windows have three lights, with cinque-foiled heads, the centre light being stepped up above the two side lights. Two notable pieces of furniture are the small marble font and the eighteenth-century Communion Table. The finest monument is that to Sir Nicholas Throckmorton, Ambassador to France, chief butler of England, and a chamberlain to the Exchequer, who died in 1570-1.

Southwark Cathedral Church.

This building is too well known to our readers to call for any description. Mr. W. H. Godfrey acted as guide, and conducted the party round. He pointed out that it, like Salisbury Cathedral, practically belongs to one period.

The church was described and fully illustrated in *The Architect* Cathedral series, Vol. lxxvii.

MR. E. SWINFEN HARRIS, F.R.I.B.A., has, through age and breakdown in health, given up his London office, 40 Chancery Lane, and requests that, in future, letters, &c., may go to him at his house, Stony Stratford. He has had an office in town continuously since he commenced to practise in Duke Street, Adelphi, now nearly half a century ago.

MESSRS. J. BERRY & SONS, Huddersfield, were the architects for the new Sunday schools and parish hall at Marsh (in connection with Holy Trinity Church), which were dedicated last week by the Bishop of Wakefield. The cost of the building and furnishing has been about £5,000.

LONDON COUNTY COUNCIL.

CONTROL OF VACANT SITES.

The powers of the London County Council to prevent the creation of nuisances on building sites in the Metropolis were briefly alluded to at Tuesday's meeting by Mr. J. D. Gilbert, who drew attention to the fact that on a cleared site in Borough High Street the house-breakers had established an old brick-crushing plant for the purpose of making concrete or some other mixture. Mr. Gilbert asked the chairman of the Establishment Committee whether the Council had any powers under the Public Health Acts, or any other Acts, to prevent a nuisance arising from the spread of dust and grit in the neighbourhood, which was largely residential. The local feeling, added Mr. Gilbert, was strongly against this industry being dumped in their midst.

Mr. O. Warburg (chairman of the committee) promised to have inquiries made, but said he was advised that any powers that might exist for dealing with questions of this kind were only exercisable by the Borough Council concerned, to whose attention he would bring the complaint.

THE ARCHITECT AND STRUCTURAL ENGINEERING.*

By William E. A. Brown, A.R.I.B.A., M.C.I.

An architect was necessarily a structural engineer, with the addition of the artistic sense and skill to clothe the structural forms with beauty of line and contour, and to so arrange mass and void into one harmonious whole, studying the great lessons of the past, and carrying on the architectural traditions of ancient Greece and Rome down through the Middle Ages and on through the Renaissance. All would agree that the architects of such buildings as the church of Santa Sophia at Constantinople, St. Peter's and the Pantheon at Rome, the Duomo of Florence, and, to come down to more recent times, Sir Christopher Wren's masterpiece in London, and Bentley's last great work of Westminster Cathedral, were structural engineers.

Were not all our cathedrals, the delight of artists and lovers of the beautiful, wonderful examples of architects' engineering skill—majestic buildings with vaulted roofs poised on slender pillars, and held in position by flying buttresses, each thrust met by a counter-thrust, all combined so as to keep the whole structure in a stable condition?

Structural engineering included not only steelwork used in buildings, but also all forms of construction, whether in brick, stone, timber or concrete; and in designing buildings and other structures the architect was called upon not only to exercise his artistic ability, but also so to plan and arrange the various materials to carry safely, in addition to their own weight, all superimposed loads and external forces so that the whole might remain perfectly stable.

No doubt the Council of the Concrete Institute had this in mind when it decided to enlarge the scope of the Institute by adding structural engineering, and not to confine itself to one branch only—*i.e.*, concrete and reinforced concrete. The wisdom of this was manifest by the large increase in the membership as well as by the greater attendance at the meetings.

It was the architect and the architect alone, contended Mr. Brown, who should determine the position of all main girders, stanchions and supports. In many buildings it was impossible to proceed with the design until this was done. In some cases it was the roof which makes the determining factor in planning a building—whether the spans should run from north to south or east to west. In others it would be such a feature as a dome; for example, how could Wren have planned St. Paul's unless he knew beforehand how he was going to support that great and glorious crowning feature of his design? That building could not have been erected had Wren simply made a drawing and handed over the structural work to someone else to deal with; or had that course been adopted, the resulting design would have been different to that made by the architect.

There was no doubt that tradesmen and others did not realise the importance of having a properly qualified professional man to advise them. They were led to fondly imagine they were saving a large sum in fees, until they found by experience their folly had cost them more. It was not his intention or wish to belittle in any way the status of the consulting engineer, as he occupied a very important position in the building world. But what he did wish to emphasise was that it was the architect's duty to determine the position of all girders and supports in the buildings he designed. He should also be able to make the necessary calculations for the steelwork in, at any rate, the smaller buildings under his control. Architects often did employ consulting engineers to do the calculations for the steelwork—first for lack of time to do it themselves, and often because in modern buildings the steelwork was of so complicated a character that it was necessary to do so; but that did not alter the question of the position of the architect in the matter.

A good deal of stress had been laid upon the question of whether the steelwork should be designed and quantities taken out by the consulting engineer before being sent to the constructional firms for estimates, or whether these firms should be allowed to do the calculations themselves. For contracts involving a large amount of steelwork of a complicated character the author agreed that a consulting engineer should be appointed by the architect; but there were many smaller works where this was not necessary, nor would the outlay on the building work warrant the expense incurred. It was quite satisfactory, given certain conditions, for the architect to send the drawings to several firms of engineers and let them make their own calculations and quantities. But to enable the various contractors to estimate on the same basis the following information must be given to each:—

1. Plans of all floors showing the lines of all main girders and the positions of stanchions and columns; also a section or sections and outline elevations must be given.
2. The loads that each floor has to carry and whether live or total loads.
3. Whether British or foreign steel is to be used, and whether the L.C.C. Regulations under the General Powers Act, 1909, are to be complied with. If not, the stresses should be specified that are to be worked to.
4. Whether price is to include for hoisting and fixing, or only for steelwork delivered to site.
5. If it is to be delivered unpainted, painted, or oiled, and if painted with what materials, and that all scale and rust must first be removed.
6. Workmanship, whether connections are to be riveted or bolted, and, if the latter, whether ordinary bolts will be allowed.
7. Whether the price is to include 10 per cent. profit for the builders or only 2½ per cent. cash discount.

There was a diversity of opinion as to whether dead loads and superloads on a floor should be kept separate in making the calculations, or whether a load to include the dead weight of the floor itself should be taken. The author's practice was to work to the latter, as the calculations were much simpler and the liability of error was materially reduced.

One must, of course, take into consideration the point loads which often occurred from partitions, &c. This was often neglected by competing firms of engineers, but some of the concrete partition blocks on the market were surprisingly heavy.

Another matter that he sometimes had to argue with the steel contractors was the central loading on girders carrying walls with openings and narrow piers between. Some engineers assumed that the loads were evenly distributed over the span through the brickwork below the window sills. If the sills are very high up this may be so, but in many cases the sills are only 12 in. or 18 in. above the girder, and, in his opinion, the loading in such a case should be considered as a point load, or as a distributed load over a length of the girder equal to the width of the pier.

In calculating the loads on stanchions, &c., Mr. Brown mentioned that he did not take advantage of the reductions allowed by the 1909 Act. He did not think it advisable, as buildings were often loaded to a greater extent than was allowed for. How often was an architect told that the floors will never have to carry more than a certain weight, and on going over the premises, when occupied, he is surprised to find these loads greatly exceeded!

When the various estimates and plans showing the steelwork have been received the architect should carefully go through each set and compare the sections of the girders, &c., and make rough calculations to check the sizes and ascertain if the allowable stresses had been adhered to. It was also necessary to check the depths of the joists in relation to the span, otherwise undue deflection might occur.

After the plans had been gone through the architect was in a position to determine which estimate he would accept. When giving the general contractor instructions to accept the estimate it was important to state that all dimensions must be taken *from* the site and the whole of the work carried out to the architect's satisfaction, detail drawings of all parts to be submitted to him for approval. When the cleared site had been measured with steel tapes and all angles carefully triangulated it should be possible for engineers to set out and scale off the lengths of the various parts.

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* **Summary of a Paper read at the forty-ninth ordinary general meeting of the Concrete Institute at Denison House, Westminster, S.W.**

The connections and workmanship were, in the author's opinion, very important matters to be considered, and, as far as his experience went, they did not always receive the attention that should be given them. Of what use was it to have a strong joist or stanchion if the cleats under the joist or the joints in the stanchion were not properly designed, or, if the design is correct, the connections themselves were badly made? It was a constant practice to use ordinary bolts to take shear, such as the ordinary ¾-in. bolt in a 13/16-in. hole, the *shank* being threaded to within ⅜-in. of the head. He had examined connections made in this way, and *often*, out of five bolts in the connection, four of them could be taken out with the fingers when the nut was removed. What amount of bearing area did one get on the threaded end of the bolt, supposing that the bolt was bearing on the plates? The bearing surface consists only of a series of knife edges. If bolts must be used *in* shear then the holes must be carefully drilled concentric through all the plates without the usual *amount* of clearance, and bolts with plain shanks long enough to pass right through all of the plates should be driven in. In order to make sure of having no portion of the threaded end bearing on the outer plate a ⅜-in. washer should be placed under the nut. The 1909 Act says that rivets should be used in all cases where reasonably practicable; but there were a very large number of buildings to which this Act did not apply. He thought that all steelwork should be designed in accordance with the provisions of the 1909 Act, but that the conditions for bolted work should be amplified in the Act, the only requirement now being that the bolt should extend through the nut and the latter be secured so as to avoid risk of becoming loose. Another important point, and one that was not always attended to, was that all holes through two or more thicknesses of metal should exactly coincide. If they did not coincide, how could the rivets or bolts take a proper bearing and transmit the loads from one to the other?

Filler joists in concrete floors should be bolted or cleated at least every third joist to the main beams. He had seen cases in which this was not done, but the fillers simply rested on short cleats on beams connected to stanchions running through three floors next the street, and with no other tie than that afforded by two ¾-in. bolts at each floor level; the end stanchion, built on the face of the party wall with only 4½ in. brick casing round it, was not tied in at all. He believed it was becoming a common practice to place the small filler joists on a concrete haunching resting on the bottom flange of the main girder and not tied in in any way to the girder. In his opinion this *method* of construction should be condemned.

The area of the stanchion bases should be checked to see if the concrete was not loaded more than 12 tons to the square foot. Large gusset plates should not be allowed unless properly stiffened to prevent buckling. It was a good practice to encase the whole of the stanchion base right up to the floor line with concrete. This prevented rusting, and also held the foot of the stanchion firmly in position. He did not advocate the putting of stone templates under stanchions. There was a difficulty in bedding both the template and stanchion, and if the latter had to be grouted in the stone might as well be absent. Girders supporting walls as well as main floor girders, if they are formed of two or more plain I-beams side by side, should have plates riveted on top and bottom. To simply bolt them together may not be sufficient, as the load from the main floor girders is not transferred to the outer joist, though some engineers think it is.

Caution must be observed in casing girders and stanchions with patent plasters, especially those that are stated to adhere without the intervention of any lathing. He had one in mind that corroded the steel to an alarming extent in a short time. Stanchions and girders are best encased with fine Portland cement concrete, the steelwork having ⅛-in. wire wound round same, spaced about 12 in. apart. This held the concrete firmly in position, and it was not easily damaged even by motors. When he told them that he had seen specialist firms' own men sawing up timber for centering, and the sawdust and shavings and small pieces of wood all left and mixed up with the concrete, he thought one's faith in trusting to such people was rudely shaken. One required a good clerk of works, well up in reinforced concrete construction, with several smart assistants under him to look after the work when it is of any size.

In calculating the sizes for steel joists embedded in concrete the author's practice was to let the steel carry the load as an independent beam, but taking the depth of the beam anything up to 1-30 of the span, limiting the stress to 7½ tons per square inch. This was quite enough, as he had often found that these small joists, such as 3 in. by 1½ in. and 4¾ in. by 1¾ in., were of foreign make.

He had also a preference for joists with 3 in. flange over those with 1½ in. and 1¾ in. flanges, for the reason that the concrete had a *much* better bearing on the joist. Mr. Brown uttered a warning against using breeze for floors. There was a great danger of expansion, and he knew of several cases where this had occurred and pushed walls several inches out of upright, and even when the wall was rebuilt it happened again. There was also a corrosive action between the concrete and steel which in time might endanger the stability of the floor.

THE MODERN GAS FIRE AND HYGIENIC EFFICIENCY.

In *The Lancet* of February 7, 1914, two new methods in regard to testing the hygienic efficiency of gas fires were described. The term "gas fires" is exclusive to those stoves which aim at supplying the energy of the combustion of coal gas in the form of radiant heat. In this article it was stated that in a preliminary trial of these tests with some of the gas fires upon the market gratifying evidence was obtained that the makers of gas fires were steadily working towards a sound hygienic standard. Further experiments have confirmed this statement, and in their issue of April 4 *The Lancet* presents the results of some experiments which have since been made with a number of gas fires representing chiefly the types being offered to the public at the present time.

The Shadowgraph Test and "The Lancet" Chemical Test.

We may briefly repeat a description of the tests referred to. The shadowgraph test depends upon the fact that water is the principal product of combustion of coal gas. It is clear that if it can be demonstrated that water vapour from a gas fire is issuing into the room instead of flowing up the chimney a defect of hygienic importance is disclosed comparable with the escape of smoke from the ordinary fireplace. Everyone knows the effect of bringing a tumbler of cold water into a moist warm air. The moisture is deposited upon the glass. This is the principle of the shadowgraph method of testing gas fires. A piece of plate glass called the detector plate is carefully cooled in an ice bath to such a point that its temperature is slightly above the dew point of the room in which the fire is being tested. The plate is not cooled sufficiently to precipitate moisture from the normal air, but when it comes into contact with hot air surcharged with moisture an abundant deposit takes place. Brought near to the canopy of a gas fire which permits products of combustion to escape freely, a deposit of moisture instantly takes place which is readily visible to the eye, but the test is made more obvious, and a record can be made, by means of a beam of light projected through the plate, when, if the stove is "by-passing" water vapour from beneath its canopy into the room, a darkening as though smoke was escaping from the stove is seen upon the screen.

In the chemical test which was devised in *The Lancet* laboratory an absorbent pencil such as chalk is soaked in carbon tetrachloride and placed near the air inlet of the gas fire. Traces of carbon tetrachloride are thus drawn into the burners, with the result that on combustion hydrochloric acid is produced, which, although present in small proportion, is readily detected by coming into contact with ammonia, forming dense fumes of ammonium chloride. If, therefore, the products of combustion are "by-passing" this will instantly be shown by fumes being produced when an open tube containing strong ammonia solution, or a sponge soaked in the solution is placed at various points along the rim of the canopy.

The Application of the Tests.

The fires were submitted to both the shadowgraph and the chemical test. Practically speaking, there was found to be a substantial agreement between the two sets of results. In our contemporary's report of the tests the results are given in tabular form. In every case the tests were begun after the fire had been alight for thirty minutes, as it is obvious that the conditions necessary for the ventilation of the products through the proper outlets can only be assured when the radiating material and stove are thoroughly hot. There can be little doubt that the gas fire presents a similar difficulty to that which is experienced with the coal fire during lighting up. Until the wood is well alight there is frequently no draught established up the chimney, and the expedient of burning a large piece of paper during the lighting of the coal fire in order to establish a draught and prevent the escape of smoke into the room is well known. The fires were tested in the middle of the experimental room without any communication with the fireplace chimney. The supply of gas was kept under control so as to avoid placing an unfair demand upon the capacity of the stove under observation. All precautions were, in fact, taken to test the stoves under conditions approved by those whose business it is to instal them.

Elbows and Flues.

The stoves were tested under four conditions: First, when there was no attachment of "elbow" to the flue nozzle of the stove; second, when there was an elbow attached; third, when a 2-feet sheet iron flue was attached to the elbow; and, fourth, when a 4-feet sheet iron flue was attached to the elbow. An interesting differentiation was thus obtained, for it was found that some stoves did not require the attachment of flues at all for help in the matter of ventilation or "pull," while others failed to ventilate satisfactorily, even when a 4-feet flue was attached. This serves to demonstrate how helpful these tests promise to be in guiding the manufacturer to design his stove so that when tested it may show negative results as regards the escape of combustion products into the room.

(Our contemporary here gives a series of observations as to the behaviour of each specified fire when submitted to the tests described.)

General Conclusions.

Of twenty-eight gas fires examined, four gave no evidence of the escape of combustion products when only the flue nozzle was left to do the effluent work; and seven fires, while not working favourably under these severe conditions, did not allow products of combustion to escape when an elbow supplied with the gas fire was attached. Eight fires showed a leakage under these conditions, but they proved to work satisfactorily when an elbow and 2-feet length of flue were attached before the escape of combustion products was stopped, five fires showed no leakage with a 4-feet flue attached, and the remaining four still allowed products of combustion to escape with a 4-feet length of flue attached. It should be said, however, that the escape in many instances was so slight as to be without hygienic significance. The chemical test is a very delicate one.

Is Hygienic Efficiency Opposed to Heating Efficiency?

It may be urged that hygienic efficiency can be secured easily enough, but at the expense of heating efficiency. It should be remembered, however, that we are dealing with fires which are claimed to give chiefly radiant heat. The effect of a "pull" on actual radiations need not be serious. Radiations from the sun obviously travel through cold currents of air without much disturbance, and these heat radiations can be focused through an ice lens. On heat currents the effect of a strong draught would be marked. After all, the public may be trusted to decide whether a gas fire is an efficient warmer for the purpose, and a stove would naturally soon be rejected if it failed in this respect. When the householder receives an assurance that a stove is hygienically efficient he will soon be able to satisfy himself whether that efficiency is coupled with heating efficiency. If the room is not comfortably warmed in a reasonable time and a generous warmth is not kept up, it is time to ask what is the good of a healthy stove if it does not keep the place warm? This question bears obviously also on the question of the economy of gas for domestic heating purposes. It is now fairly well agreed that one important reason why heating by gas has increased in favour is that the makers of gas stoves have been actuated by the view which we have for long endorsed, that radiant heat is hygienically the best; they have accordingly striven to utilise as much as possible the calorific value of coal gas in terms of radiant efficiency. In other words, their model now is in reality the hot radiant coal fire, which is instrumental in two directions. Firstly, it warms the living-room by means of its exclusively radiant heat, and, secondly, it provides a shaft which effects an important amount of ventilation. The gas fire should do the same. The combustion of coal, however, is always imperfect, and, therefore, wasteful and offensive; the combustion of gas is complete, and, therefore, economical and inoffensive. It is a manifest advance in domestic methods of heating by gas that the modern gas fire can now provide a radiant efficiency of from 50 to 60 per cent. We attach importance to this step from economic considerations; but we attach far more importance to it when we know that this position can be gained with hygienic security.

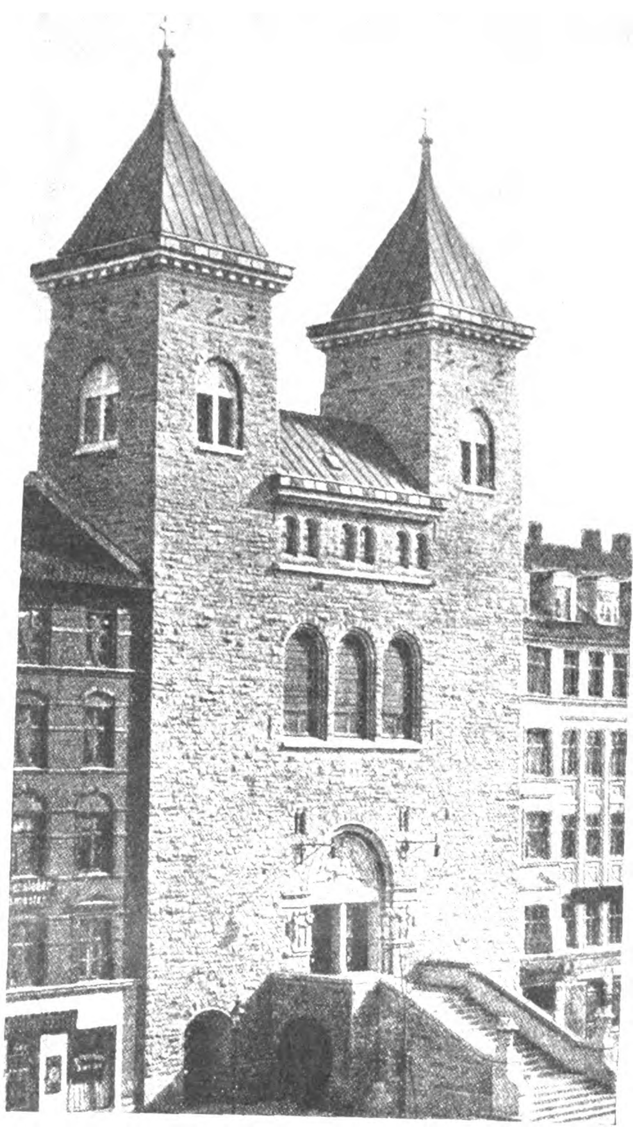
After all, the demand that a gas stove shall furnish only radiant heat implies (except for the heat communicated by its canopy and casing) that it shall not allow products of combustion to escape into the room. The stove which permits this leakage will, of course, show a higher general heating efficiency due to the circulation of hot gases of combustion, a process of heating by convection currents. This means, however, the pouring into the dwelling-room of hot water vapour and carbonic acid gas, to which objection must be taken on the ground that a strong physical although only a slight chemical vitiation of the air results, which may soon lead to oppression and discomfort.

Some Points in Construction.

It is not in our province to discuss the construction of gas fires which will meet equally the considerations of both heating and hygienic efficiency. This may well be left to the gas-fire constructor, with the help afforded him in this matter by the lessons of the new simple tests. During these experiments, however, certain observations were made which indicate some directions in which structural alterations might be made with hygienic gains. In some cases, for example, it was discovered that the only defect in the gas fire was the shape of the flue nozzle. The flue elbow supplied in some cases was elliptical in shape at the end where it is attached to the stove, but cylindrical at its exit. This

MODERN EUROPEAN ARCHITECTURE.

DENMARK.

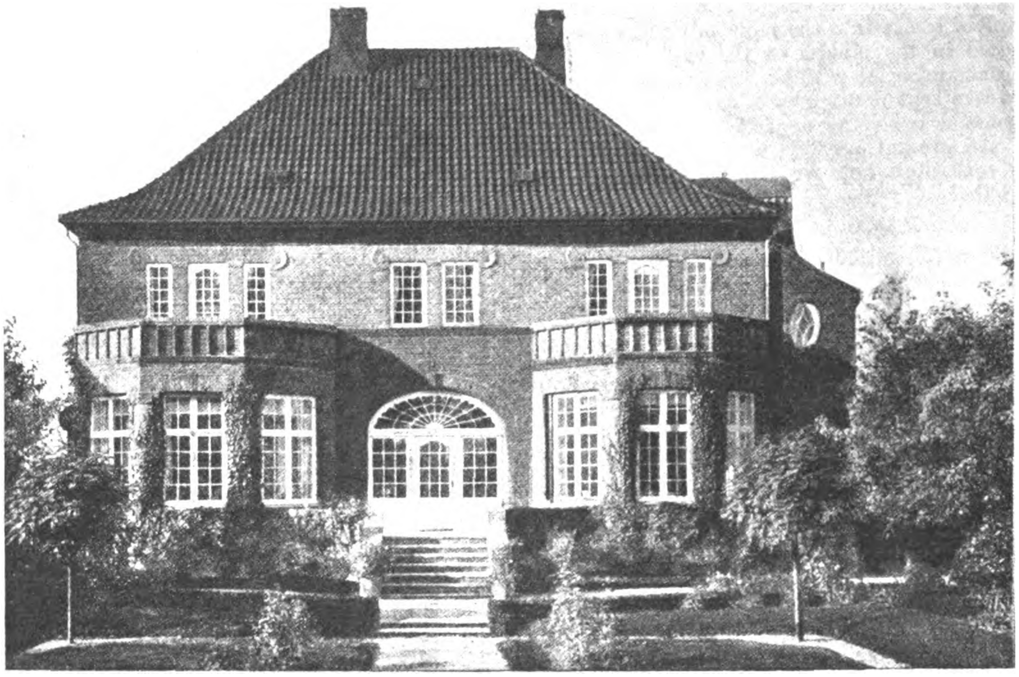


[From *Het Huis.*

ELIAS CHURCH, COPENHAGEN.—Professor M. NYROP, Architect.

MODERN EUROPEAN ARCHITECTURE.

DENMARK.



[From *Het Huis*.

SUBURBAN HOUSE, COPENHAGEN.—Mr. CARL BRUMMER, Architect.

elbow occasionally offered resistance to the passage of the flue gases, and so an escape appeared at the canopy. But when this elbow was replaced by one which was elliptical throughout, end to end, the tests indicated no leakage whatever. The experience generally was that the broad elliptical flue gave the best results, whereas invariably the cylindrical flue seemed to be inadequate for carrying off completely the gases of combustion. We regard this as an important point, and it must be remembered that while one shaped flue will suit one kind of gas fire, it may be utterly unsuited for another type. There should be no mixing up of flue elbows, and it is important that when a stove is placed in position it should have attached to it the flue elbow which gives satisfactory working results. In some cases there was supplied a flue elbow which caused a leakage of combustion gases at the canopy, which was soon remedied by attaching an elbow of another shape. There should be no excuse for supplying a flue elbow which is opposed to satisfactory working conditions when these can be readily shown by simple tests. Attention to the details of construction of the stove itself must not be accompanied with neglect of such points.

One of the most important advances made in gas-fire construction was when "ball fuel" was discarded in favour of the radiating tube. In *The Lancet* Commission upon the subject, so far back now as 1893, this defect was pointed out as one of the sources of incomplete combustion and oftentimes of disagreeable smells. Nevertheless, the "dressing" of a gas fire still needs attention. Some gas fires work satisfactorily except for a small escape of combustion products at the sides of the canopy. This was remedied in some cases by taking out the distal tubes each side and in others by removing the cross "dressing" (where that was used) on the top of the tubes. According to this, it would be an advantage to leave a gap between the side of the stove and the last radiating tubes, and to modify the cross top dressing which is probably only used to give a finished appearance to the stove. The construction of the canopy and the point whether the tubes should project into it, or whether an open space should be left between, have been freely discussed by the gas-fire industry, and there appears to be considerable difference of opinion on this question. But the chances of solving such problems are very much improved by the convenience of application offered by simple testing. One of the defects of a gas fire, the irritating purring noise of the burner, is receiving the attention of makers with some success.

Another important question already alluded to is that of flue capacity. It will be noted that some fires work satisfactorily, hygienically speaking, without the aid of a flue, while others allow an escape of products of combustion from under the canopy unless they are fitted with certain flue lengths. The question is narrowed if we accept that the flue is part of the outfit of a gas fire. It may be contended that it need not be. We agree that it is not essential, for it is obvious that fires are constructed which do not require a flue, and yet do not allow gaseous products of combustion to escape from the canopy into the room. It is entirely a matter of design. The stove can be designed to work with or without a flue. There appears to be no difficulty about constructing it to meet either case. The limit of safety is reached, possibly, when the flue required to give the necessary "pull" is inconveniently long so that there would be difficulty in placing it in the chimney.

General Considerations.

From the hygienic point of view, which in the present article is our only consideration, it matters little whether a stove works in the open without or with an auxiliary "pull" so long as when it is set in its place of practical duty it shows no leakage of combustion products. Although a fire may fail unattached to ventilate itself automatically, it may work perfectly well when it receives a chimney pull which may equal anything from that of a 6-feet to a 16-feet flue pipe. On the other hand, if by reason of an attained high standard of hygienic efficiency it loses heating efficiency, the system breaks down on economic considerations. It is quite obvious that the maximum heating effect of coal gas can be obtained by burning it in the open room with no outlet for the products of combustion at all. The process of heating is then purely by convection—the circulation of heated air currents; there is no radiation at all. The attractive feature of the modern gas fire is, as we have said, that 50 to 60 per cent. of the heating value of the gas which it consumes is made radiant, which is exclusively the form of heat given by the coal fire. Radiant heat is acknowledged to be the most cheerful and healthful agency for keeping our dwelling-rooms comfortable and warm, and the modern ob-

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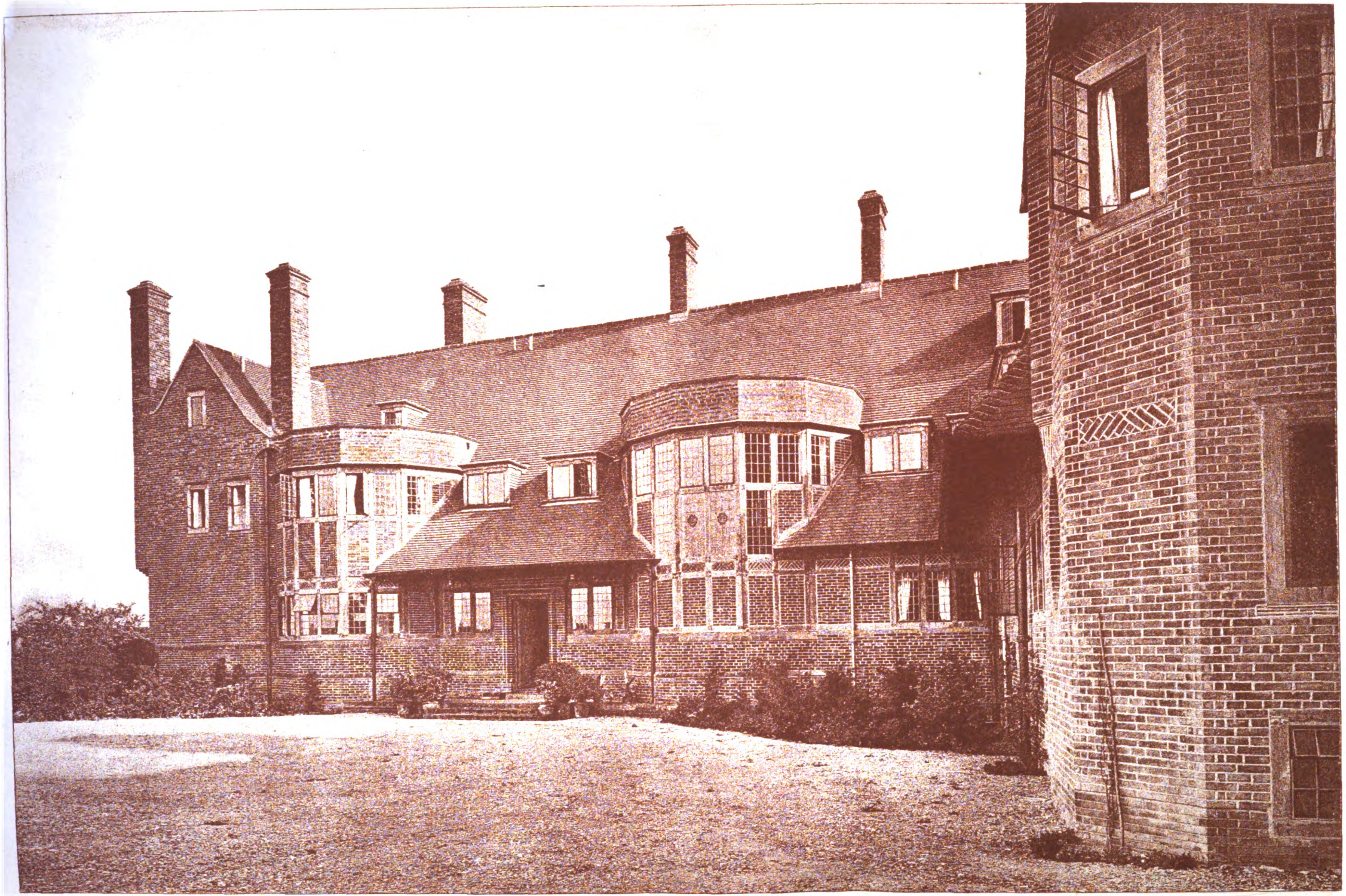

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"BASSETS," FARNBOROUGH, KENT. ENTRANCE FRONT.

MR. MAURICE E. WEBB, Architect.

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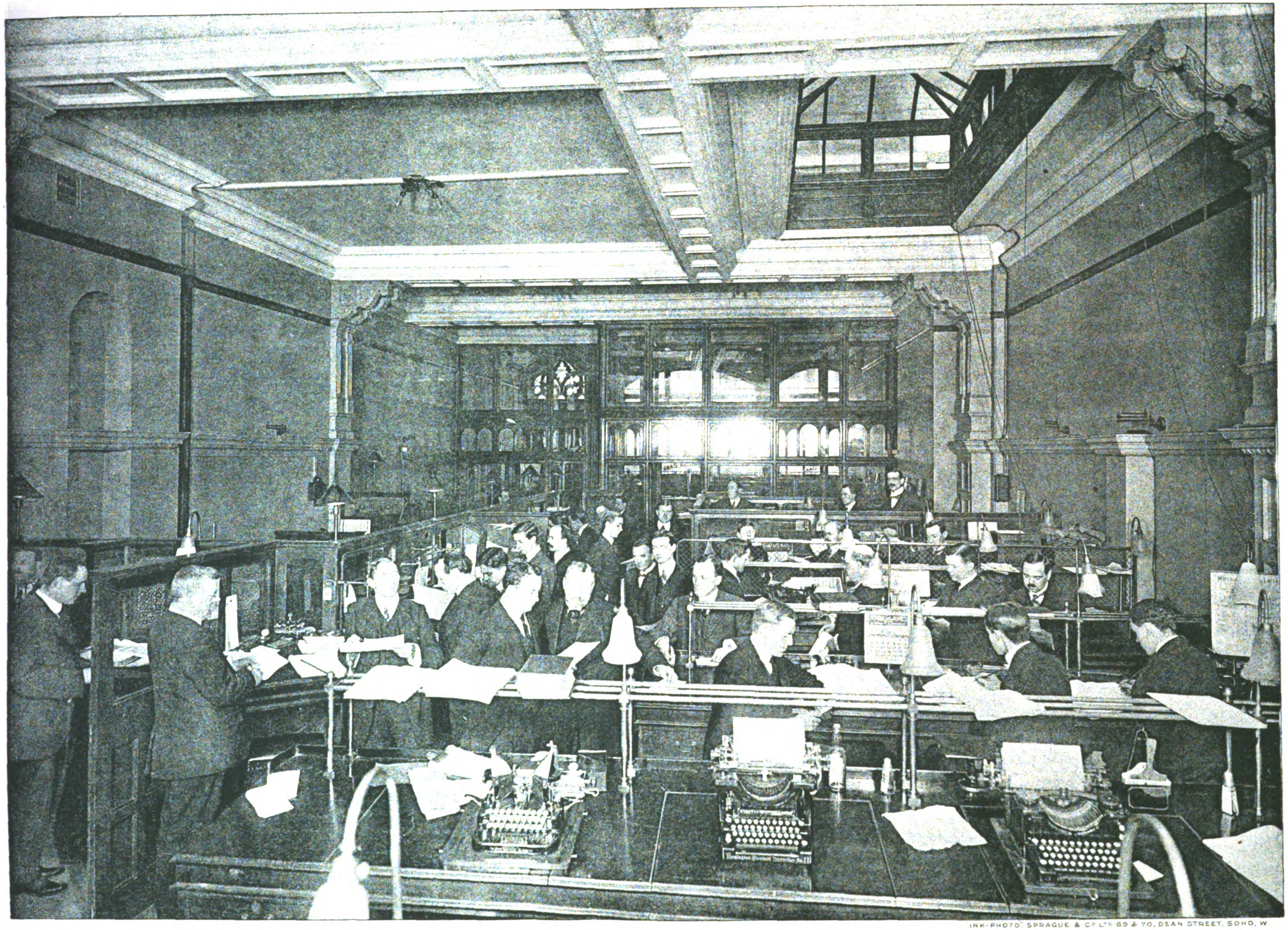

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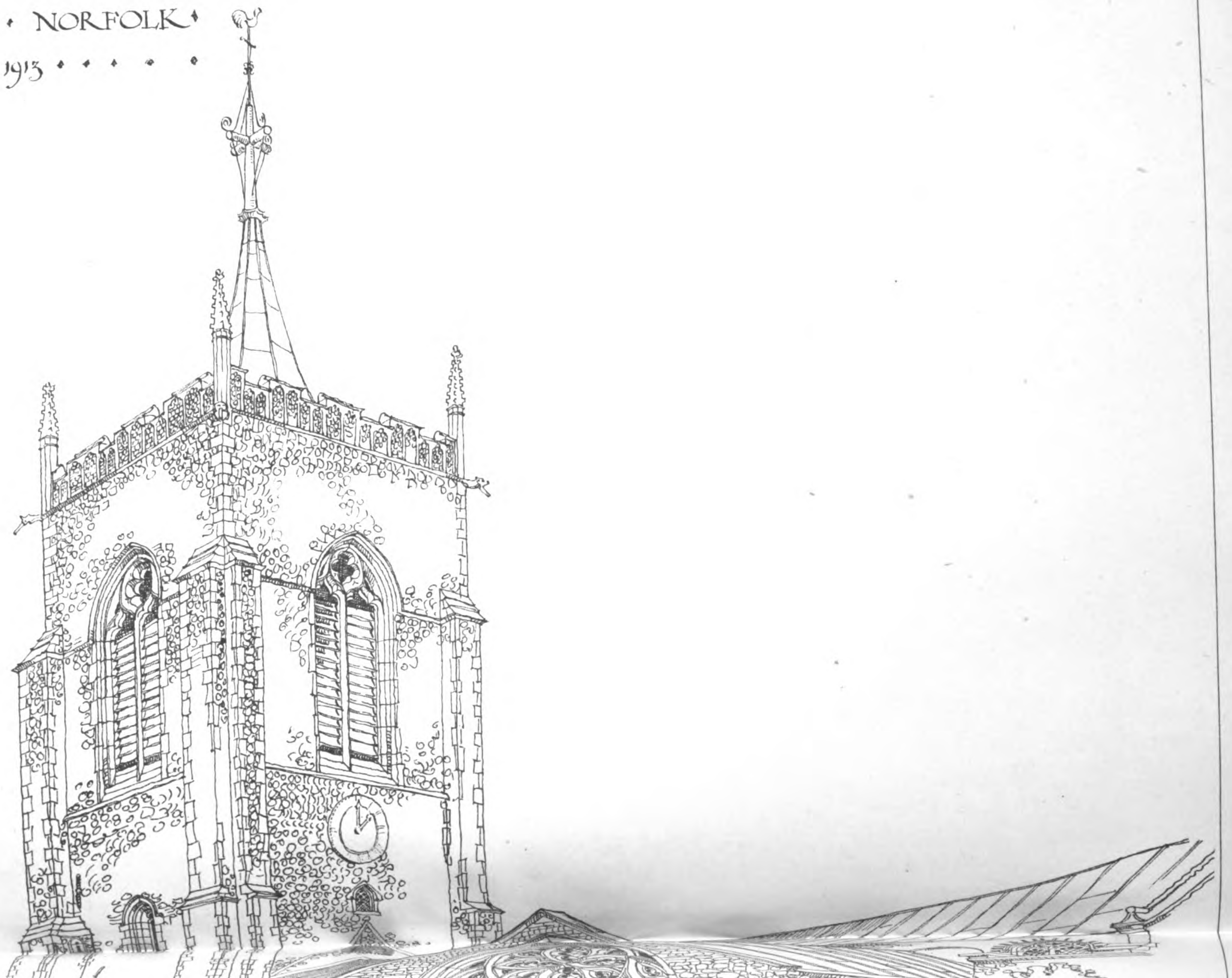

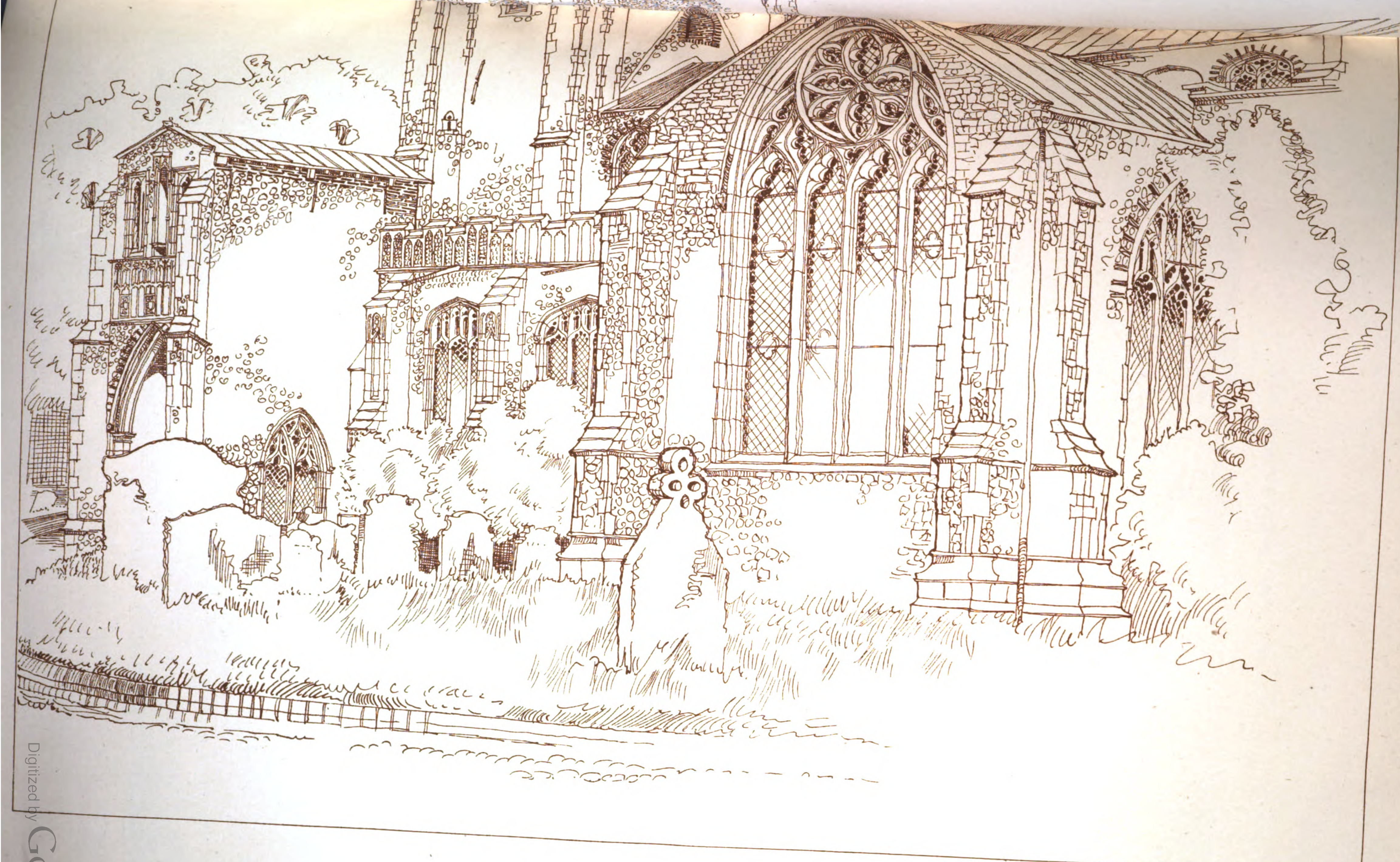

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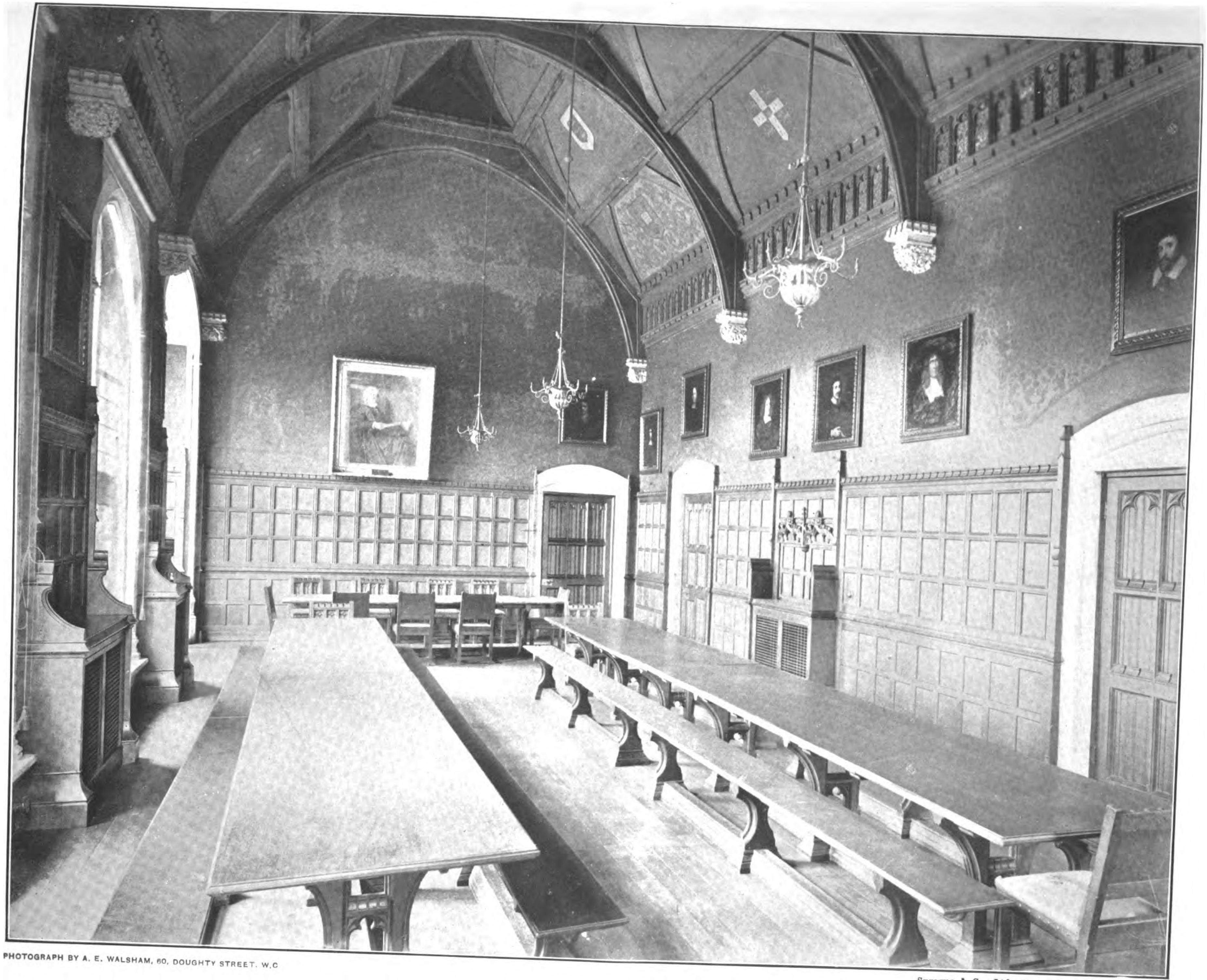

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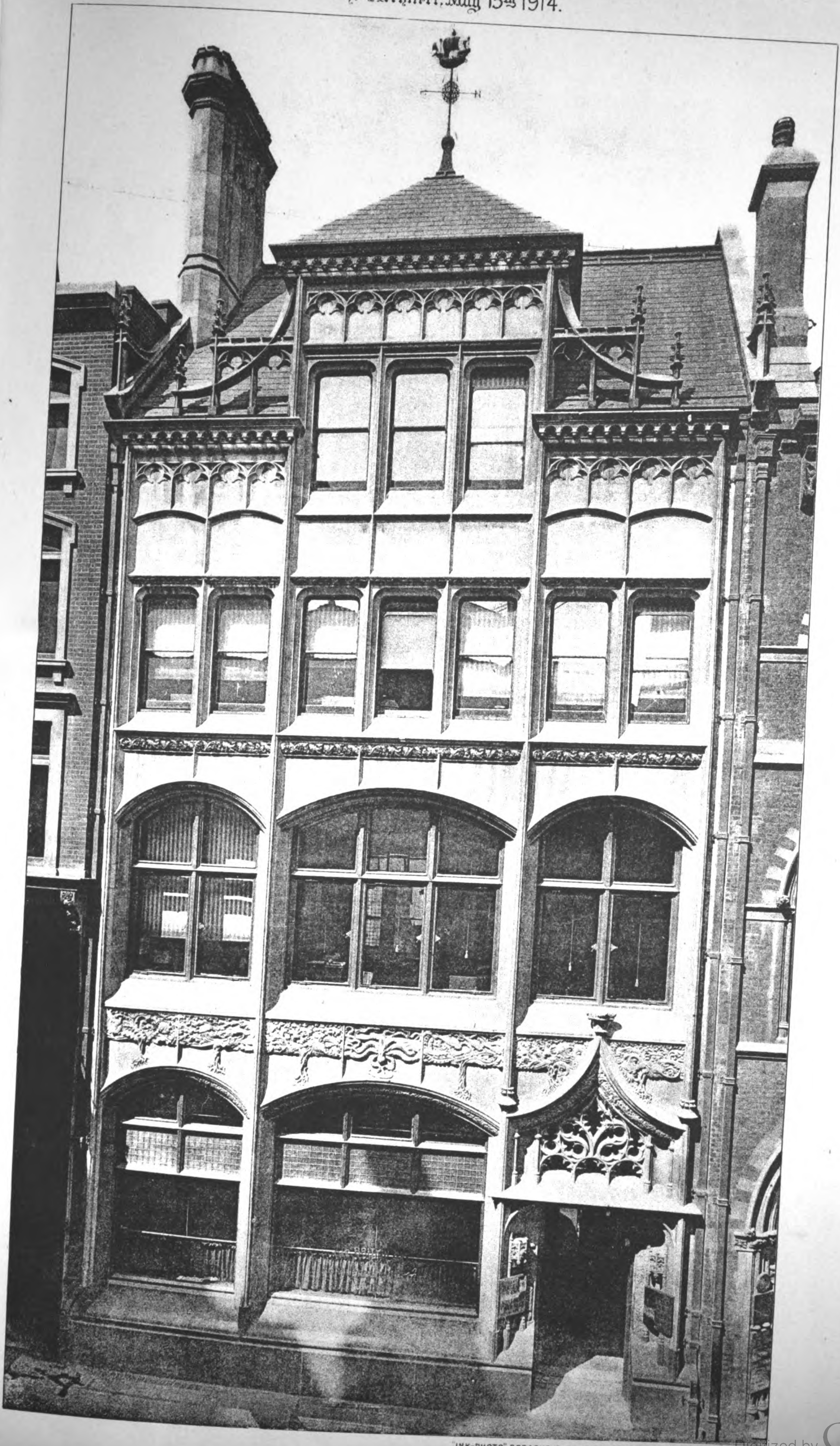

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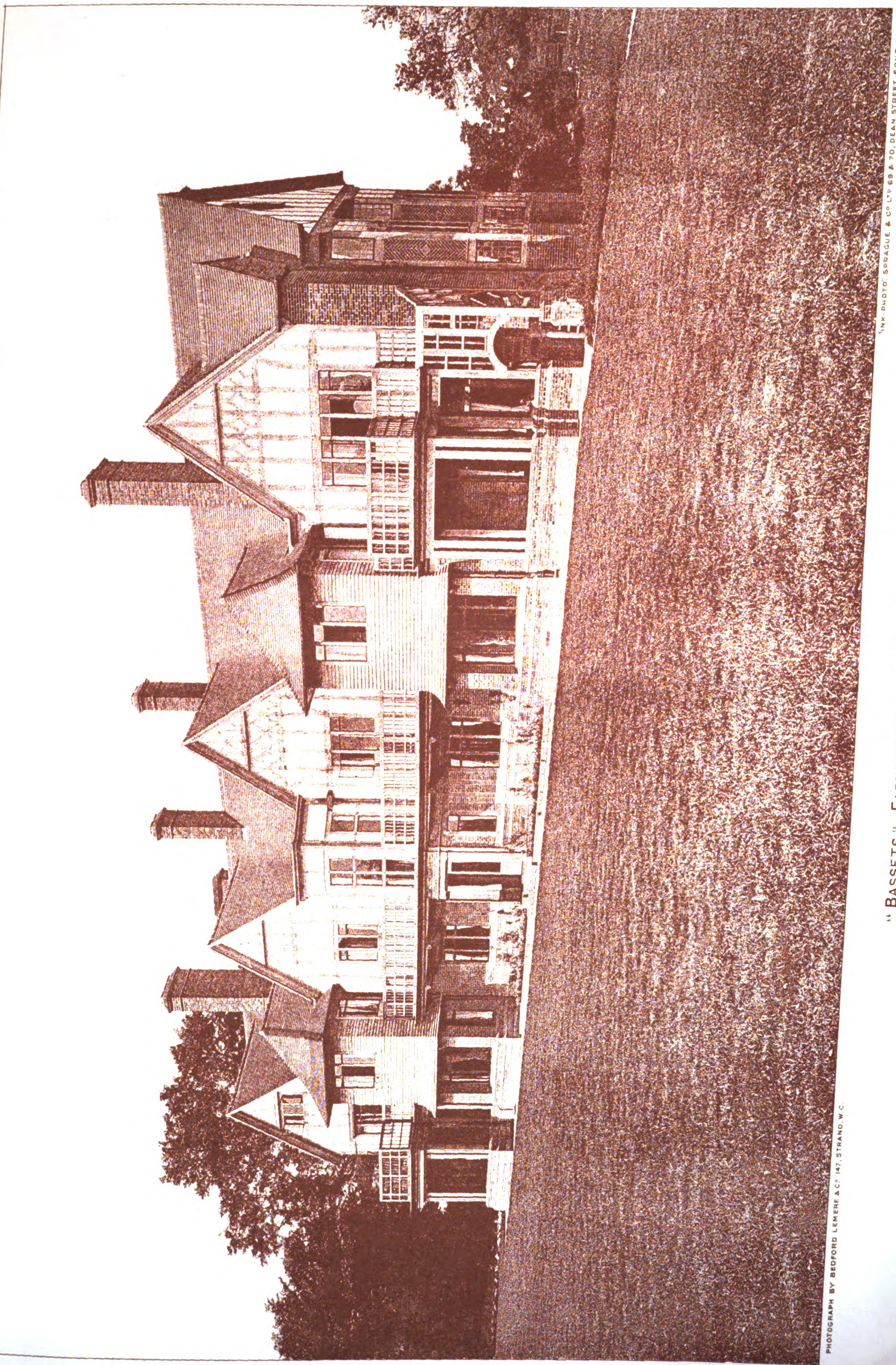

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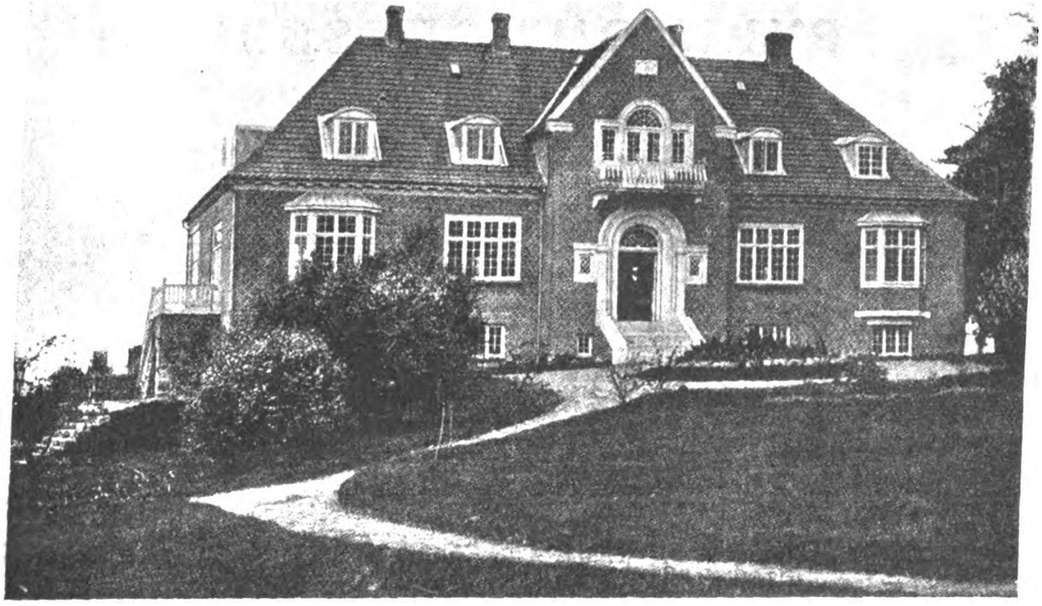
"BASSETS," FARNBOROUGH, KENT. GARDEN FRONT.

Mr. MAURICE E. WEBB, Architect.

MODERN EUROPEAN ARCHITECTURE.

DENMARK.



[From *Het Huis.*

SUBURBAN HOUSE, COPENHAGEN.—Mr. K. Varming, Architect.

ject of the makers of gas fires is (in our view very rightly) to render the heat of combustion of gas in this form. In this they have met with considerable success, and further advances in this direction will most likely be made, and a yet greater proportion of the calorific value of coal gas be made available as radiant heat. If the correct consummation of the application of gaseous fuel to domestic heating purposes is a maximum radiating efficiency, the question of whether a stove should be required automatically to ventilate itself without the services of a flue pipe to convey away the products of combustion diminishes in importance, since the effect of a reasonable "pull" short of a blast is negligible. At the same time, the view that a stove should show no leakage of combustion products without the aid of a flue should not be discouraged, for it discloses a keen regard for hygienic conditions.

The Question of a Standard.

As the result of our experiments, we are inclined to express doubt whether a stove should be accepted for service which on testing shows a leakage of combustion products when a flue has to be attached exceeding 4 feet in length. In our opinion, these stoves fail to pass a desirable standard of hygienic efficiency. They cannot be compared, at any rate, with others which give absolutely blank results without a flue at all.

We believe the movement to bring gas methods of domestic heating into acceptance from both a hygienic and economical point of view is of considerable importance in the public interest, and we therefore support it. Gas-stove makers can study the tests for themselves and model the construction of gas fires so as to pass certain requirements. If this is consistently done, and acted upon, no reproach against the radiant system of gas heating will remain.

We conclude that the final appeal in this matter must be to the chimney and fireplace when the gas fire is placed there for practical duty, and the tests can just as easily be conducted in the house as in the factory. In our opinion, a logical standard of hygienic efficiency cannot be set up without reference to the considerations we have brought forward. The present attitude of the gas-fire industry towards all questions of improvement is a most satisfactory one, and our inquiry shows that we may fairly expect in the near future an encouraging and hopeful issue.

ART IN LONDON.

Memorial Exhibition of the Works of the Late W. Ayerst Ingram.

There are those amongst us who are products of our natural environment, and there are, again, those rarer spirits who create their own environment. We suppose that it is true of the artist, as of the poet—nascitur non fit; but the artistic powers, the nascent genius may be stifled if external influences are unpropitious. In the case of Mr. Ayerst Ingram, he fostered his own talents and satisfied the needs of his birthright by selecting the environment best calculated for the full development of his artistic instincts. It is truly a revelation to many of us to inspect such a collection of sea-pieces as here displayed upon the walls of the Dowdeswell Galleries.

The sea in all her moods was equally lovable to Mr. Ingram, to whom was revealed the very soul of old Ocean; he saw "colour," too, in the true sense of what colour is meant to be to the eyes of the public—not a something analysable or chemical to be shown up in its crude elements; but, on the contrary, something compounded in Nature's workshop and offered as a freewill gift in its complete loveliness to the sons and daughters of men. We scarcely care to give by name examples of Mr. Ingram's work at the galleries, for such selection might seem a slight upon the unmentioned works; but we might point out that, good as are "A Summer Sea" and "Blue and Gold," they would be still better if there were any suggestion of "life," were it only in the supposable occupancy of a boat on the water. And, too, the horizon line of a waste of waters should always be horizontal. We might, perhaps, specially refer to the excellences of "Scotch "Fishing Boats," "The Home Port," and "P. and O.S.S. *Britannia.*" But let the public go and judge for itself—we do not doubt the verdict.

Mr. H. H. La Thangue, R.A., at the Leicester Galleries.

There is one disadvantage attaching to the duties of an Art-critic—namely, the impossibility of attending an exhibition for the mere interest of it, feeling the necessity of approach in a critical spirit and of recording the acquired impressions for good or less good—or even for poor work. This being so, there are two classes of exhibition which provide an element of discomfort to a sensitive critic (and in the absence of

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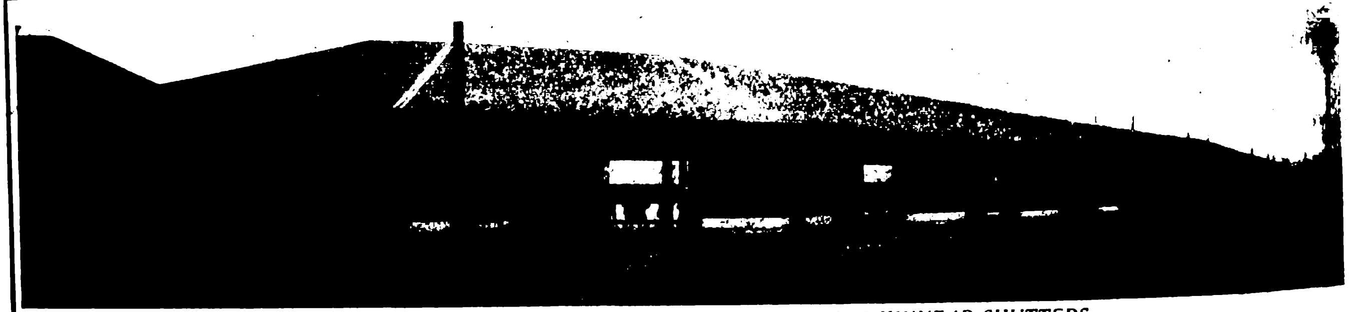

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sensibility the duties cannot be properly discharged) —these two classes being the pre-eminently good and the undisguisedly bad. For in reviewing the former the charge may be levelled against the critic that the expressed views are anæmic and unmeaning in their one-sidedness; and in noticing the latter the assumption of "nil admirari" may be advanced.

Of course, such charges are unfounded on one side and the other. An art-critic must be no more afraid of expressing wholesale approval than wholesale condemnation; but it is human to be weak, and a medium show provides the writer with a better chance of being accorded credence in the issued judgment.

Mr. La Thangue's work is in the former category, for we do not regard the slight adverse criticisms which we may have to offer as seriously or indeed at all detracting from the great excellence of the collection of works on view. An outstanding quality is the suffused sunlight portrayed on some of the best canvases, such as "A Provençal Landscape," "Ligurian Olives," and "An Alpine Frontier"; the latter has the sunlight accentuated by the small sailing-boat, which forms a dark spot in the picture. The girl and ass in "Ligurian Olives" are very telling in effect, and in general we must record the graceful posing of Mr. La Thangue's models. As our companion pointed out with true artistic knowledge, the artist manages his "greys" so satisfactorily. Besides the first-named work, we regard as the very best on show "A Ligurian Valley" (19), "A Provençal Castle," and "A Ligurian Shepherdess"; the last-named and "A Provençal Morning" are notable for the very pronounced effects of chiaroscuro in a collection where such effects are mostly not greatly in evidence. The tone-values of these two works need to be seen to be appreciated fully. "Neglected Roses" and "A Deserted Rose Garden" form a couple of charming works, and others that should be referred to for their special merits are "Brescian Vines," "A Ligurian Harbour," "Ligurian Arbutus," "A Mediterranean Island," "A Ligurian Hillside," and "A Veronese Shepherdess."

But there are two pictures to which we wish to refer here less favourably; "Fetching Water from the Lake" is, we must premise, a striking work and admirable in its swing and brightness and colour, but the artist has missed the effects of aerial perspective to the extent that the rear bucket borne by the girl sticks to the boat on the lake, and the sail of that boat reciprocally sticks to the girl's shoulder, giving the effect of a pinion. "An Andulusian Goatherd" is a portrait of a girl-model, where the colour and drawing are not all they should be, the latter more particularly so. And though Mr. La Thangue shows his powers of foliage massing in modelling trees, yet in some of the works (let us instance "A Ligurian Castle") there is a leaf-individuality that is not pleasing and that is less than natural. But this fault is not at all apparent in the delightful "Brescian Vines" above referred to, whose massed golden foliage is not the least attractive feature in an attractive picture.

BRITISH COLUMBIA TIMBER.

Mr. J. H. Turner, the Agent-General for British Columbia, has transmitted the enclosed letter to the Secretary of the Canadian Chamber of Commerce, it being a matter with which that body could most fittingly deal in the interests of Anglo-Canadian trade.

The Secretary would be glad therefore to receive from our readers any information on the point raised by the Hon. the Minister of Lands of British Columbia.

(Copy of Letter.)

Department of Lands,
Victoria: March 20, 1914.
The Government of the Province of British Columbia.

Hon. J. H. Turner,
Agent-General for British Columbia,
Salisbury House, Finsbury Circus, E.C.,
London, England.

Dear Sir.—It has been brought to my attention that occasional shipments of timber have been received at British ports from other than Canadian ports, and have been sold under the name of British Columbia fir. The inference is that this course is taken to facilitate the sale of foreign timber to persons in Great Britain who would prefer to buy British Columbia timber. I need not point out to you that practically no British Columbia timber can be secured in the United Kingdom except by direct shipments from British Columbia ports. If any such shipments should come to your notice I would be indebted to you if you would inform me of the names of the importers and any other facts which would enable the officers of the Department to trace the identity of the shipment.—Very sincerely yours,

(Signed) Wm. R. Ross,
Minister of Lands.

BUILDING PROGRESS IN THE PROVINCES AND SUBURBS.

A LIST OF WORKS PROJECTED OR COMMENCED.

(N.B.—Local Authorities, architects, and others are invited to submit full particulars for insertion in this weekly list. Where districts are not entered against names of architects and builders the address is as a rule local.)

ENGLAND.

Berkshire.

Hampstead, East.—Priestwood Council School: enlargement by eighty places, &c. (£1,700). Mr. E. Fisher, architect, 19 Buckingham Street, Strand, London.

Moulsford.—Council School.

Buckinghamshire.

Tingewick (near).—Building for Golf Club.

Cambridgeshire.

Cambridge.—Infectious Diseases Hospital: extension (£7,500).

Cambridge Research Hospital: operating theatre.

Cheshire.

Birkenhead. St. Thomas' Church, Seaview Road, Liscard.

Crewe. St. Barnabas' Parochial Hall (£950).

Ellesmere Port.—Fifty workmen's dwellings.

Holmes Chapel.—Council School (£3,000). Mr. H. Beswick, F.R.I.B.A., County architect, Newgate Street, Chester.

Noman's Heath.—W.M. Chapel (£1,250).

Cornwall.

Flushing.—Eight Council houses, Little Falmouth, for East Kerrier R.D.C.

Paul.—Proposed Isolation Hospital.

Truro R.D.C.—Four Council houses at each of following: Feock, Gerrans, Kea, and St. Just.

Cumberland.

Penrith.—Council School. Mr. G. D. Oliver, F.R.I.B.A., County architect, 68 Lowther Street, Carlisle.

Devon.

Barnstaple.—Science and Art School. Mr. P. Morris, A.R.I.B.A., County Education architect, 1 Richmond Road, Exeter.

Plympton.—Workhouse: infirmary extension. Mr. F. A. Clark, architect, 83 Old Town Street, Plymouth.

Torquay.—St. James' Parish Church. Mr. W. D. Caröe, F.R.I.B.A., architect, 3 Great College Street, Westminster, London.

Theatre, Torwood Street and Strand, for Mr. J. M. Glover.

Durham.

Billingham.—Cowper Bewley Church Schools: additions. Messrs. Clark & Moscrop, FF.R.I.B.A., architects, Feethams, Darlington.

Brandon Village.—Public Elementary School for about 150 places.

Durham.—Hall and Offices for the Durham Miners' Association. Mr. H. T. Gradon, A.R.I.B.A., architect, 22 Market Place.

School for the mentally defective. Mr. J. W. Hays (of Wingate), architect.

Villa, Field House Lane, for Mr. D. J. Todd.

High Spen, Peases West, Pelton Lane Ends, and Oxhill.—Council Schools (£5,500), (£1,650), (£11,000), and (£2,800) respectively.

Stanhope.—Drill Hall premises, for the County T.F.A. Messrs. Wright & Chapman, R.I.B.A., architects, 38 Grainger Street West, Newcastle-upon-Tyne.

Essex.

Clacton-on-Sea.—Bungalow. Mr. J. W. Start, architect, High Street, Colchester.

Southchurch.—Baptist Sunday Schools for Belle Vue Church. Messrs. C. Cooke & Son, architects, Tower Buildings, High Street, Southend-on-Sea.

Gloucestershire.

Tewkesbury.—Premises: rebuilding for Gloucester Co-operative Society. Mr. T. Malvern, architect, 21 Winchcomb Street, Cheltenham.

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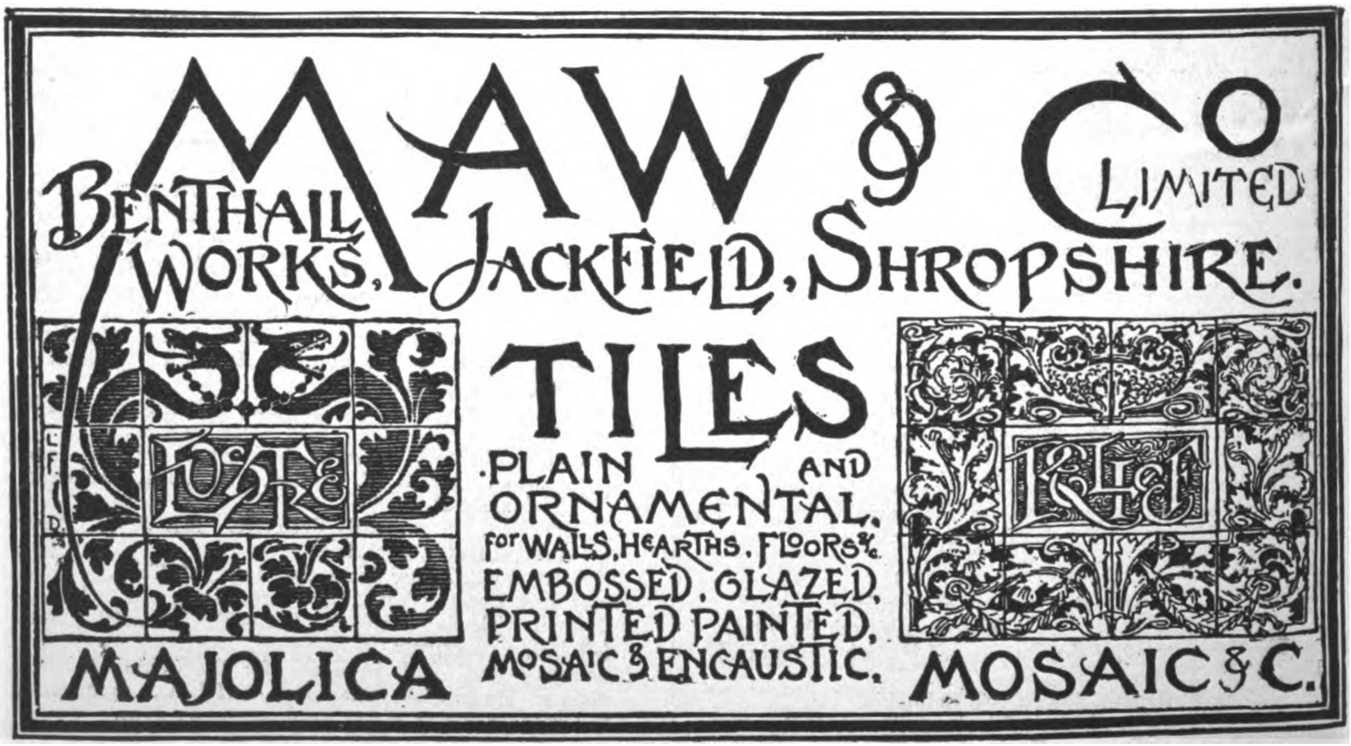
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England—*continued*

Hampshire.

Alton.—Workhouse: infirmary. Messrs. Wallis & Smith, F.R.I.B.A., architects, Potter's Lane, Basingstoke.

Eastleigh.—Girls' School, Winchester Road: alterations. Boys' School, Bishopstoke.

Fareham.—Price's School: additions.

Totton—Council School, Lidlynch Road.

Herefordshire.

Ledbury.—Hall and two shops, Bank House, for the Picture Palace Co.

Hertfordshire.

Hitchin (near).—Head Office Staff Offices, for G.N.R. Co.

Kent.

Margate.—Cinema, High Street, for Messrs. Stonham & Burrows.

Tonbridge R.D.C.—Workmen's cottages (£7,900) at Brenchley, Hadlow, Hildenborough, Horsmonden, Paddock Wood, and Pembury.

Lancashire.

Accrington.—Council School. Mr. H. Littler, County architect, 16 Ribblesdale Place, Preston.

Bolton.—Garage, Crown Street, for Messrs. Whitehead.

Two houses, Greenmount Lane, for Mr. W. Gornall.

Thirteen houses, Constance Road, for Mr. W. Pickup.

Seven houses and shops, Mornington Road, for Mr. G. Duxbury.

Pair of houses, Westcliffe Road, for Mr. J. T. Hamilton.

Two houses, Bentley Street, for Mr. S. Gregory.

Mill, Derby Street: additions for Messrs. J. Kershaw & Co.

Mill, Parrot Street: additional storey for Messrs. Johnson, Hodgkinson & Pearson.

Mill, Weston Street: additional storey for Messrs. Ainsworth Brothers & Co., Ltd.

Offices, Fairclough Street, for Messrs. J. Dickinson & Co., Ltd.

Picture Palace, Mount Street. Messrs. T. E. Smith & Son, architects, Central Chambers, Fold Street.

Picture Theatre, Belmont Road, for Mr. W. Kearns.

Warehouse, River Street, for Mr. Partington.

Works, Shifnall Street: extension for Mr. R. Threlfall.

Helmshore.—P.M. School and class-rooms (£900).

Holcombe.—Aitken Sanatorium: extension by 200 beds for the Bury and District Joint Hospital Board.

Manchester.—Headquarters and drill hall, Great Clowes Street, Lower Broughton, for 8th Batt. Lancs. Fusiliers.

Salford.—Sub-station, Robert Hall Street. Messrs. Allott & Sons, architects, 46 Brown Street, Manchester.

Lincolnshire.

Crowland.—Wesleyan Chapel (455 sittings). £3,000. Mr. A. Brocklehurst, architect, 30 Brown Street, Manchester.

Grimsby.—St. Stephen's Church (500 sittings). £11,500.

Harmston.—Parish Church: tower restoration. Sir C. Nicholson, Bart., F.R.I.B.A., architect, 2 New Square, Lincoln's Inn, London.

Middlesex.

Edgware.—Congregational Church.

Monmouthshire.

Cwmcarn.—Proposed seven houses for Mr. Silverthorne (of Pontywain).

Northamptonshire.

Wellingborough.—Congregational Church: alterations, &c.

Police Courts.

Northumberland.

Alnwick.—Cottage Homes for the Board of Guardians.

Newcastle-upon-Tyne.—Throat and Ear Hospital: extension (£2,000). Mr. E. Fenwicke, architect, Pearl Buildings, Northumberland Street.

Tuberculosis Dispensary, Ridley Villas: alterations. City surveyor.

Nottinghamshire.

Nottingham.—Children's Hospital (£2,000). Mr. R. Evans, architect, Eldon Chambers, Wheeler Gate. Messrs. Woodsend & Sons, contractors, Castle Boulevard.

Somerset.

Taunton.—Proposed Town Hall (£3,000).

Staffordshire.

Brierley Hill.—Infants' Council School, Moor Street, for 350 places.

Cannock.—Hightown Council Schools for 500 places (£5,000).

Tamworth.—Cemetery: chapel (£1,000).

Tillington.—Two houses, Stone Road, for Mr. A. Vincent (of Newport).

Wolverhampton.—Congregational Church, Lea Road district (£5,000).

Suffolk.

Southwold.—Catholic Church and Presbytery.

Sussex.

Eastbourne.—Sixty-eight Council houses (£19,000).

Fifty working-class cottages, Compton Estate, for the Eastbourne Artisans' Dwellings Co., Ltd.

Warwickshire.

Birmingham.—Diocesan Women-workers' Training Home.

Grendon Common.—Four houses for Mr. T. Hackett (of Baddesley).

Nuneaton.—Art Gallery and Museum. Messrs. T. Smith & Sons, contractors, 64 Coton Road.

Sutton Coldfield.—Manual training, cookery, and laundry buildings at the schools (£2,200).

Wiltshire.

Swindon.—Council School, Ferndale Road. Messrs. Drew & Son, architects, 28 Regent Circus.

Worcestershire.

Dudley.—Training College: men's hostel (£8,300) and Principal's House (£1,000).

Yorkshire.

Barnoldswick.—Council School, Gisburn Road.

Clay Cross.—P.M. Chapel and School, Hepthorn Lane (215 sittings). £1,270.

Dewsbury.—Moor End Working-men's Club: additions and alterations. Messrs. W. Thornton & Son, A.R.I.B.A., architects, Bond Street.

Halifax.—Brass Foundry. Mr. T. Kershaw, A.R.I.B.A., architect, 26 George Street.

Hull.—Tuberculosis Sanatorium.

Girls' Secondary School.

Malton.—House, Castle Howard Road, for Mr. C. H. Channon.

Pickering.—Headquarters for the N.R.T.F.A.

Pudsey.—Crawshaw Mills: spinning shed and engine-house. Messrs. C. F. Horsfall & Son, architects, Lord Street Chambers, Halifax.

Public Swimming Baths and Fire Brigade Station (£10,000).

Selby.—Public Elementary School for 750 places.

Wakefield.—Infectious Diseases Hospital: extension (£13,850).

WALES.

Bettws-y-Coed.—House for the Earl of Ancaster. Mr. T. Griffiths, architect.

Cardiff.—Weights and Measures Office (£2,000).

Denbigh.—Church Institute (£2,300).

Llandrindod Wells.—Intermediate School: additions and alterations (£1,250).

Talybont.—Welsh National Memorial Sanatorium.

SCOTLAND.

Clydebank.—Condenser-tube house at the naval construction works, for Messrs. W. Beardmore & Co., Ltd. (£1,200).

Works, North Elgin Street: extension for Messrs. Dawson & Downie (£700 to £800).

Dunfermline.—Union Bank, High Street. Messrs. Burnet & Boston, architects, 180 Hope Street, Glasgow (£6,000).

Offices, East Port Street, for the Prudential Insurance Co. (£10,000). Mr. P. Waterhouse, F.R.I.B.A., architect, Staple Inn Buildings, London.

Eight semi-detached villas, Transy Grove. Mr. W. Yuill, builder, Transy Grove.

Forty municipal houses. Mr. J. Shearer, architect, 1 Bonnar Street.

Workmen's houses, Damside Street, for the Carnegie Dunfermline Trust.

Edinburgh.—Stables, &c., Orchard Brae Farm, Comely Bank Road. Mr. J. A. Williamson, A.R.I.B.A., architect, Public Works Office, City Chambers.

Glasgow.—Public Hall, Fulton Street, for Mr. A. Wardrop.

Terraced houses, Paisley Road, for the Western Lanarkshire Property Investment Co., Ltd.

Hawick.—The Hawick National Security Savings Bank, High Street.

IRELAND.

Athlone.—Working-class houses, the Battery site.

Ballyalla.—County Clare Sanatorium: extension, &c. Mr. W. H. Allen, C.E., architect, The Terrace, Ennis.

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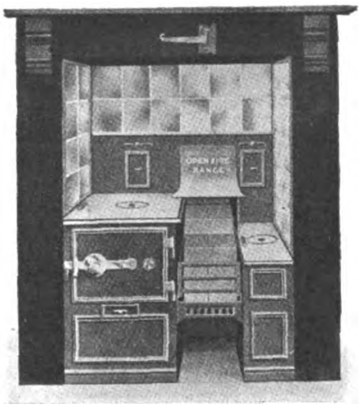

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PATENT SPECIFICATIONS PUBLISHED, MAY 7, 1914.

Selected by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

No. 8,369. April 9, 1913.—J. A. Hill, Ordnance Works, Bernard Road, Sheffield. Machines for drying and mixing paving materials and the like.

8,382. April 9, 1913.—Peitro Vidali, Via del Roneo 2, Trieste, Austria. Automatically closing valves for flushing water closets.

8,958. April 16, 1913.—Rudolf Theumer, Hasenauerstrasse 5, Vienna XVIII, Austria. Ceramic heating members to be employed as radiators.

16,079. July 12, 1913.—Robert Maclaurin, Homesteads, Cambusbarron, Stirling. Chimney can for preventing down draught.

16,317. July 15, 1913.—C. G. Bossenroth, 1 Helmtrudenstr, Munich. Tempera colours for artists and decorators, in the form of pastel sticks and paste for tubes and tins, and in the form of dry powder colours.

18,721. Aug. 18, 1913.—Adolf and Paul Sucker, and Franz Bruckner, 32 Oldenburgerstr, Berlin, N.W. Wire gauze and the like screens for closing window and like openings.

19,730. Sept. 1, 1913.—Henry Howard, Brookline, Norfolk, Mass., U.S.A. Rust-inhibiting paints.

20,214. Sept. 8, 1913.—Smith & Wellstood, Ltd., and G. A. Ure, Columbian Stove Works, Bonnybridge, Stirling, N.B. Kitchen range ovens.

21,835. March 15, 1913.—Walter Kaempfe, Grossenhain, Saxony. Process for the manufacture of oil varnish substitutes from animal oils.

9,325. April 21, 1913.—H. S. Hashim, Raymond, Pacific, Washington. Locking and bolting devices.

9,445. April 22, 1913.—W. H. Chadwick and A. E. Macey, 56 Durham Road, Holloway, N. Manufacture of brushes for painting, varnishing, whitewashing, and the like.

9,792. April 25, 1913.—Giovanni Lizieri, 5 Oakland Road, Newcastle-on-Tyne. Composition for covering floors, walls, and other surfaces.

24,003. Oct. 23, 1913.—Ingall, Parsons, Clive & Co., Ltd., of Warwick Works, Bradford Street, Birmingham. Drop handles and other handles.

27,154. Nov. 25, 1913.—R. F. Carey, 6 The Broadway, Leigh-on-Sea, and R. Waygood & Co., Ltd., Falmouth Road, Great Dover Street, S.E. Vacuum cleaners.

27,320. Nov. 27, 1913.—C. A. Raulf, 127N Dearborn Street, Chicago, U.S.A. Dovetailing machines.

27,901. Dec. 4, 1913.—T. E. McIntyre, 3 Wellesley Avenue, Malone Road, Belfast. Devices for lowering persons from a building or elsewhere.

28,418. Dec. 9, 1913.—Joseph Thibadeau, 120 Noe Street, San Francisco, U.S.A. Apparatus for moulding cornices and the like.

29,521. Dec. 22, 1913.—George Mason, Wilmington, Los Angeles, California. Composition for impregnating cement sacks and the like.

1,849. Jan. 23, 1914.—Dated under International Convention April 15, 1913. John Shanks, Tubal Works, Barrhead, Renfrewshire. Urinals.

12,691. May 31, 1913.—Samuel Saunders and S. M. Saunders and Saunders & Taylor, Ltd., 43 Lower Mosley Street, Manchester. Water-heating boilers for heating, warming and like installations.

13,226. June 7, 1913.—George Gwilt, 141 Felsham Road, Putney, S.W. Apparatus for generating, cooling and storing acetylene gas.

15,740. July 8, 1913.—J. S. Rigby, 26 Bagot Street, Wavertree, Liverpool. Apparatus or machines for making concrete posts, props and similar articles.

17,115. July 25, 1913.—Dated under International Convention Aug. 7, 1912. A. F. Talbot, 218 Armagh Street, Christchurch, N.Z. Step ladders, trestles, and the like.

17,537. July 31, 1913.—Alfred Golds, Wellington Barracks, Hong Kong. Hinges for casement stays, casement hooks, &c.

18,639. Aug. 16, 1913.—David Thomas, 39 Metal Street, Roath, Cardiff; Tom Williams, 11 Brighton Road, Redland, Bristol; and W. F. Skinner, 2 Wellfield Place, Roath, Cardiff. Means for regulating the raising and lowering of windows.

19,468. Aug. 28, 1913.—Arthur Heywood, Highfield Terrace, Hill Top, and J. W. Sykes, Birdacre House, Gomersal. Manhole frames of drainage inspection openings and the like.

20,816. Sept. 15, 1913.—T. K. Irwin, 5 London Wall Buildings. Apparatus for the treatment of sewage and other waste liquids.

24,545. Oct. 29, 1913.—Guido Baggio, 35 Via Carlo Alberto, Turin. Apparatus for tracing dotted lines.

25,142. Nov. 4, 1913.—E. E. Beck, 2740 North California Ave, Chicago, Cook, U.S.A. Cutting implement (especially for severing pipe).

25,947. Nov. 12, 1913.—G. R. F. H. Cuntz, 2 Nachtigallenstr, Hamburg, and the Firm Schacht & Westerich, 18-20 Grosse Backerstrasse, Hamburg. Slide rules.

2,732. Feb. 2, 1914.—Oxygenated Stove and Heater Co., Ltd., 193 Victoria Street, Toronto. Gas cooking stoves.

9,580. April 23, 1913.—Emil Lange, Hollandischestr 95½, Kassel, Germany. Concrete poles, pipes, posts and the like.

10,394. May 2, 1913.—Alix Charlier, Morialme, Belgium. Oven with concentric chambers for the ceramic industry.

13,008. June 4, 1913.—Siegfried & Max Blogg, 1/5 Kaffamacherreihe, Hamburg. Seat guards for closets.

8,828. April 15, 1913.—A. P. Percival, Bodawen, Portmadoc, North Wales, and F. E. Matthews, Ph.D., F.I.C., 7 Staple Inn, Holborn. Treatment of slates and the like.

Any of the above specifications may be obtained from J. D. Roots & Co.

Correspondence

[The Editor will not be responsible for the opinions expressed by Correspondents.]

The Ancient Monuments "Department."

Sir,—In your "Notes and Comments" in your issue of May 1 you speak of the Ancient Monuments Department of H.M. Office of Works while commenting on Westminster Hall roof. It has already been pointed out in the Press there is no such "Department." The continued use of such a term only serves to foster a deception that is being practised on the public. That there is no such "Department" an examination of the Civil Service Estimates will prove. In Class I. of the estimates the Maintenance and Protection of Public Historic Buildings and of Ancient Monuments are two sub-heads of a general heading, Maintenance and Repairs, which includes such items as wages to stokers and uniforms for police. Class II. deals with salaries, but the only staff that is specifically identified with ancient monuments in the five divisions into which the salaries of officials of H.M. Office of Works are divided is the four inspectors.

Two years ago Lord Beauchamp officially announced in the inspectors' report the creation of a special staff to deal with the work of preservation. Later, over a year ago now, he promised during the second reading of the Ancient Monuments Protection Bill to form a separate department. A special staff is, therefore, obviously not what he meant when he promised a separate department. In reality, the work is performed by a branch under a principal architect, who deals, amongst other disassociated matters, with inland revenue and miscellaneous legal buildings.

For those who do not understand the niceties of official nomenclature it will be as well to explain that the distinction between a branch and a department is that in the latter the staff is not interchangeable, as a matter of office routine, with that of another department. For instance, an official who has had no experience of work on ancient monuments could not suddenly be placed, on account of promotion or what not—known euphemistically in the Civil Service as "the exigencies of public service"—in charge of the work. Only the few who have been engaged on the work of preservation and, therefore, realise how specialised it is and how much experience counts in carrying it out, understand the importance of this distinction.

Perhaps some day in the dim and distant future, after the House of Lords has been reformed and many other things have happened, Lord Beauchamp, if he be then in power, may remember his promise to fulfil it. The Treasury, always on the look-out for economy, may then take the occasion to stop the present overlapping of work by amalgamating the Royal Commissions on Ancient and Historical Monuments with the new department. However that may be, until a separate department is set up there will be no safeguard against the work of preserving our national monuments falling into inexperienced and dangerous hands.—I am, &c.,

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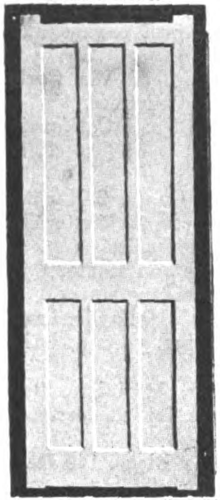

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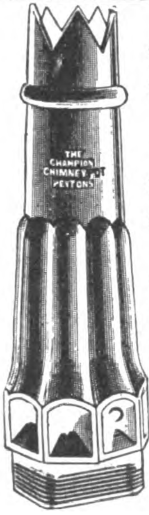
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THE ARCHITECT

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FORTHCOMING EVENTS.

Friday, May 22.

Surveyors' Institution: Country Meeting at York (two days).

Saturday, May 23.

Architectural Association: First summer visit to "Bassetts," Farnborough, Kent (Mr. Maurice E. Webb, M.A., architect), to meet at London Bridge 2.20 P.M.

Edinburgh Architectural Association: Visit to Dalzell Castle, Motherwell, to meet at Princes Street Station, 1.20 P.M.

Monday, May 25.

Surveyors' Institution: Annual General Meeting and presentation of prizes by the President at 5 P.M.

Thursday, May 28.

Concrete Institute: Fifth Annual Meeting at 4.30 P.M.

Concrete Institute: Fourth Annual Dinner, Connaught Rooms, Great Queen Street, at 8 P.M.

ENTENTE CORDIALE AND ARCHITECTS.

DURING the last week-end English architects and English architecture—in the form of photographs and drawings—have returned the visit of last year made by their French colleagues. This return visit has been organised by the Société des Architectes Diplômés par le Gouvernement, and embraced various social functions as well as an exhibition of architectural work. On account of the coincident visit of the King and Queen of Denmark to Paris, the original arrangement by which the President of the French Republic, M. Poincaré, was to open the exhibition was altered, and M. Paul Jacquier, Under-Secretary of State for Fine Arts, performed the ceremony on Friday last, accompanied by M. L. J. Blocq, chief of his department, and M. Paul Léon, chief of the architectural section. There were present at this function MM. Jacques Hermant, president of the Société des Architectes Diplômés par le Gouvernement; Héraud and André Bérard, vice-presidents; Defrasse, past president; Jules Godefroy, past vice-president, and Thollmy, general secretary of the Société. MM. Pascal, Bernier, Charles Girault, Laloux, and Paulin, members of the Institut de France, and other eminent French architects, were also present; whilst England was represented by Mr. Reginald Blomfield, R.A. elect, president, and Mr. Ernest Newton, A.R.A., vice-president of the R.I.B.A., Mr. W. Curtis Green and Mr. Gerald Horsley, the present and immediate past-president of the Architectural Association; Messrs. J. A. Gotch, Geoffry Lucas, Robert Atkinson, Cart de Lafontaine, Alick Horsnell, F. R. Yerbury, secretary of the Architectural Association, and others. M. Jacquier, after a long and thorough inspection of the exhibition, warmly congratulated the organisers on the excellence of the collection of drawings and photographs.

On the Friday evening a banquet, given in honour of the British architects by the Société des Architectes Diplômés par le Gouvernement, was presided over by M. R. Viviani, Minister of Public Instruction, and attended by Lieut.-Colonel Aubert, officer of the military establishment of the President of the French Republic, Mr. Myron T. Herrick, the United States Ambassador, and some 300 other guests. Congratulatory speeches were made by M. Jacques Hermant, president of the Société, Mr. Reginald Blomfield, the American Ambassador, M. Laloux, and M. Viviani, the chairman, who took the opportunity of distributing decorations from his Ministry to several French architects and to Messrs. Reginald Blomfield, Ernest Newton, Curtis Green, Gerald Horsley, and Cart de Lafontaine. After the banquet an orchestral concert was given by "Le Violon d'Ingres," an amateur musical association of students of the Beaux-Arts, painters, architects, sculptors, and engravers.

On Saturday an excursion was made to Versailles, when the British visitors were accompanied by members of the Société and a number of ladies. The morning was devoted to a very thorough inspection of the interior of the palace, including several parts to which, ordinarily, access is not given to the public. M. de Nolhac, keeper of the palace, acted as cicerone, and lucidly explained the several points of interest, both historical and æsthetic. After luncheon, an extended and rather fatiguing tour, under the guidance of M. Chaussemiche, architect to the Palace of Versailles, was made of the gardens, with their temples, arbours, bosquets, and fountains, including a visit to the Grand Trianon and the Petit Trianon. Especially notable from an architectural point of view was the orangery, the simple severity of which was highly appreciated by contrast with the luxuriance of the interior of the palace seen in the morning.

Sunday morning was devoted to a visit by many, though not all of the British representatives, to the Salon of the Société des Artistes Français, when M. J. Mora, general secretary of the Syndicat de la Presse Artistique, reduced the overwhelming vastness of the exhibition to reasonable proportions by pointing out the most notable works in the various sections—sculpture, architecture, and painting. The afternoon was spent by various small groups in visiting the architectural exhibition, the Ecole des Beaux-Arts, which was rather disappointing, as no special privileges were accorded, and other interesting features of Paris.

For Monday the programme arranged by the Société "en l'honneur de nos confrères Anglais," provided an excursion to Fontainebleau, which proved a pleasant day's outing and less strenuous than the visit to Versailles. The interior of the château was viewed under the direction of M. Redon, chief architect to the château, and the concierge, whose explanations were such as might be considered interesting to members of the general public rather than to cognoscenti of architecture and other arts. A drive through the forest in the afternoon was an enjoyable interlude.

Monday should have completed the programme of social functions according to the original intention, and several of the British visitors ended their participation by reason of other engagements; some had broken down under the stress, notably Mr. Geoffry Lucas and Mr. Cart de Lafontaine, whose hard work in preparing the exhibition added to the strain of entertainments brought about a collapse. But the promise of M. Poincaré to pay a formal visit to the exhibition on Tuesday necessitated the further presence of the chief representatives of British architects.

The exhibition of photographs and drawings arranged in the rooms of the Jeu de Paume in the Place de la Concorde, which has been got together by the exertions of a joint committee of representatives of the Royal Institute and the Architectural Association, and has entailed an immense amount of hard work on Messrs. Curtis Green, Gerald Horsley, Geoffry Lucas, Alick Horsnell, W. Walcot, Robert Atkinson, Cart de Lafontaine, and F. R. Yerbury in particular, may be fairly described as an excellent representation of British architecture, and one which gives us pride in the position of Britons in the world of art. The exhibition is divided into several sections:—Modern English architecture; official architecture; works of deceased architects of the nineteenth century; modern Scottish architecture; water colours and other sketches; an historical section under various groups, Mediæval and late Gothic, Elizabethan and Jacobean, later Renaissance and Classic, London churches of the seventeenth and eighteenth centuries, Classic monumental architecture in Great Britain and Ireland during the eighteenth and nineteenth centuries; the colleges of Oxford, Windsor Castle, old gardens, English cathedrals. There are also included comparative collections of students' drawings, British from the R.I.B.A. prize-winners, the Royal Academy School, the Architectural Association, University College, London, the first (London) atelier of architecture, Edinburgh School of Art, Liverpool University, and the Glasgow schools; and French from the students of the upper school of the Beaux-Arts de Paris. We shall have more to say in detail regarding the exhibition on a future occasion. For the present we can only say that the primary object of the exhibition, as expressed by M. Jacques Hermant, president of the Société des Architectes Diplômés par le Gouvernement, has been attained, and that the development of English architecture has been adequately displayed for the artists and amateurs of the art in France.

NOTES AND COMMENTS.

THE meaning of the two well-known decisions of the House of Lords on ancient lights, which may be taken as the leading cases on the subject—Colls *v.* the Home & Colonial Stores, Ltd. (1904), and Jolly *v.* Kine (1907)—has been reviewed in the decision of the Judicial Committee of the Privy Council on an appeal from a decree of the High Court of Bengal, affirming a decision of Mr. Justice Stephen in the case of Paul and another *v.* Robson and another. Mr. Justice Stephen adopted the words of Lord Davey in expressing his opinion in the Colls' case: "The owner of the dominant tenement is entitled to the uninterrupted access through his ancient windows of a quantity of light, the measure of which is what is required for the ordinary purposes of inhabitancy or business of the tenement according to the ordinary notions of mankind. The single question in these cases is still what it was in the days of Lord Hardwicke and Lord Eldon—whether the obstruction complained of is a nuisance?" This explanation might be supposed to express the law subject to the definition, which practice shows to be difficult, of a "nuisance." An unfortunately-worded decision of Mr. Justice Kekewich in the Jolly *v.* Kine case has led to some attempts to disturb the criterion of damage. His lordship found as a fact that the obstruction in the case amounted to a nuisance, although he said that the room affected was "still a well-lighted room." In "the ordinary notions of mankind" it is difficult to conceive how a well-lighted room can be the subject of an obstruction amounting to a "nuisance." Subsequent judges have, therefore, set themselves to whittle away Mr. Justice Kekewich's standard of a "well-lighted room," and the latest decision upholds the view of Mr. Justice Stephen in adopting the opinion of Lord Davey, above quoted.

The destruction by fire of a block of six cottages on the Elmsthorpe Kirkby Mallory estate of Lady Lovelace, following on the recent conflagration in Essex, must, we fear, hasten the day when the comely thatched roof will no longer adorn the countryside. These cottages were built some eighteen years ago. Falling sparks from a chimney-fire set the thatch alight, and the flames spread rapidly; and before the fire-brigade from Hinckley, some two and a half miles distant, could grapple with the outbreak, very little of the cottages, except the walls and chimneys, remained standing.

The duty of an Opposition is to oppose, and, therefore, we may presume that Lord Curzon was making the best opposition he could when he called attention to the estimated expenditure on the capital of the Government of India at Delhi, and moved for papers. He said that the matter was of great importance, because it directly affected the revenues of India. The selection of the southern site had been subjected to a good many caustic comments, but he trusted that the gloomy anticipations would not be fulfilled. It was a remarkable fact that in the three reports of the Town-Planning Committee, which consisted of English experts sent out to advise the Government of India in connection with this matter, no estimates of the cost of the new capital were given. He did not know what the preliminary estimate was, but if rumour spoke accurately it amounted to many more millions than the figures they were now asked to consider. Many doubts had been freely expressed in India and elsewhere as to the cost which was finally to be entailed. In the original despatch of the Government of India the estimated cost was mentioned at £4,000,000; but the Viceroy, in a speech made at Delhi in March, admitted that that sum was an underestimate. His revised estimate of what he thought the cost would be amounted to £5,113,620, to which he added £1,000,000 for unforeseen contingencies and expenses. The estimate included cost of buildings, communication, parks, &c., irrigation, water supply and drainage, purchase of land, Government House, Central Offices, &c. The estimated cost of these items showed an increase of 50 per cent. upon the figures which were confidently submitted two years ago. The whole of the new estimate was for the cost of works at the new city of Delhi alone, whereas the original £4,000,000 was to cover the entire transference of the Government of India to Delhi. The £6,000,000 for which they were now being asked included no part of the cost of the temporary Delhi, the cost of the proposed military cantonment, the cost of the reconstruction of the railway, or the cost of the sanitary improvement of old Delhi. These were items which ought to have been included in the Viceroy's estimate, and borne by the Government of India. Whether the policy of the Government was right or wrong there could be no doubt that it would be very costly. So far from its being possible to carry it out for the six millions of the estimate, in his view India would get off cheaply if the cost to her taxpayers was anything less than fifteen or sixteen millions. If he felt that, as the result of the change of capital, it would be possible to govern India more sympathetically and effectively, he would not grudge this expenditure, large as it was; but he believed that by being transferred to Delhi the Government would be taken out of the main current of national life, and that merely an official capital would be created on an arbitrary and artificial site. He thought that the feeling was steadily growing in India that Delhi was an unsuitable place for the capital of India, and that it would not be much more than the ceremonial headquarters of the Government during the winter. In commercial circles people were asking themselves whether it was wise to spend all these millions on the establishment of a new capital at Delhi when so much money was wanted for the ordinary instruments of social progress, education, sanitation, irrigation, and police, to say nothing of the eminently commercial purposes of railways, jetties, and wharves.

And equally, of course, Lord Crewe, in reply, pointed out that, in the first place, it was possible to arrive at quite a different conclusion as to the proper sum which ought to be charged to the change of capital. He did not think that it was reasonable to put down to the change of capital all the charges incurred in Bengal and in Calcutta, for the reason that many of these charges would have been incurred if the Government of India had remained at Calcutta. The noble Earl had drawn attention to the fact that the original estimate of four millions had been exceeded by rather more than two millions—one million for projected expenditure and one million for contingencies. He could not see how anybody could complain about the Government of India, as that Government had never stated what their estimate of the expenditure really would be. The noble Earl spoke of old Delhi as a plague spot, which obviously could not be permitted to exist alongside the new city, and, therefore, it had to be improved at vast expense. The Government of India ought not to allow a plague spot to exist anywhere, and even if the capital had not been changed, it would have been necessary for the Central Government to deal with the insanitary area of old Delhi. He had been asked whether separate accounts for Delhi would be issued each year. It was impossible to say in what form that could be done, but he agreed that the actual expenditure should be made clear each year, and he would promise to consult the Government of India as to the manner in which that could be most clearly done. Though no doubt the view was held by many people that the money might have been better spent for more utilitarian and practical purposes, he did not share that view, but was disposed to think that the money would be well spent for the reasons which were stated when the change of capital was decided on. He believed that that view was favoured by the majority both of Europeans and natives in India. Lord Hardinge was convinced that the transfer of the capital to Delhi was most desirable, and would be a marked advantage from an administrative point of view; and the Government of India, so far as they had been able to judge at present, were completely satisfied with the results of the contemplated change.

But it is a pity that matters of art and public health and convenience should be the plaything of political polemics. Which, as things now are, makes us doubt whether a Ministry of Fine Art would be altogether a success in this country unless it were in some way freed from partisan attack and defence.

ARCHITECTURE AT THE ROYAL SCOTTISH ACADEMY.

The Royal Scottish Academy has now entered on its eighty-eighth annual exhibition, the doors of the fine gallery buildings in Princes Street, Edinburgh, being thrown open to the public on Saturday, the 19th inst.

Architecture at the Royal Scottish Academy is usually of a most interesting character, inasmuch as it contains the works of most of the best-known Scotch architects, who usually refrain from exhibiting at the Royal Academy. This year, however, Scotch architecture seems to be more or less conspicuous by its absence, probably due to the dearth in building of monumental and other important works generally. French and English works occupy a more than usually large proportion of the wall space.

Perhaps the most important work exhibited is a magnificent conception for a Royal sepulchre by Mr. Paul Eugène Victor Delaon, which occupies about 10 feet length of wall space. The visitor's attention is immediately attracted towards this work, as it displays more than usual breadth of treatment, and is exceedingly well rendered in the usual Beaux-Arts manner, without in any way being overdone. The sepulchre forms the tail end to a great cathedral, and is connected to it by an open arcade, which runs through the central axis at the east end of the cathedral.

The sepulchre itself is a rectangular block with projecting bays on each side except the one where the loggia enters off. The central portion of the building is divided up into four massed groups of piers and columns, which support the great dome under which the Royal tomb is placed.

Messrs. John Burnet & Son are represented by a charming Walcot perspective of the Wallace Scott tailor workshops, Cathcart. The building is a large square block of the factory type, four storeys in height, built of red facing brick. The lower storey forms the base to the building, being more or less solid, while the upper three storeys have a vertical treatment of brick piers running right up the three flats. The window spaces between also run right up, being intersected at each floor by iron or steel bossings in regular factory style. The corners of the building are marked by pavilions, a resemblance to which can be traced to the corner treatment of the new façade to the British Museum. The building has a fine setting, the perspective being a distant view of the block, with fine broad green parks in front and the river Cart winding round with a big sweep in the near foreground. The building expresses its purpose well, and although devoid of elaborate architectural detail one can detect even in its simplicity the touches which mark Dr. Burnet's work.

Another fine drawing exhibited is an interior view of the late John Belcher's design for South Kensington Museum. The interior, which is by Mr. B. McGuiness, R.H.A., has a fine, spacious, lofty effect, the ceiling being of great height, with a fine coffered dome in the centre and great side arches coffered also. The drawing is a fine study of light and shade, rendered in a pictorial manner, and is quite an outstanding exhibit.

Wallingford Court, Berkshire, by Messrs. Detmar Blow & Fernand Billerey, is illustrated by another of Mr. Walcot's blue-sky sunlit perspectives. This drawing has been on exhibition before, and represents the front view of a large house, straightforward in design, although it seems to lack slightly in originality and interest.

Alongside this work is one of Mr. Chas. Gascoyne's perspectives of No. 129 Grosvenor Road, S.W., by Messrs. G. & A. Gilbert Scott. The view is from the loggia looking towards the river, and appears to be an evening effect. The loggia forms three sides round a paved court, the open end being towards the river, affording a magnificent view of it.

Sir Robert S. Lorimer, A.R.S.A., is not strongly represented this year. The two pencil perspectives of a cottage at Colinton are nicely rendered, with a clean, strong touch about them, but his sketch for a proposed Cross, Paisley, seems rather sketchy and weak in character.

The superiority of English draughtmanship over that of French is strongly marked in the large ½-inch scale detail of Mr. John Reginald Truelove's premiated design for the Port of London Authority. This drawing, which is a detail of the main entrance, is hung in the centre of one of the walls, and on each side and above it are hung the drawings of a French design by Mr. Gaston Castel for a chamber of legislation. Mr. Truelove's drawing displays very fine draughtsmanship, and is exceedingly well rendered, with shadows done in black and white wash, and is quite the best wash-drawing of its kind in the room.

The French design, although well proportioned and broad in treatment, seems to be "done to death" in the rendering, and certainly does not come up to the high standard of draughtsmanship of Mr. Delaon's Royal sepulchre already mentioned.

Mr. James Miller, A.R.S.A., shows two large interior photographs of the Institute of Civil Engineers, the one a view of the upper hall from the staircase, the other a view of the upper hall only, the latter being much the better view. Both are quite interesting, although there is a certain lack of refinement in detail.

Mr. A. N. Paterson, M.A., A.R.S.A., has one or two photographs of the new general offices, Scotstoun, for the Albion Motor Car Co., Ltd. The exterior is quite characteristic of his work, and not outstanding in design. The interiors are very simply treated in a quiet manner, and have quite a pleasing effect.

Mr. Hippolyte J. Blanc, R.S.A., shows two sketches, one in colour of a house at Midcalder, another in wash of a house in Mid-Lothian; but both are not very strong in design, and are rather weak in rendering.

A memorial church at Forfar, by Messrs. Alexander Marshall Mackenzie, A.R.S.A., & Son, is quite good, as also is Mr. J. M. Dick Peddie's interior views of Melrose parish church. Mr. James A. Morris, of Ayr, has one or two delightfully coloured drawings of a church at Troon and private chapel, Dumfriesshire, which are very attractively rendered, and well worthy of attention. Other very fine church interiors are shown by three photographs of the church of St. John the Evangelist, Princes Street, Edinburgh, by Messrs. Peddie & Forbes Smith.

Special wall space has been given to a number of photographs and original coloured perspectives by the late John Honeyman, LL.D., R.S.A., of Glasgow. These works include a frame of six photographs belonging to the Glasgow Art Galleries and Museums Committee, also his competitive design for Houses of Parliament, Sydney, N.S.W.

The coloured perspectives appear rather old-fashioned in their colour and style of rendering, but are worthy of study, as also are the photographs, being representative work done by the late architect.

Throughout the room there are one or two *important* studies worthy of notice on account of their fine draughtsmanship, such as Mr. Charles Rogers' work, taken from the church of Brou, Ain, and representing the re-establishment of the Virgin's seven joys, and Mr. Gaston Castel's study of Count Ugo's tomb at Florence, from the church of the Badia.

LONDON COUNTY COUNCIL.

New Sessions House.

At this week's meeting of the London County Council Mr. E. Smith asked the Chairman of the Local *Government* Committee what steps were being taken to secure the building of the new Sessions House at Newington, and at what date the building was likely to be ready for use.

Mr. L. W. S. Rostron (chairman of the *committee*) replied that, owing to the dispute in the building trade, the committee had deemed it advisable to defer the issue of tenders for a time. Tenders, however, had been invited, and it was proposed to seek the authority of the *Council* to have them opened *and* examined during the Whitsun recess. He regretted that, in view of the circumstances in which the tenders had been invited *i.e.*, alternative quotations for a specified period he was not in a *position* to name a date on which the *committee* would report to the Council.

New County Hall.

The extent to which progress on the new *County* Hall is being hampered by the lock-out *in* the London building trade was disclosed by Mr. Debenham, the chairman of the Establishment Committee, in reply to a question by Mr. Courtauld. During the week ending April 22, said Mr. Debenham, only seventy-five *men* were employed. The figures for the three succeeding weeks were as follow: April 29, eighty-eight men; May 6, seventy-nine men; May 13, seventy-four men, or an average of *seventy-nine men* per week.

COMPETITION NEWS.

Burnley.—The Board of Management of the Victoria Hospital have selected twelve architects to send in designs for the extension of the hospital. Fifty-seven architects made application.

Calcutta.—The Bengal Chamber of Commerce in December last arranged a competition for designs for the new Calcutta Royal Exchange. Mr. John Begg, F.R.I.B.A., consulting architect to the Government of India, who acted as assessor, has selected the design by Messrs. Stevens, Gregson & Co., architects, Bombay. The other competitors were Mr. Vincent J. Esch, Licentiate R.I.B.A., of Calcutta; Messrs. Hall Batley & Co., of Bombay; Mr. R. D. Nicol, A.R.I.B.A., of Calcutta; Mr. Ed. Thornton, F.R.I.B.A., of Calcutta; and Mr. S. Wilkinson, Licentiate R.I.B.A., of Calcutta.

Dundee.—Mr. Alex. M. Paterson, architect, Glasgow, has just been appointed by Dundee School Board assessor in connection with the competitive plans for a new school to be erected in Bellfield Street.

Glasgow.—Sir George Frampton, R.A., has made his award as assessor on the various competitive models of symbolical statuary received by the Corporation for the four abutment piers of the new bridge at Radnor Street, Kelvingrove Park. The design (No. 20) by Mr. Paul R. Montford, Anhalt Studio, Albert Bridge, S.W., has been adopted by the Corporation. Premiums of £50 and £25 respectively have been awarded to Mr. A. Proudfoot (No. 17), of Glasgow, and Mr. R. Garbe (No. 5), of London. The designs will be on view at the M'Lellan Galleries until to-morrow (May 23).

Hythe.—Members of the Society of Architects are requested not to take part in the Hythe Concert Hall *competition*, the conditions of which are not in accordance with those approved by the Society.

Keighley. The Education Committee have decided to invite architects residing or carrying on business in Keighley to send in competitive plans for proposed extensions at Worth Village school.

Mold. The design of Mr. John D. Lewis, architect, of Denbigh, has been adopted by the Urban District Council for a fire station and caretaker's house proposed to be erected at Earl Road. There were twelve competitors.

Penzance. The Town Council resolved last week by nine votes to seven to invite competitive *plans* for workmen's dwell*ings* proposed to be erected on the Weeths Field at a cost of about £6,000.

ILLUSTRATIONS.

NEW CENTRAL BATHS, PADDINGTON, W.

The problem set to the competitors was to provide a set of swimming and private and Russian baths, and at the same time so plan the first-class swimming bath that it can in the winter months be floored over and used as a large *central* public hall. The prominence thus given to this public hall was of the utmost importance, for it was a stipulation that it must be so self-contained that it would *not* in any way interfere with the carrying on of the rest of the bathing establishment, including the second-class bath, during the winter. The importance attached to this hall necessitated designing the whole so as to give it the appearance of a public building, and the author has endeavoured to combine these requirements without unnecessary expenditure of money *or superfluous embellishment.*

Our plates show the winning design by Mr. Harold Burgess, of Queen Anne's Chambers, Broadway, Westminster, S.W., which was submitted *in competition* and selected by Mr. Leonard Stokes.

OXFORD COLLEGE SERIES.—NO. 140.—MANSFIELD.

Our illustration this week of Mansfield College shows a view of the interior of the Senior Common Room.

Mr. Gilbert A. Ramsay has been selected out of a large number of applicants for recommendation to the Glasgow Corporation as Superintendent of the Glasgow Art Galleries and Museums in *succession* to Mr. James Paton, retired. Mr. Ramsay, who is thirty-three years of age, was born and educated in Greenock, studied architecture at the Glasgow School of Art, and was a pupil of Mr. William Leiper, R.S.A. Thereafter he assisted Mr. James Miller, A.R.S.A. After travelling abroad he went to London in 1907 as assistant to Mr. Charles Aitken, whom he succeeded in 1911 as director of the Whitechapel Art Gallery, the position which he occupies at present. The salary is £500, rising by annual increments of £25 to £700 per annum.

The Exeter Diocesan Architectural and Archæological Society held their annual meeting last week. The report commented on the scheme submitted by Mr. Thomas H. Mawson, Hon. A.R.I.B.A., for the improvement of Exeter. The committee express the opinion that however suitable such a scheme might be for a new city, it was entirely unadapted for an ancient city like Exeter, and out of keeping with the relics of the past. No one could object to see that abode of chill and gloom, known as the Higher Market, disappear, but they did not desire to see it superseded by buildings entirely out of keeping with their surroundings. The committee are of opinion that no so-called improvements could compensate for the destruction of such an ancient and interesting fabric as the church of St. Pancras, as was contemplated by the scheme, and were considering in what form they might most effectually enter the protest of the Society against that piece of vandalism. The Society had had to save St. Pancras before, and it was hoped that they might be successful this time.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

AN ordinary meeting of the Royal Institute was held at Conduit Street on Monday last, the 18th inst. Mr. H. V. Lanchester, Vice-President, occupied the chair.

Mr. Max Clarke, rising in connection with the signing of the minutes of the previous meeting, asked if in view of the absence of any reference to the abortive meeting held last Monday he would be in order in moving that further consideration of the subject be postponed for six months. He wished to show, he said, the complete indifference of the Council and the members of the Institute to it. He considered it would be a most unfortunate thing if such an important thing as the revision of the scale of charges were passed by a mere quorum of forty representing a membership of some four thousand.

Mr. George Hubbard, Vice-President, contended that such a resolution would be out of order in view of the decision the Council had come to that afternoon.

The Chairman, in reply, announced that the subject will, according to the decision of the Council, be considered at the next general meeting to be held on June 8.

Mr. Wm. Woodward interpolated that he for one, as a member of the Council, was not indifferent to the matter.

Mr. E. Guy Dawber, hon. secretary, announced the decease of Mr. Richard Creed, Fellow, and Mr. J. Tebbs Bottle, Associate (1365). It would not be fitting, Mr. Dawber continued, to allow a meeting like that to pass without making reference to the great loss which the building industry has suffered by the death of Mr. Thomas Holloway. All who had had the pleasure of doing business with Mr. Holloway would bear witness to his absolute integrity and honesty, and also the kind way in which he assisted all architects. Mr. Holloway possessed the happy knack of making both clients and their architects his friends.

The vote of condolence to Mr. Holloway was passed upstanding.

Mr. T. Raffles Davison then read a paper, illustrated by lantern slides, entitled

BEAUTIFUL LONDON.

London is beautiful. Its fine river, its trees, its parks and squares, its vistas, its teeming life, and its wonderful atmosphere fill it with pictures of never-ceasing, of ever-changing, charm. But London is also sordid, depressing, ugly, and smoke-laden. It is full of contrasts, violent, appalling, and picturesque. These contrasts appeal to us all, and I suppose we should some of us feel less interest in it if perfection reigned. People plead hard for its mud banks. Still, we make beauty our aim, and in the term beauty we include everything which goes to the general amenity and well-being of the city. This inclusive aim is the objective of the London Society.

The London Society.

It is, of course, unnecessary to make out a case for the necessity of creating and maintaining and constantly developing London as a great and beautiful city, but as to how it is to be done is a matter of very great moment indeed. There are three dominant considerations which affect the result: (1) The control; (2) the cost; (3) the incentives.

The London Society does not aim either to exercise the control or to find the money. It does, however, aim to do something very definite about the third of these points. It would, I presume, like to make and keep everybody very uncomfortable about the future of London until it has a very much brighter outlook than at present. This question of incentive is of the first importance, though I have placed it last; without it nothing will be done, and to provide it is an aim worthy of a great association.

The existence of the numerous bodies and of so many varied governing agencies for the amelioration of London gives one of the most powerful reasons for the existence of the London Society. The aim is to create a body of public opinion so catholic in its outlook, and so well judged in its action, that London may be guided by the best of all good counsels. Besides this, it is hoped to stimulate the desires and ambitions of the whole body of London citizens for the most perfect development of the city.

These ends can only be attained by a full and real combination of the best thought and effort amongst every class of the community. The last thing desired is to make it a society of architects, engineers, surveyors, or of any one preponderating class.

Coherent Action and Control.

The initial difficulty at present as to London is the lack of unity and coherence in its many-sided governments and control. It seems doubtful when and how this will be overcome. On the face of it there seems a clear absurdity that London should be made up of twenty-eight boroughs, with their separate methods of administration and rates, even though they may be so dissimilar in their amenities and population as Westminster and Highgate.

The more one considers the many subjects in detail which affect the general amenity of London, the more one realises that a general and supreme authoritative control is of vital importance. Amongst the many debatable points to be considered is the attitude of the Government to the capital city of the Empire. We think that such a city as London ought to receive very substantial contributions from the Imperial Exchequer to do things which the overburdened ratepayer ought not to be taxed with. One of the permanent factors in the good government of London would appear to be that every citizen should be made to share in its burdens and responsibilities in fair and equal proportion, such as the unification of rates would tend to bring about.

Oversight and Design.

We should distinguish between the government of London and the control of its growth. A good system of government is not of itself enough. What is emphatically wanted is a continuous and insistent consideration of the problem involved in securing the best ideals of development. Even these ideals will necessarily be modified or changed in course of time, so that a task of this kind should last as long as the city endures.

The gravest indictment we have to bring against London is lack of foresight. To stimulate forethought is perhaps more important than to try to remedy existing evils, many of which seem nearly hopeless. Only by some far-seeing and statesmanlike control over all can every interest be kept in its right place and its due proportion. At present the prosecution of private business enterprise is transforming London at an alarming rate, and in a wholly haphazard way.

It is very easy for us to realise the folly of our forbears, for we see now clearly enough they threw away one magnificent chance after another. But we are doing the same thing ourselves. Because great improvements are very costly we keep them over till they become more costly or impossible. The only adequate legislation for London now is that which takes account of the progress which will be seen in fifty years to come, when the population and the area will have more than doubled, wealth enormously increased, and our present mean consideration of public improvements will be an impossible one.

The Railway Problem.

The railway companies obtained a free hand in laying down their lines and viaducts and stations from sixty to one hundred years ago because we could not foresee the marvellous progress made in travelling facilities, or that we should be wishful in 1914 to banish all steam-propelled railways from the city. It no doubt needs large courage and some faith in the future to attempt to fix limits and conditions for future railway enterprise. But can we contemplate a future in which these hideous viaducts and obtrusive stations and junctions are for ever to remain?

The way to anything like great and drastic improvement of London, more especially with regard to the south side of the river, is blocked at the very outset by the condition of the railways. May we not look forward to, and actively prepare for, a future when all our city railways will have to disappear below ground? Is it conceivable that we shall accept this terrible *statu quo* at Charing Cross, Ludgate Hill, Blackfriars, and London Bridge, where some of our finest city centres are hopelessly spoiled by these terrible nightmares of railway bridges?

Trafalgar Square.

Our attention is periodically called to the beauty of Trafalgar Square. In truth it has possibilities and some qualities even now. But it will never be a fine square so long as the Nelson Column remains—one of the most ridiculous monuments and effigies which has ever memorialised a national hero. We can never give Trafalgar Square a scale which will hold such a thing. Then the commanding site and dignified mass of the National Gallery is dominated by one of the most absurd pepper-box domes in London. When you look at the south side of the square everything is hopeless, though it might have been saved by a fine entrance to the Mall and a fine widening out of the Whitehall thoroughfare. The east and west sides of the square are not parallel, and the buildings which face them are only so good that they might be worse. The fountains are hardly less than ridiculous. Many suggestions have been made for the improvement of Trafalgar Square. The most essential thing of all is that the buildings which flank it to the east and west shall be of a decently dignified character, and so designed as to give balance to the Square. The unhappy fountains, raking wall, and the general lay-out ought to be improved. A central flight of steps up to the National Gallery might well replace the angle stairs.

Thoroughfares and Housing.

Schemes of improvement which more immediately affect the better districts are, of course, only one part of the whole problem; the fact is that such magnificent thoroughfares as Mile End Road have more of the elements of dignity and beauty than our ill-fated new streets like Shaftesbury Avenue, Charing Cross Road, and Northumberland Avenue, in which a proper scale is lost. The beautifying of some of the East End thoroughfares is practicable enough. Then, of course, housing schemes, bound up as they are with traffic problems, need a much nicer consideration than they usually have received.

The Mall Approach and King Edward Memorial.

The site for the King Edward Memorial has been the subject of much discussion, and the fact that this discussion has been re-opened in a most energetic way within the last two months shows how great is the dissatisfaction as to the site in Waterloo Place. The Memorial Committee have had a very difficult task, and they individually command the highest respect. But since their consideration of the matter a different state of affairs has arisen as to the opening out of the Mall Approach.

Here is a great processional road leading from the City to the Palace. Before the Palace stands the memorial to the greatest Queen who ever lived, and the processional road, the Victoria Memorial and the newly fronted Palace form a memento of the whole Victorian era. The late King Edward carried the burden of royalty through many years of that era. Such a King surely deserves to have a prominent place in our great memorials, and the most appropriate place would surely be as a frontispiece to the whole, at that point where the Mall entrance links the Palace with the City. Numbers of those whose opinion is at least as valuable as any in the land affirm that such a site is the only one possible. The symbolical significance and the architectural effect to be gained by such a site for the King Edward Memorial can surely not be denied.

At London Bridge.

The northern approach to London Bridge from King William's statue offered one of the finest chances we have had for generations. All the property on either side was coming in for rebuilding, and a fine scheme for a dignified architectural treatment was obviously called for. One would have thought some City Companies might have united to take over the old Pearl Assurance buildings and erect a fine building, such as would balance the dignified block of the Fishmongers' Hall on the western side. Instead of that, this incomparable site has been sold by auction, and it will probably be made a business success by building it well up into the sky and nearly shutting out from view the church of St. Philip Magnus and Wren's fine Monument.

City Centres and Spaces.

The open space about Constitution Hill and Hyde Park Corner bears very great possibilities which have been suggested by Professor Adshead and others, but it appears to be good enough for London as it is. At the Marble Arch something extremely fine might have been done, and in the strictly utilitarian character of what was accomplished there is a poor response indeed to the great efforts which a private citizen of London made to urge the adoption of a scheme worthy of so great an opportunity. Piccadilly Circus is a hopeless muddle. Wherever we turn we are confronted with the exasperating failure to appreciate and seize opportunities which would have given to London numberless points of interest and charm. Something is wrong, and to find out what it is and how things can be remedied is an aim of the London Society. That every scheme will pay in immediate cash returns like Northumberland Avenue it would be absurd to try and demonstrate. But in proportion to its size the civic pride of citizens in London is a drop in the ocean compared to Munich, or Cologne, or Dusseldorf.

The River.

I suppose if we were to theorise on the subject we should be inclined to say that the river banks in a town should always have been public property and remain so. But look at London now, and see what enormous outlay would be needful to bring about this very desirable state of things. The problem of the river, its traffic, its bridges, and its banks is a great one, and it will never be properly solved in the piecemeal way we do it. London Bridge has been widened and spoilt. Waterloo Bridge is too narrow and in a bad structural state. Blackfriars Bridge is spoilt by the railway bridge alongside it. We need a new road bridge at Charing Cross. We are improving Southwark Bridge, it is said unnecessarily. We are projecting a new St. Paul's Bridge before any related scheme of better town planning is devised in regard to it. A new Lambeth Bridge is proposed, and amongst the lot of them there is not one with covered footways.

Conclusion.

Under an appalling cloud of practical difficulties and necessities the idealist must find his way onward. Traffic, housing, building laws, sanitation, light and air, illumination, bad town planning, the long inheritance of past abuses and mistakes, rates and loans, Government, and, worst of all, politics confront his path at every turn.

The provision of fine schemes may be counted upon, but it is obvious they do not very quickly act upon the imagination of the citizens of London or their governing bodies. And here we come to the serious part in regard to the future development of London. By what means can it be made possible that adequate thought and study can be bestowed upon it, and power be created to carry out adequate far-seeing schemes? The work is so great, so complicated, and so costly that nothing short of a continuous and vigilant oversight by some body which will represent the most enlightened opinion of the day seems likely to cope with the problem.

You cannot study properly such a problem as that of the south side of the Thames unless you call in the advice of experts of many kinds.

We are all out to make money chiefly. It is a bad aim. But we need not deceive ourselves overmuch. Behind all this there is some sentiment and ideality still left. So we can count on sentiment, we can count on civic pride, and we may count on the increasing sense of people to understand that fine cities pay a rich return. The love, the hope, and the inspiration that her citizens feel about London are the forces with which we must work, and which we must keep for ever active.

DISCUSSION.

Mr. Carmichael Thomas, chairman of the Executive Committee of the London Society, in proposing a vote of thanks, said he had had the pleasure of working with Mr. Raffles Davison since the inauguration of the London Society, and he might say that he had never come across anyone so full of ideas, ingenuity, and imagination. It seemed to him that the London Society was a society of suggestion that they should go rather carefully, and that they should take someone like Mr. Raffles Davison, get his best ideas out of him, and then sit on his head. Some of the members were plain men in the street to whom the ideals of eminent architects were sometimes a little too high. There was, for example, plenty of room for improvement in Trafalgar Square; but he very much doubted whether it would be advisable to touch, as Mr. Raffles Davison had suggested, the monument to the national hero on the top of that ugly column. On points such as that the Society must proceed carefully. Personally he believed there was a very great future for the London Society.

Mr. Granville Smith, Mayor of Westminster, remarked that of course everyone present sympathised with the aims of the London Society. In that room he felt some difficulty in deciding whether he was expected to say something about the architecture of London as such, or whether he was to indulge in one of those delightful dreams of improving London which form the basis of the London Society, and which had just been expressed in a manner which he had never heard done so enthusiastically and in such a convincing spirit. He ventured, in his capacity as chief for the time being of one of the authorities that rule over the most important part of London, to tender to the lecturer his most sincere thanks that anyone should have conjured up before them an ideal which possibly some might have dreamt of, but which they had never thought to have had placed before them in concrete form, or a London audience to have received them with such approval. He thanked God he had lived to see that day. It was not so yesterday: if it had been so the audience would not have seen some of those horrors just shown to them on the screen. Yet London was a place to be proud of, to delight in—aye, it was a place to love. The lecturer had put before them some very difficult problems which could only be solved by pounds, shillings, and pence. And he did not seem to realise the difficulties which arose when in the twentieth century an endeavour was made to correct the errors of preceding ages. The question of cost prevented their correcting many. There was difficulty in their laws, there was difficulty in their mode of procedure. The various Borough Councils were not to blame for all that had been done. It was rather the previous ages and the lack of that civic sense which had blinded the eyes of their forefathers. With regard to Trafalgar Square, he could not see any use in Mr. Raffles Davison saying that the east and west sides were not symmetrical, for the Union Club and Morley's Hotel were the two things worth keeping. It was the Grand Hotel which was the blot and which ought to be wiped away. But how were the authorities to do it until they were armed with powers and told to go and beautify London? At present, if the Westminster City Council were to devote themselves to piling up the rates, they would be sent about their business. Personally he could claim to have spent some of the best years of his life in thinking over the problems of London. He had not been gifted with great administrative talents. Indeed, his had been a very humble part; but he might venture to say that it had been an artistic one. Far away above all other things was the necessity of arousing in London a greater perception of beauty in the lowest as well as in the highest citizens. Whenever he went abroad he found cultured English gentlemen able to talk with the most intense artistic conviction on all the beauties seen during the day. But these people were the élite of the nation. The common people were insufficiently trained to see beauty, and they were indifferent to it. In such a city as Munich, on the other hand, one felt that art permeated the people from the smallest individual to the highest pundit. The one thing to be done in London was to create a purer and a higher sense of art, and so to prevent the atrocities now to be seen.

Sir John Benn, London County Council, thought the lecture had been of a provocative character. They of the present undoubtedly had a grave responsibility towards the future. The London Society was doing a great work in stirring up the minds of the public. If a crime was about to be committed the Society had more or less courage to speak. The day would come when the city would be more united than now. They must have a hand in building up a city worthy from all points of view of their great Empire.

Sir Aston Webb, R.A., thought they of the London Society were greatly indebted to such men as Mr. Raffles Davison for their constant energy and enthusiasm. There were a good many members with wonderful energy and a real love for London. The delightful drawings showing the lecturer's improvement schemes which had been thrown upon the screen must have taken a very long time to do. They were the result of his enthusiasm. It was a little disappointing that Mr. Davison did not show any covered ways on the suggested bridges across the Thames; it seemed a brutal thing to expect ladies to cross a bridge without any such protection. At the present moment London was concerned with Southwark Bridge, St. Paul's Bridge, and Lambeth Bridge; if such a form of protection were not there provided at once it would be too late, for it must be a long time before such an opportunity arose again. The ideals of the London Society might be laughed at; but it was remarkable how often one gets what one really wants. The improvement of the dirty, smoky, underground railways used to be declared to be impossible. Yet it had all been done. There were still some splendid people who do much for London if a good case could be made out. He had come to doubt many of the existing conventional beliefs. For instance, it was the fashion to say that shopkeepers must have their ground floors arranged as continuous sheets of glass for the proper display of goods. As a practical people the public resignedly said, "What must be, must be." But the other day at a meeting of the London Society after that view had been freely expressed, Mr. Selfridge got up and disagreed, arguing that piers were an immense advantage for the display of goods. He had hopes, therefore, that the pendulum would swing the other way on that particular point at least. If goods were exhibited in an unbroken front of some hundred feet they all looked cheap. Continuous glass fronts ought certainly not to be allowed in streets of the importance of Regent Street. In Berlin they do not have them. Bonnets and blouses, like pictures at the Royal Academy, did not gain from being put close together. One of the objects of the London Society was to persuade people that such was the case. Shops like Debenham & Freebody's, Selfridge's magnificent premises, and Whiteley's extensions proved that this was the truth. Another change would occur when people demanded that they should be able to get, say, from Liverpool to the South Coast without changing carriages. The railway companies would have to carry their connecting lines across London underground.

Sir Laurence Gomme, F.S.A., suggested that the beauty of mediæval London was a factor to be taken into account in thinking of what modern London should be. In mediæval London it was considered an absolute crime to put up an ugly building. At the present day a new point of view seemed to be wanted. Mr. Raffles Davison had suggested such a point of view might be found in the relationship of one part of London to another, and that they would get a London which answered the purposes of its citizens, and that purpose should be of a beautiful as well as of a practical kind. As a small instance of what is tolerated he would mention the little excrescences of pavement in front of many shops which the ordinary citizen falls over. Instead of sweeping away these relics of a past era, they are allowed to go on. He was one of those who had suffered from his ideals during the whole of his life—ideals which could never be carried out. When the rebuilding of London was contemplated, or rather necessitated, by the Great Fire in 1666, there stood up in the House of Commons Colonel Birch, who proclaimed in a remarkable speech that London should be looked upon as one building estate and laid out on that system, and that landlords should be compelled to conform to that system. Birch declared that landlords would in the end benefit. At present they had all sorts of projects ready if the landlords would only combine and say what was good for London was good for them.

Mr. Ibberson considered the difficulties one was up against in dealing with the authorities were so great as to seem overwhelming. But there was another and greater difficulty, and that was in creating a race of architects with a sense of style. Unless they could get better work from architects, no amount of town planning would do good. In Regent Street the passer-by must be struck by the hotch-potch effect; some of the skylines were up, and some were down. This was not so with Nash's original scheme. Nowadays building owners seemed unable to get the right men to do the right thing: the man who could pull the wires got the jobs. All sorts of charming designs might be made on paper, but under existing conditions they would not get a really beautiful London.

The vote of thanks was then passed by acclamation.

Mr. T. Raffles Davison having briefly acknowledged the vote, the meeting terminated.

WREN'S CHURCH INTERIORS: THEIR DESIGN, EQUIPMENT AND DECORATION.

By H. DUNCAN HENDRY.

CHAPTER I.

INTRODUCTORY.

THE subject-matter of Wren's City churches has been so often dealt with that a paper traversing once more this well-worn ground almost needs some apology or explanation.

It might easily be imagined that amongst the countless works that have been written from time to time about these churches every shred and vestige of information that could possibly be gleaned from historical and topographical records, from the buildings themselves, or from any other source, has been fully noted and discussed.

It will be found, however, that with a few exceptions, such as Mr. Stratton's clever study of "Wren's Life, Work, and Influence," these treatises invariably comprise a more or less exhaustive summary of the chief features of interest in each building, accordingly as the appeal of the book is architectural, historical, or purely ecclesiastical.

Now, while these books are often quite admirable in themselves, they are primarily designed for those to whom a knowledge of architecture, or, rather, of the *history of* architecture, is a desirable adjunct to their general education, and whatever measure of success they achieve in pursuit of this object is of little interest to the professional student. Information, for him, must deal with such things as the principles of design, exigencies of planning, and the appropriate use of ornament; it must be of value to him in his professional activities.

It is no use telling an architect that a certain church "has a nave and side aisles separated by Corinthian columns." He can see it for himself, and probably a great deal more besides. It would be of much greater interest to him if he could learn why the nave and aisle plan was adopted rather than the open-area one, or the reason why the slender Corinthian order was employed rather than the stürdy Doric.

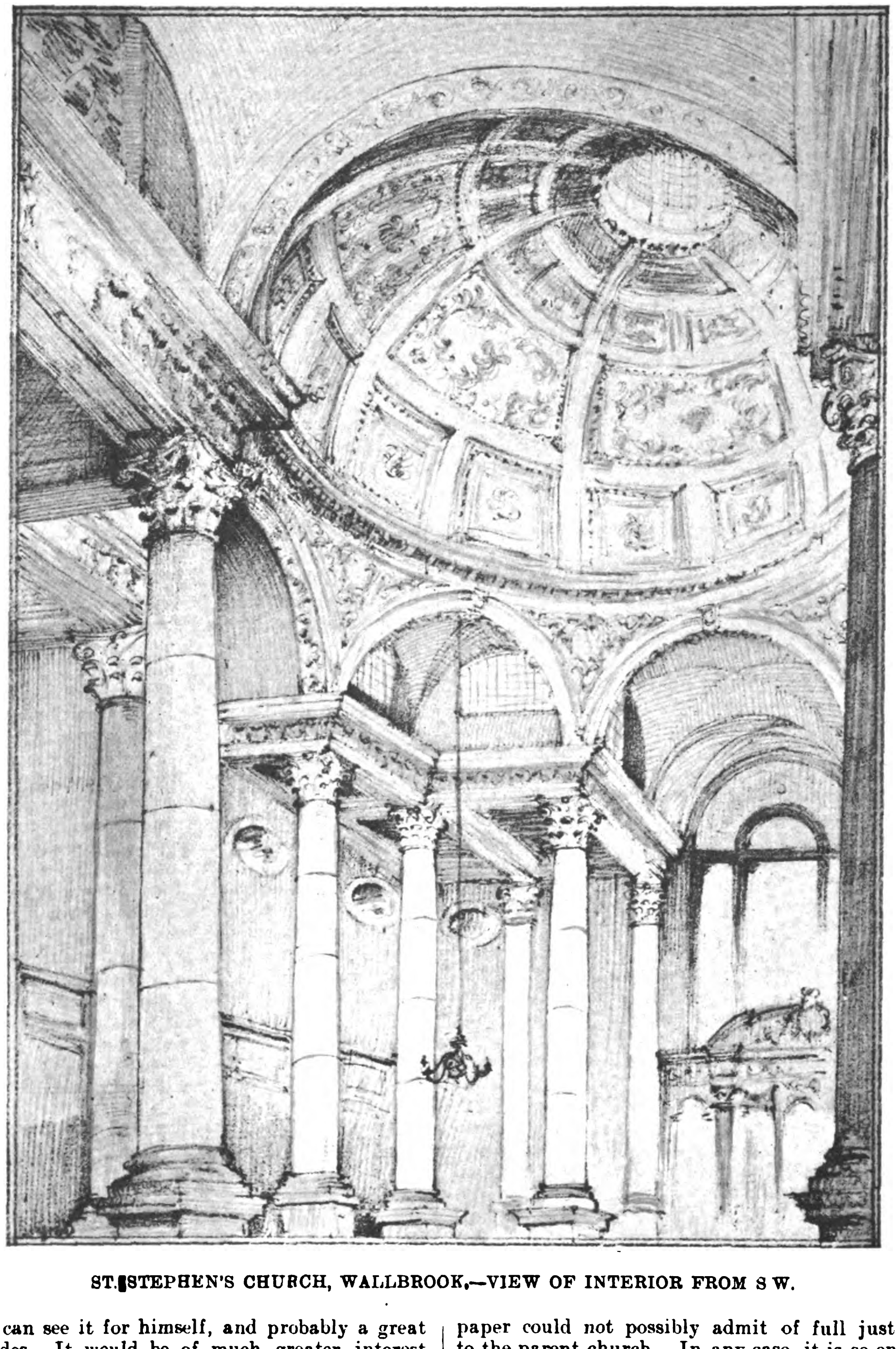
Again, the professional student would be much more grateful for a useful description of a beautiful organ-case than for the knowledge that a Mendelssohn or a Wagner had played upon and much admired the instrument contained therein. Bearing these observations in mind, some idea of the scope of this paper should now be considered. The subject is such an elastic one that the difficulty is to confine it to such matter as is necessary for a proper appreciation of Wren's activities in this particular direction.

In the following pages an attempt will be made to study the nature and principles of the work under discussion.

Reference will be made to the various arrangements of plan employed; the decorations of the buildings, such as in the different treatment of the orders, plaster ceilings, and wall panelling; and, finally, the disposition and design of church fittings, such as organs, pulpits, screens, fonts, &c., will be considered.

It may, perhaps, be as well to mention that no attempt can be made to include St. Paul's, as the scope of this paper could not possibly admit of full justice being done to the parent church. In any case, it is so entirely different that very little could be said in a comparative sense; for while the chief claim of the City churches on architectural interest lies very often in the treatment of small and confined spaces, and the judicious use of what ornament the funds at the architect's disposal (in many cases extremely limited) would permit, in the case of St. Paul's Wren had an unobstructed site, and in a comparative sense ample funds to draw upon.

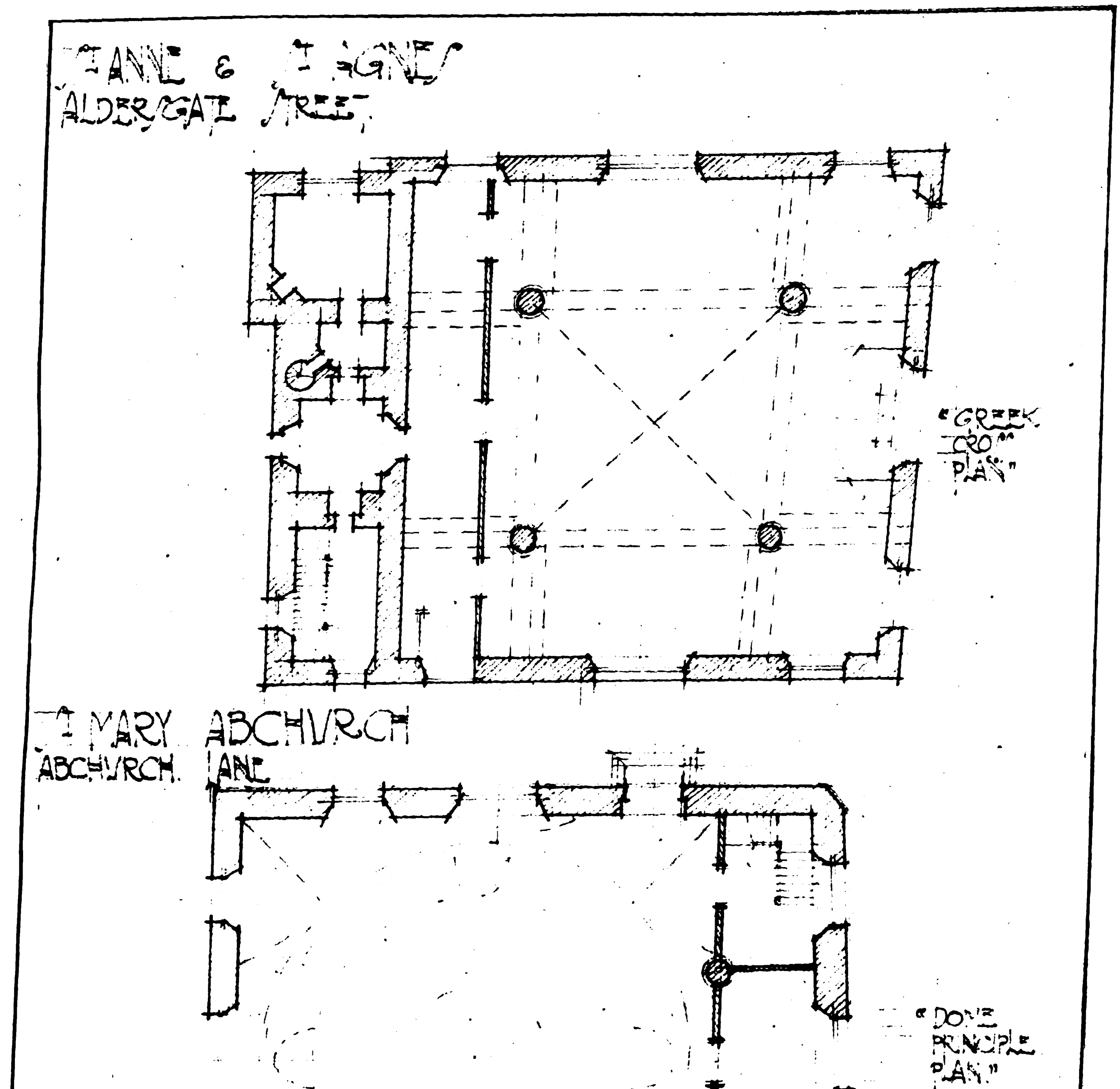
Having thus briefly outlined the extent of our paper, and before going into the matter in detail, it may be advisable to form some idea of the standard of religious thought



ST. STEPHEN'S CHURCH, WALLBROOK.—VIEW OF INTERIOR FROM S W.

in England towards the end of the seventeenth century, the period when most of the City churches were erected.

It must be recalled that they were all built within a space of about twenty-four years subsequent to the destruction of London by fire, in some cases on the sites and even foundations of the old churches, and in others on new sites.


ST. ANNE & ST. AGNES
ALDERSGATE STREET
"GREEK CROSS PLAN"
ST. MARY ABCHURCH
ABCHURCH LANE
"DOME PRINCIPLE PLAN"
GROUND PLANS
SCALE - 1 INCH = 16 FEET
H. DUNCAN HENDRY
DEL OCT. 1912

It has often been asserted that religion in England had sunk to a very low ebb at this period of her history, and that an age of irreverent materialism, if not of downright profligacy (the reaction of Cromwell's puritanical dictatorship) had done much to kill religious feeling and devotion amongst the people. The obvious reply to this assertion is in the fact quoted above of so many churches rising phœnix-like within a space of a few years from the ashes of their predecessors.

Without disputing the materialistic and even superficial character of some phases of life during the period, there is ample proof (the churches themselves afford it) that a genuine but reserved piety existed in the mass of the people. The practical and living side of the question took definite shape proportionately as the religious ecstasy of Mediævalism disappeared.

Public worship became more of a simple public ceremony, and less of a mysterious hole-and-corner rite. The Churchpeople of Wren's time (and Wren was no exception) had no use for mystery in their churches. The tall, aspiring shafts and vaults, and the "dim religious light" of the Gothic church made no appeal to the senses of the Churchmen of the late seventeenth and early eighteenth centuries. Theirs was an age of reason, and reason and mystery were, to their minds, entirely incompatible.

At the same time, it would be wholly unwise to assume that Wren's churches were built in a spirit at all irreverent. The general effect is often more genial than solemn, and the detail certainly seems almost too joyous at times; but this very geniality, joyousness, or lack of spirituality if you will, was quite characteristic of the period, and no artist could entirely emancipate his artistic ideas from the condition of the period in which he worked.

This was strictly true of Wren's work, and, further, we have no reason to suppose that he wished to reflect in his work any other fashions than those of his time, fashions which were satisfied with conventional Classic ornament for the enrichment of the most sacred buildings. Fashion also, by the way—Gothic fashion this time—is responsible for many so-called "improvements" in Wren's churches. In the early nineteenth century the increased religious zeal of the people, led by the Cambridge Camden Society, was answerable for much of the tinkering to which these City churches have been subjected. In some cases the alterations were really necessary, and were carried out with commendable taste and restraint. St. Mildred's, Bread Street, and St. Andrew's Wardrobe, are instances which can be called to mind of this kindly attention, and where nothing was done that was not strictly necessary. It is to be feared, however, that improvements of this nature were the exception rather than the rule. Usually we find that the customary inscription, "This church was repaired and beautified in A.D. ——," implies a determined attempt to Gothicise Wren's work in the worst possible taste. Some of the results of this zeal are simply appalling in their utter lack of sympathy with the spirit of the earlier work, and it is safe to say that the "*improvements*" are in many cases responsible for the feeling of disappointment that is engendered by a casual examination of these church interiors.

On the whole, however, there is still much of exceptional interest in these buildings, and in spite of modern improvements and decoration the student will find much material for study, and they will assuredly assist him to obtain a keener insight into the character and scope of Wren's work.

CHAPTER II.

PLANS.—GENERAL DISPOSITION OF THE INTERIORS.

ALTHOUGH the subject of planning is somewhat outside the province of these notes, the question of internal arrangement and decoration is so intimately bound up with it that it must be touched upon.

The necessity for this may be appreciated when it is remembered that Wren's City churches marked a distinct epoch in church building, and if no startling changes can be ascribed to him, at least he stamped all his work with a most distinct individuality.

As a general rule, however, church planning in the Metropolis had not altered much during the several decades before the Great Fire, and subsequent to that calamity Wren usually followed the main lines of the churches he was rebuilding. Beyond that, however, he gave free play to his own imagination and skill, and this is nowhere more markedly illustrated than in his mode of roofing. This was always intimately related to the necessities of each plan, and these vaults, domes, and ceilings, even when only executed in wood and plaster, are among his most successful achievements.

Wren has sometimes been credited with the introduction into this country of the galleried church. That this feature was in use in London before Wren's time we may learn from Hatton's "Near View of London," for, speaking of St. Paul's, Covent Garden, designed by Inigo Jones, and commenced in the year 1632, he says that "It had galleries on four sides; that on the eastern much obstructs the view of the new altar piece."

So also with the invariable absence of a clearly defined chancel and chancel arch. As a matter of fact a structural chancel was very rare in London churches, most of which were rebuilt in the fifteenth century without one.

The arrangement now mostly in vogue of disposing the choir to the right and left of the approach to the altar was never part of Wren's design. He obviously intended the choristers to occupy the gallery at the west end, in which position also the organ was generally placed, although many of the churches did not possess organs until long after Wren's time.

To return, however, to the general plans of the City churches, we shall find that they can be roughly classified into five distinct groups.

Firstly, there is the basilican type, eighteen in number, and which have the central nave and two aisles, with towers generally at the west end of the nave, but occasionally at the north-west or south-west corner.

Secondly, the plain parallelogram, seven in number, having one aisle either on the north or south side.

Thirdly, the plain parallelogram without aisles. There are thirteen of this type.

Fourthly, those erected on the Greek cross principle, numbering three; and lastly, the domed churches, of which there are six.

Although there are these distinct types of plan, it is a remarkable fact that no two of any of these groups are, or were, copies.

As we have previously mentioned, it was in his domed interiors that Wren's genius is most strongly marked, hence it will perhaps be advisable to deal with these first.

The churches where the principle of the dome predominates were as follows: St. Stephen's, Wallbrook; St. Mildred's, Bread Street; St. Mary Abchurch; St. Swithin's, Cannon Street; St. Benetfink, Threadneedle Street; and St. Antholin, Budge Row.

Partly because they are especially interesting and partly because, as a type, they are few in number, we will consider their plans at greater length than the other four types of plan.

The plan of St. Stephen's, Wallbrook, is chiefly interesting, indeed remarkable, for its treatment of an awkward looking parallelogram of somewhat meagre dimensions, viz., 82 ft. 6 in. by 75 ft. Wren in this plan has adopted the expedient of dividing it into five aisles (or nave and two double aisles) of different widths, the centre one of which is the widest and the outside one the narrowest. The effect of the irregular sub-division is, however, counteracted by the introduction of the dome. This is contrived by omitting the two centre rows of columns beyond the second bay from the west, the remaining surrounding columns thus forming an octagon which carries a circular dome on pendentives. The illustration at the beginning of this paper will convey the disposition of the plan much more clearly than a bare description.

In another chapter we shall have occasion to refer to the decorative treatment of this interior, one of Wren's most beautiful though over eulogised productions.

Many authorities have surmised that Wren adopted this particular plan to obtain a cruciform plan with an enclosed rectangular site. It is much more probable that such an idea never entered his head. Admitting that Wren wished to introduce a domed treatment, and we know that he did, what more natural and reasonable plan could be evolved from the exigencies of the site? Besides, we have no other instance of Wren "forcing" his plan into a cruciform arrangement.

St. Mildred's, Bread Street, is one of the smallest of Wren's churches, as it is one of the most interesting. It has also another claim on the sympathies of the architect, and even more so upon the antiquary; that is, that it exists to-day almost untouched as Wren left it, and the restful effect created by ungilded moulded plasterwork, clear glass windows, and dark woodwork is worth going to a great deal of trouble to see.

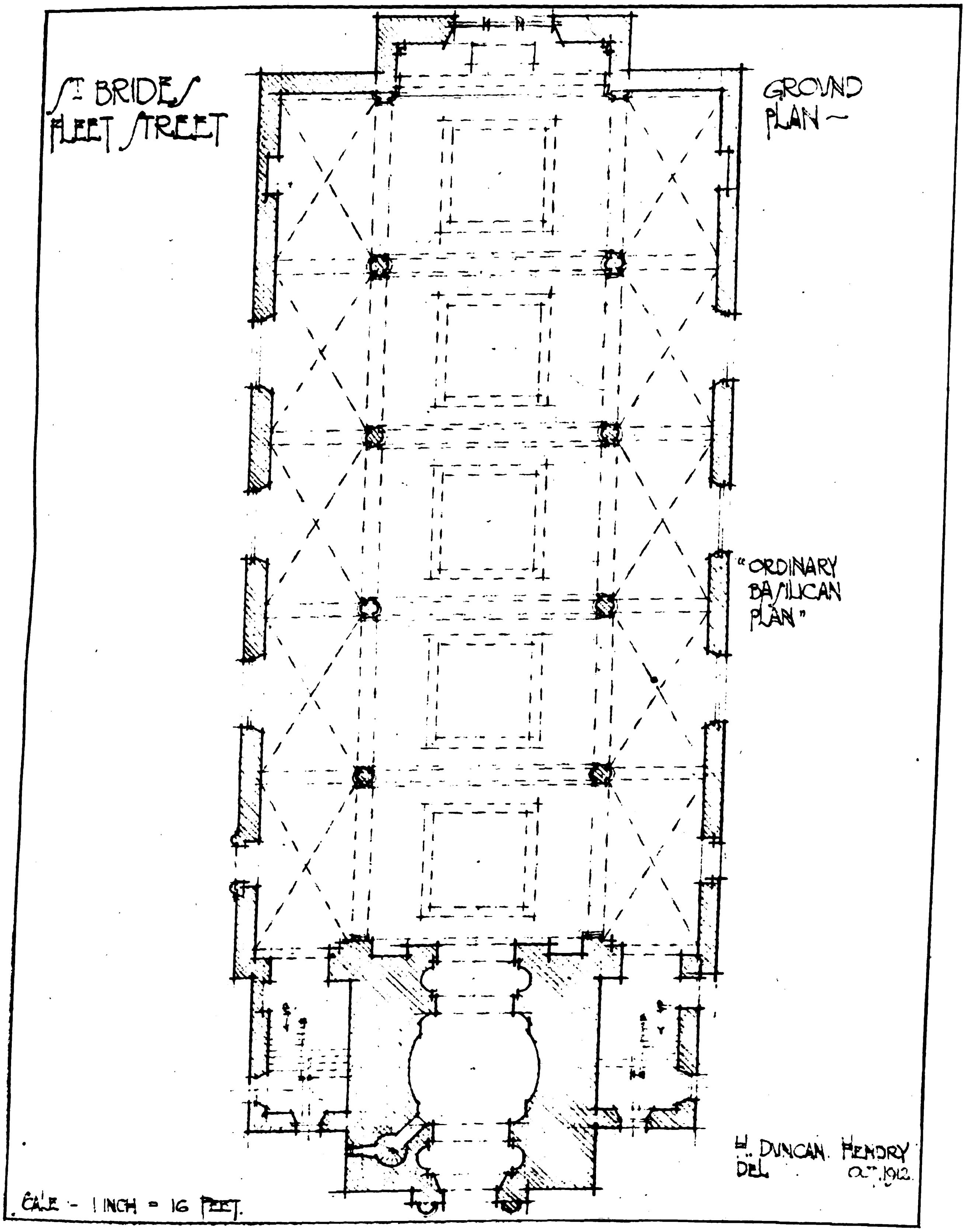
The success of this plan is no doubt due in a large measure to its extreme simplicity. Two wide coffered arches enclose a square space, crowned by a very shallow dome carried on pendentives. This practically summarises the plan.

The usual arrangement of organ in a western gallery is here followed, while a singular feature of the plan is the absence of a central aisle leading up to the altar. Two side aisles only are provided. St. Mary Abchurch has a strikingly beautiful interior, and is yet another of Wren's most original creations. The plan is nearly a square, being 60 ft. broad by 65 ft. long. It is nearly unobstructed as far as the floor space is concerned, a single column only being introduced at the west end to form a regular square for the body of the church.

The dome treatment here is beautifully effective. The dome itself is carried by pendentives which spring from eight points in the circle marked by Corinthian pilasters and corbels. The pendentives themselves are arched between each springer and are groined back into the angles of the large enclosing square.

The churches of St. Benetfink and St. Antholin have long been sacrificed to commercial activity, and this is the more to be deplored as they both introduced an exceedingly unique treatment of Wren's, viz., the elliptical dome. In the case of St. Benetfink this ellipse was supported by six columns in the form of a hexagon, and in St. Antholin by eight columns forming an elongated octagon.

To a certain extent St. Swithin's is similar to St. Mary Abchurch, for here again a practically square apartment is roofed with a dome supported at eight points. In this case, however, the dome itself is octagonal, and is supported by half columns which have a complete entablature forming the base of the octagonal dome.


ST BRIDES
FLEET STREET
GROUND PLAN ~
"ORDINARY BASILICAN PLAN"
H. DUNCAN. HENDRY DEL OCT. 1912.
SCALE - 1 INCH = 16 FEET.

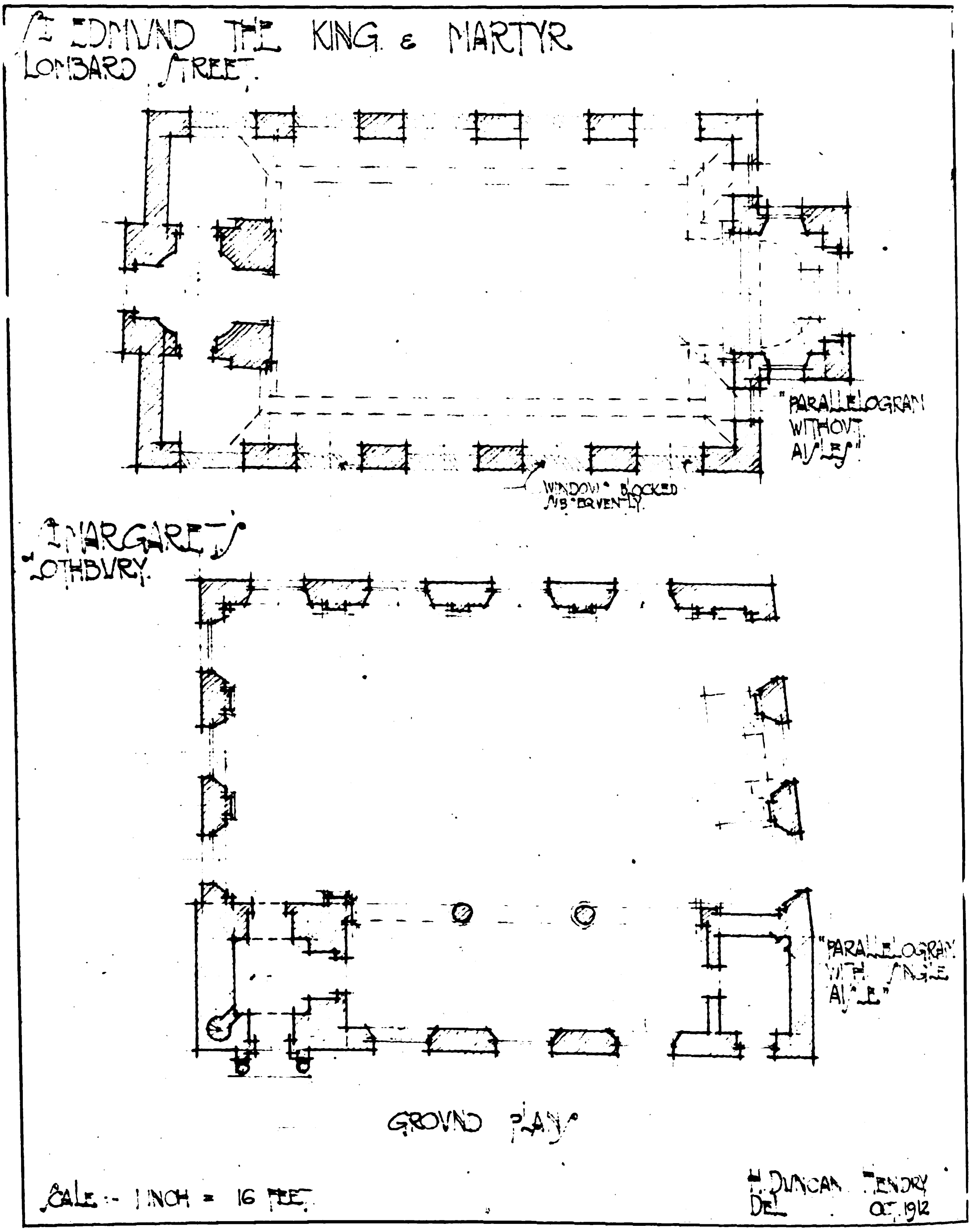
With this brief summary of the principal features of the domed churches, let us pass to the consideration of the ordinary basilican type; that is, the plan having an orthodox nave and side aisles. Of the eighteen original examples of this type of plan, four have been destroyed, viz., St. Christopher-le-Stocks (on the site of the present Bank of England); St. Dionis Backchurch; St. Michael Bassishaw (or Basinghall Street); and St. Bartholomew Exchange.

In addition to the triple division, the chief similitude of these churches to the basilicas of ancient time rested with their galleries, over the side aisles, and it is in this feature that Wren most clearly departs from mediæval precedents. Various authorities have suggested various origins for this new departure, some seeing the women's galleries of some Roman basilicas as a tradition for this treatment. Others again consider it a development of the triforium of Romanesque and early Gothic cathedrals. These devices, however, were so dissimilar to Wren's method of accommodating his congregation that another explanation must surely be sought.

Such explanation seems forthcoming in the fact that he had urgent need for accommodating the largest possible number of worshippers, *who could both hear and see the preacher* (Wren laid particular stress on this), upon ground plans of limited area.

In one or two cases we know the galleries served a specific purpose, as in the case of Christ Church, Newgate Street, where they were occupied by the boys of Christ's Hospital, and St. Andrew's Wardrobe, where the gallery was provided for the congregation of the neighbouring parish of St. Anne's, whose church was not rebuilt after the Fire.

It is unnecessary to deal with all the churches of the basilican plan. The best examples are, perhaps, St. Bride's, Fleet Street; Christ Church, Newgate Street; and St. James's, Piccadilly.


ST EDMUND THE KING & MARTYR
LOMBARD STREET
"PARALLELOGRAM WITHOUT AISLES"
WINDOWS BLOCKED SUBSEQUENTLY
ST MARGARET'S
LOTHBURY
"PARALLELOGRAM WITH SINGLE AISLE"
GROUND PLANS
SCALE :- 1 INCH = 16 FEET
H. DUNCAN HENDRY DEL. OCT. 1912

All these have galleries, the treatment being most satisfactory in St. James's and least in St. Bride's. In St. Bride's the columns separating nave and aisles are coupled, and small pilasters are introduced at the side of the columns to carry the gallery front, which has the unhappy effect of dividing the columns half-way up. This church, however, is especially interesting for the use of coupled columns, the only instance of such a treatment in any of the City churches. By means of an oblong impost block, the longer side of which runs north and south, these columns allow for the springing of an arch of considerable width of soffite between each pair, and thus giving an impression of strength and solidity

St. James's, Piccadilly, the second of these three examples in point of date, shows a considerable advance upon St. Bride's in regard to the interior. The gallery no longer cuts the columns in two, but rests upon square piers of its own. These carry an entablature and low attic above. Over this is a range of Corinthian columns, and the entablatures of these, stretching from each column across to the side walls, serve as imposts to a series of transverse arches from column to column, as also the great semicircular vault spanning the nave.

Christ Church, Newgate Street, marks another development of this type of plan. Here columns are raised upon panelled bases, which are sufficiently lofty in themselves to support the gallery.

These three examples will suffice to illustrate the type of plan known as the basilican, for, though the others are all different in one way or another, they are the same in principle as these we have just discussed.

Our third type of plan is the parallelogram with one aisle. These are now represented by the following six churches: St. Clement's, Eastcheap; St. Benet's, Paul's Wharf; St. Margaret's, Lothbury; St. Vedast, Foster Lane; St. Margaret Pattens; and St. Lawrence Jewry. Of these the most satisfactory are the two St. Margaret's. The interiors in both cases are well designed and even picturesque, though this result is not entirely attributable to Wren, but to the fact that the aisles have been subsequently finished as side-chapels.

In both cases the nave and aisle are separated by Corinthian columns standing upon high pedestals.

Turning next to the fourth form in our classification of plan, we have the plain parallelogram without aisles. These are fairly numerous, or it would be more correct to say *were* fairly numerous, as no less than eight of the original thirteen have been pulled down. Of those remaining, the churches of St. Edmund the King and Martyr, Lombard Street, and St. Nicholas Cole Abbey, in Queen Victoria Street, may be pronounced the best.

St. Edmund's is the only church of Wren's which does not orientate; this is due to the lack of ground space from east to west. In fact, the church is of such small dimensions that this, allied to the rich and sumptuous nature of the fittings and decoration, renders St. Edmund's more like a private chapel than a church.

St. Nicholas Cole Abbey is reputed to be the first built and finished after the Fire. For a columnless hall, this church is of considerable span, but the effect of heaviness in the ceiling is avoided by skilful coffering, while the main beams have a suggestion of support from the pilasters on the north and south walls.

The last form of plan we have under consideration is that on the Greek cross principle. There are only three of these—St. Mary at Hill, St. Anne and St. Agnes, and St. Martin, Ludgate—the first-mentioned being the most successful. It is really a skilful combination of the domed and vaulted church, for the barrel vaults covering the four arms of the cross, instead of meeting and intersecting in a groin, as in St. Anne and St. Agnes and St. Martin, in this case carry a happily designed cupola (it can hardly be called a dome) resting on pendentives.

St. Anne and St. Agnes is rather more effective than St. Martin's, though the general arrangement is the same in both cases; but in the latter the vaulted soffites over the arms of the cross are rather flat, and the springing of the vault from the entablature is not one of Wren's happiest efforts.

This, then, is a *résumé* of the extremely broad subject of planning as carried out by Wren, but it is hoped that with this general classification in mind a clearer conception will be possible when we come to consider the reasons governing the particular disposition of fittings and the relation between Wren's decorative treatment and his structural limitations.

Probably we can do no better than close this chapter by quoting from Mr. Reginald Blomfield's book on the Renaissance architecture of England. Speaking of Wren, he says: "The problem before him was to provide the most practical and economical church possible for a Protestant congregation, and Wren had very clear ideas as to the proper way to set to work. He insisted that if possible everyone must both see and hear the preacher, and when that was provided for he was less careful about those subtle qualities of architecture which appeal to emotions that lie less close to the surface. . . . The strong point about these churches is their extreme reasonableness; and their skilful adaptation of means to an end."

(To be continued.)

ART IN LONDON.

THE BEAUX-ART COMMITTEE.

WE have seen Paris in London before now, and we were once again confronted with an infant offspring of the fair city on the Seine when we attended an exhibition of students' work at the atelier in Wells Mews, Oxford Street. We use the word "infant," for the display was of the smallest and the technique far below the work of l'Ecole mère; but none the less there is promise of growth as well as some actual performance observable, though the offspring is but a twelvemonth (or so) young.

Mr. J. R. Hossack's R.I.B.A.-approved testimonies of study showing a Mantelpiece in a Town Hall we have seen and appreciated before in Conduit Street. The warm sepia treatment is effective, but this would be of no account in the absence of knowledgeable design and spirited draughtsmanship. But why will architects (both in the chrysalis and developed stages) perch statuary in a semi-recumbent position upon the sloping-away surface of a pediment? They should interpose (as Mr. Alfred Drury did at the War Office block) a horizontal stool for the support of the figure, to meet æsthetic demands. There was good brushwork in evidence in some of the drawings submitted for the twelve-hour study of a gamekeeper's cottage in a rugged and hilly district, but most of the designs failed to satisfy the requirements of the *projet* in appearance; we do not agree with the jury's decision as to the best design, which we consider should have been assigned to Mr. Hossack, as being most characteristic.

The studies for a covered bridge to connect two Government buildings (where the programme suggested the Bridge of Sighs or that of the Grand Hotel at Charing Cross as alternative prototypes) were not a success. Some of the students apparently regarded the bridge between two Government blocks in Whitehall as more suitable; but, right or wrong, it was against the terms of the issued programme. Mr. L. H. Bucknell and Mr. Bellamy showed the best designs, but they were not inspired.

The last we wish to notice is the *projet* for a Bacteriological Institue, very sparsely taken up by the students, but in one instance showing a remarkably good notion of group-planning on a large site. Mr. Wilfred Hoyle is to be congratulated upon his work, with its approach avenue of trees, its quadrangular-arranged science blocks, and (not least) for the merely quasi-symmetrical treatment of the director's and staff residences; to make these two blocks identically symmetrical is a grievous error, committed by some of the students.

We shall look forward with interest to the development of this atelier.

SOCIETY OF MURAL DECORATORS AND PAINTERS IN TEMPERA.

'TIS an old and perhaps an abused saying that "we must crawl before we can walk," for there is a likelihood of its being made the excuse for not even attempting to improve upon a crawl. And notably is this so regarding the art of mural decoration in England. We have been crawling for so many years now, and it seems to be more than time for the infant Art to show signs of development. Properly understood in this connection, the decoration of the Royal Exchange, interesting and stimulating as it is, does not come within the category of mural decoration to any greater extent than the application of wall papers or wall hangings are admitted. For by mural decoration proper should be understood the treatment *in situ* of the surfaces, and we may mention a notable instance in the two lunettes at the Victoria and Albert Museum, the work of the late Lord Leighton.

The Society whose exhibition at the Art Workers' Guild Hall in Queen Square, Bloomsbury, we are about to notice is one formed with the object of stimulating laggard England to a healthy, practical interest in the intimate association of painting with architecture; and this must necessarily appeal to architects, whose fervent prayer will be that employers will be found in increasing numbers ready to open their purse strings wide with the object of fostering the art of mural decoration.

Some of the work shown at the exhibition needs no apology by reason of the youth of the Society. Commendatore Walter Crane is a master in the art of decorative design, and his exhibited lunette studies for the Royal West of England Academy are fit examples of his skill in "filling" a space appropriately; his composition and colour leave nothing to be desired. In his "Architecture" lunette, however, he has, unfortunately, exaggerated grossly the scale of the set-squares and dividers; his "Thespian Waggon" is also a good piece of composition. Mr. H. F. Garrett's sketch for the Canon Barnett Memorial frieze for the Whitechapel Art Gallery tells its story well, and contrasts favourably with its neighbour, "Ehret die Frauen," a cartoon by Mrs. Marianne Stokes, which is a "set" picture that makes no successful appeal to us.

Another excellent work is Miss Emily Ford's "Inspiration," showing a life-size female seated on a massive stone chair and swaying forwards under the spell of the inflatus—a good design and effective colouring. Mr. Henry Holiday shows two of a series representing the history of Joseph, and these again are admirable in every respect, saving the price set against them; but perhaps Mr. Holiday does not wish to sell the pictures. As mural decoration they could not well be surpassed, as long as they adorned a building free from the deleterious influences of smoke and soot, and a sun-kissed district would also be to their advantage. Mr. F. Cayley Robinson's design for the entrance hall at Middlesex Hospital, "Comfort the Orphan," is effective in another style and key, and is far superior to his companion design on exhibition. The "Crane" esprit is shown in Miss Margaret Jenkins' design for spandrils to premises in Newgate Street, and Mr. J. D. Batten has quite grasped the spirit of his medium in "Pandora." Mr. Frank Salisbury pleases us as little here as in the Royal Exchange, and Sir Charles Holroyd's "Venus and Adonis" is very indifferent.

We cannot notice all that we would wish, whether for praise or dis-praise, but it would not be right to overlook here Mr. Matthew Webb's excellent "Cloud-piece silvered by a sailing moon," a harmony in greys, or the mixed value of Mr. Allan F. Vigers' illuminated manuscripts. We wish the Society every success in its future development.

THE EXPRESSION OF FORM.*

By Leslie Wilkinson, A.R.I.B.A., Assistant Professor of Architecture, London University.

As you no doubt expect, I propose in this paper to discuss the question of drawing, and I hope that the importance of the subject in our profession will be sufficient excuse for my venturing to address you on what may seem such a commonplace topic.

Architectural drawing is sometimes rather slightingly referred to as something half-way between the methods of the engineer and the painter. But I prefer to see in it the combination of the merits of each, the precision and utility of the one with the feeling and beauty of the other.

That skill in drawing is a very necessary part of an architect's equipment is now fortunately generally admitted, but there are still some who belittle the necessity and quote cases in support of their contention; but I venture to think that even in these cases the great men referred to would have done even better had they been greater masters of draughtsmanship.

The layman, of course, has always laid due stress on the necessity of an architect being able to draw, and I suppose the fact that a boy is fond of drawing has more weight in the choice of architecture as a profession than anything else. This is unfortunate in many cases, as the young man finds that, contrary to the ideas of his elders and betters, many other varied attainments have to be mastered, some very exacting and contrary in their nature to free drawing. He finds that there is something more to be done than draw pretty sketches and huge fees, and that the builder, good man, does not do everything else off his own bat; also that there are such things as legal forms and accounts.

Drawings may be classed in three groups:—

1. Those which are instructive to the author.
2. Those which are instructive to the reader.
3. Those which are a delight to the beholder.

And some drawings may combine in themselves the characteristics of all three groups. Also, we must not forget the pleasure which the author obtains from the producing of a drawing, a pleasure entirely the author's own, and independent of the result produced or its fate.

First, then, as to the educational value of drawing. That drawing teaches us to see will be acknowledged; that is why we sketch and measure, isn't it? The resulting production and the delectation of our cousins and our aunts is quite a secondary consideration. Now, if we find that we see a great deal more in a building if we sketch it than if we merely look at it, and as after a time this habit no doubt developes our sense of observation, surely this desirable result would also be produced in the public were they instructed in drawing. And where is the difficulty in this?

Drawing is a much older art than writing, and perhaps were I an Irishman I might say that the earliest writing was drawing. Then I suppose it was found that whilst drawing excellently expressed ideas of form it was deficient in expressing abstract ideas, and so writing was invented and ousted the practice of drawing. Now, everybody has to be taught to write, and that the impossibility of accomplishing this is not admitted is perfectly justified.

But with drawing it seems to be decided that a heaven-sent genius is necessary, a genius that may be developed certainly but not produced. It may be claimed that trained mediocrity will produce better results than untrained genius, for while we always have our geniuses producing great works in all ages, we cannot live on genius alone, but for any general advance must rely on the trained competence of the many, the raising of the average of accomplishment. The chief offenders, the gentlemen who produce those rows and rows of suburban villas (gross abuse of a beautiful term), and impossible shops, will not mend their ways until the public are shocked by these things, as they certainly are not at present, their sense of beauty or even what is reasonable being evidently, shall we charitably say dormant?

In these days of Ratepayers' Protection Societies, a mercenary age understands at once that the men who coined the phrase referred to the ratepayers' pocket as the worthy object of their endeavours. But is not our sense of beauty and order at least in equal need of some such protective machinery? Were all trained by drawing to observe form (if necessary instead of one of the many popular accomplishments which might be dispensed with), I think we should first be exempt from the charges of crankiness, even savoured with envy, when we venture to criticise executed work, and later on perhaps even receive the encouragement of sound appreciation and constructive criticism to the benefit of architecture.

Drawing is not only a means of artistic culture, *i.e.* a thing desirable in itself, but a means to an end, a helpful instrument in the study of almost any subject dealt with by master and student. Draughtsmanship, like language, is useful for something else than the expression and communication of ideas. It is of great assistance in forming them, just as writing is a great help in sustained thinking. Writing serves not only to define our ideas, but to fix them.

Drawing is an invaluable addition to our intellectual appliances, and it is because drawing may thus be made useful, not because it is the first step in the practice of the fine art, that it deserves an equal place with writing in schemes of general education.

To quote a passage from James Malton's book on "Perspective," which, in addition to showing sound common-sense, is pleasantly couched in the leisurely phraseology of a century ago. Malton, who describes himself as "architect and draughtsman," says: "Drawing, in my opinion, is a vehicle of communication among mankind, as necessary to be somewhat informed in as the art of writing. The pen may express our sentiments, but not always our ideas and conceptions; at times, that can alone be done by pencil. A mechanic is required to execute a new and singular piece of work; it is impossible he can thoroughly conceive it without a draft, the which, not being able to give, is a species of ignorance nearly as great as the not being able to write; and a deficiency that many an intelligent person has mortifyingly and detrimentally experienced. The most laboured description of scenes conveys not half so perfect an idea of their form and effect as a few just lines of the pencil. Drawing is an universal language, comprehensible to a very savage, and plainly speaks to every eye. No person, therefore, desirous of a liberal education should be deficient in a tolerable acquaintance with the first principles of delineation, perspective."

There is a lot in that. You will agree that what architecture has suffered from, and is still suffering from, though, I hope, to a lesser extent, is the ignorance and, therefore, lack of interest of the great public.

As architecture deals essentially with expressive forms and their production, colouring and combination to satisfy the senses of beauty and comfort, and as drawing is the most natural means of the expression of form, it seems to me that were the public better informed in the art our country would be speedily freed from much of its present disfigurement.

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* **Read before the Society of Architects on May 14.**

Alternatives.

The only alternative to drawing as a means of expression of form is, of course, writing; but except in the case of very simple and commonplace forms this is apt to be clumsy and seldom perfectly clear. The vivid pictures composed by our great poets and writers, Tennyson's "Palace of Art," for instance, are marvels of literary skill; but does not their success as descriptions depend on familiarity with scenes similar to those referred to? A verbal description of an original form is generally clumsy. The few just lines of Malton would be much more direct.

I was going to mention models as a means of expressing form, but I think we must rule them out as being rather realisations in miniature. But their value for purposes of study and explanation is unrivalled, and were it not for their expense I suppose they would be much more widely used than they are. A model provides the equivalent of an infinite number of perspective views, and will often settle points with a layman when perspective might be distrusted and geometrical drawings not understood, or, what is worse, misunderstood.

Photography.

Photography has affected draughtsmanship in more ways than one, and must not be forgotten. At present limited to the expression of existing forms, it has ousted drawing for purposes of illustration to a great extent. But after the first triumph of popularity, it has been realised that a drawing is capable of conveying an amount of feeling and character which is lacking in the camera's work, although in the representation of lectures and the recording of dimly lighted and inaccessible detail the photograph is of the utmost value. Again, in reproduction work, process photography has dealt severe blows at the older methods of illustration. The school of men who produced those fine engravings, mezzotints, lithographs, and etchings showed themselves in their delineation of architecture rare masters of chiaroscuro and composition.

What is it that gives the art of drawing its value? To my mind, the production of a drawing means the knowledge of tangible facts. We cannot express a thing until we know what it is. A great draughtsman will be so, not because he commands a skilful technique, has a fine sense for line, colour and composition, so much as because he knows the forms he deals with. Of lesser lights, some can draw the figure, some animals, some landscapes, some flowers and eatables, and some of us walls with doors and windows in them, but each his special subject only. All are draughtsmen and all can draw, but their failure in other subjects results from lack of knowledge, gained by observation crystallised by the habit of drawing.

When we say that the figure is the most difficult subject to draw, I maintain that we mean that the greatest knowledge is required to delineate the subtle contour of form of the most wonderful of all creations, the human form.

It is extraordinary to notice how some objects are closely studied, while others are denied that attention so necessary to their just expression. If we knew trees and figures of men and animals and motor-cars as we do columns and cornices, these objects might look more like their prototypes than they sometimes do in our perspectives.

I think we should devote more time to the serious study of figure drawing and landscape composition. The latter the setting, and the former the adornment and completion of our works.

The second group of drawings, *i.e.* those instructive to the reader, includes working drawings, record drawings, and restorations (these latter also satisfying the condition for inclusion in Group I. as eminently instructive to the author also).

The mention of working drawings calls for a reference to Graphics. This most useful application of drawing to the solution of very practical problems is, of course, appreciated by the engineer and architect. With the diagram errors are less likely and results more obvious than can ever be the case with mere symbols. It may be said that Graphics deal with the expression of forces and numbers rather than form, but as in Graphics forces and numbers are, as it were, given form so that their functions may be more obvious, I have ventured to refer to the subject. Moreover, the high degree of accuracy required in these drawings is a very useful corrective to the less precise work sometimes produced.

Of drawings in the third group, *i.e.* those which give pleasure by their intrinsic merits, apart from any question of association, it may be said that they are the result of absolute knowledge assisted by skill in "indication." The most advanced types of these are based on a close study of the effects of forms under varying conditions of lighting, movement, and atmosphere. A lot may be learnt from the study of the works of acknowledged masters, and for contemporary work the R.A., the National Gallery, South Kensington, &c., offer opportunities, while the names of Canaletto, Du Cerceau, Hollar, Piranesi, Turner, Adam, Prout, David Roberts, Nash, Flockhart, Richards, Adshead, and Walcot, among others, will recall to you works which in a marked degree intensively possess the power of satisfying and pleasing.

One more great sphere for draughtsmanship is seen in the opportunity it provides for men to show what they could produce if they had the opportunities. I wish we saw more of the fine imaginative (but not impracticable) conceptions by which the old men used to give evidence of their powers and their love of architecture for its own sake. Surely it is in such works as these that a man can show his real worth, sometimes even more than in his executed works, which in this country are too often marred by lay interference and irritating conditions. I suppose our confrères in France are saved from this by the innate taste of their fellow-countrymen, while the American client probably has the good taste to set less value on his own opinion than on that of his chosen expert in matters architectural.

Owing to their perishable nature, few Mediæval and no earlier drawings exist for our information and study, but I imagine that what we should understand as complete drawings were not made. Their ignorance of perspective is surprising, and the performances in small scale work up to the Renaissance are almost childish. But that the early builders could draw, and to much purpose, if only full sizes on their templates and setting out platforms, is very evident. With the Renaissance, drawing became of paramount importance. The introduction of the new manner, in the north-west of Europe, at any rate, depended almost entirely on graphic representations, the inadequacy of which in many cases led to the perpetration of unlovely composition, which we know as Elizabethan and Jacobean, and which some men unaccountably feigning extraordinary ignorance would imitate to-day.

From this time to the present day drawing became of more and more importance, until to-day all the components of a great building may be in preparation in various places at the same time, and the whole assembled with record speed, the accurate relation of the parts being assured by the services of draughtsmanship.

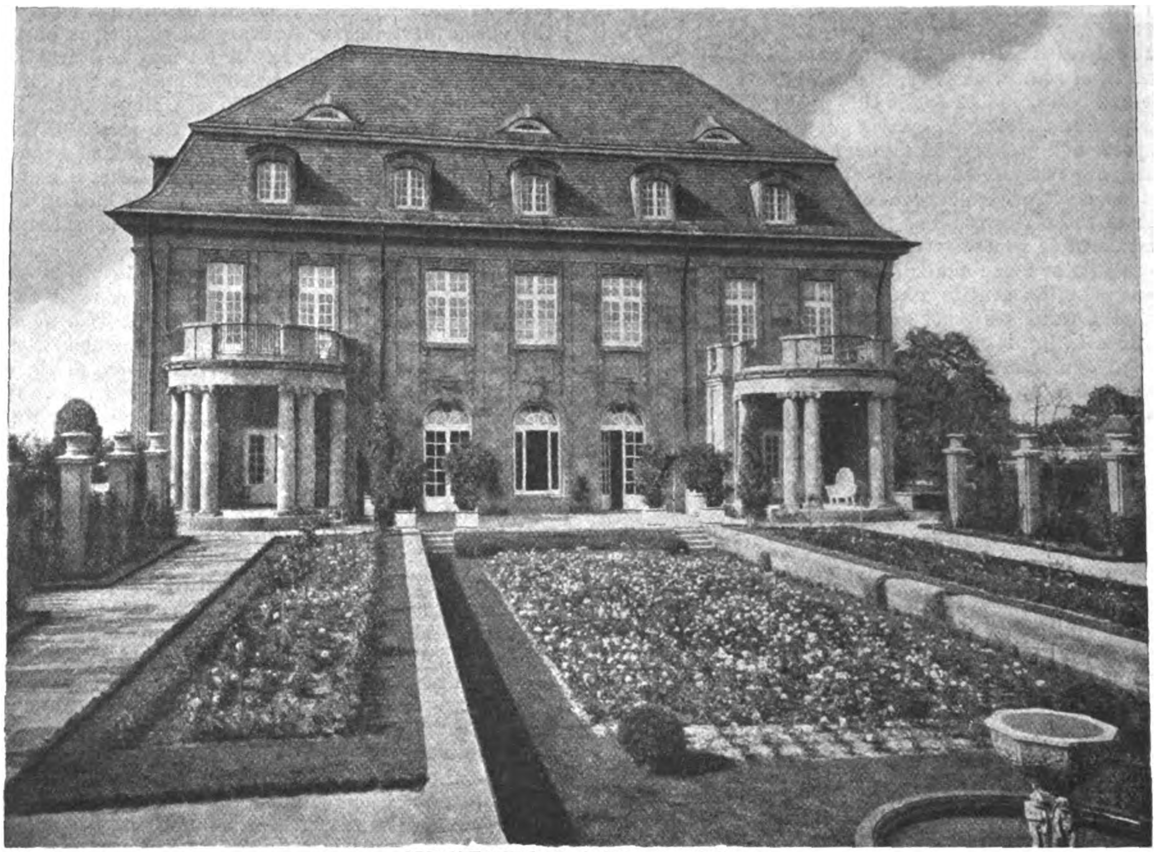
Granted that drawings are now indispensable, let us see what the effect has been on architecture. Has this effect always been beneficial? Planning as now understood, with all its means, could not, of course, be effected without small scale drawing; but has not its effects on elevational design been unfortunate in some cases?

Look at the work produced in response to the demand created by the industrial revolution of last century and which composes our prosperous but unlovely Midland and Northern cities. With tradition thrown overboard, and chaos let loose by the misguided zeal of literary amateurs, and a public too intent on other matters to take heed, the accumulated heritage of centuries is squandered just as it is becoming enriched with a first-hand knowledge of Greek refinement.

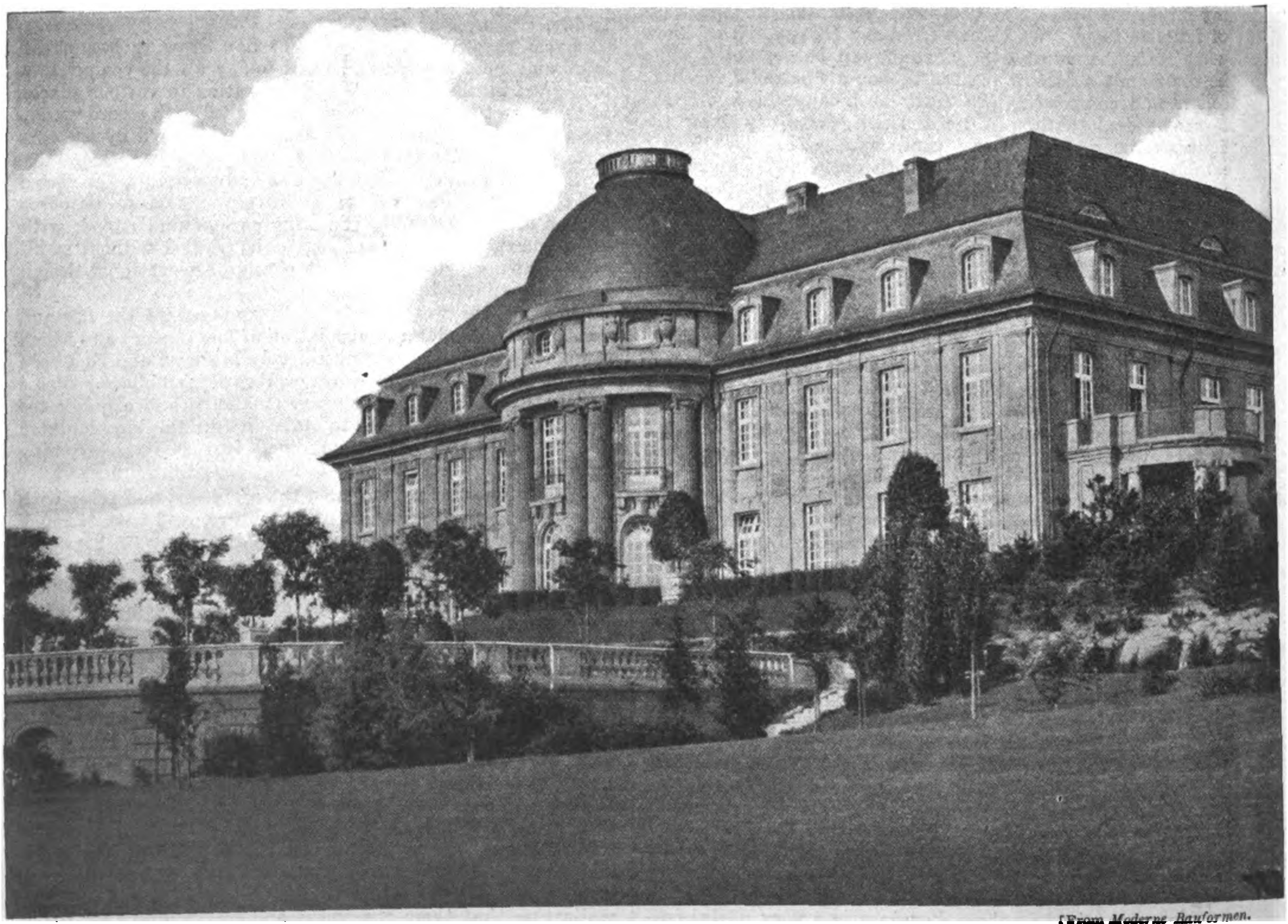
The engineer is parted from the architect, and takes with him the life-giving element of adventure, and with it much precision in draughtsmanship. The draughtsman, born and bred in the narrow artificiality of a new-made town, brought up, I will not say trained, at the drawing-board, produces out of his own inner consciousness (a receptacle which has never been filled) the drawings for the buildings which we know only too well. These are often conveniently devised with excellent workmanship on good material, full of drawing, but innocent of any claims to be considered as architecture.

Again, these men at the boards must have originated the ugly and elaborate ways of carrying out simple details, which have become the stock-in-trade of the artisan to-day. If they had only spent a few days in the nearest village and then given a few minutes' verbal instruction or demonstration to the workmen, how much better a lot of this work might have been. Is not the great advance in domestic work largely due to the adoption of this policy, and to the realisation that there are bricks and bricks, and that every locality has its characteristic manner of building?

MODERN EUROPEAN ARCHITECTURE.
GERMANY.



SIDE TOWARDS ROSE GARDEN.



[From *Moderne Bauformen.*

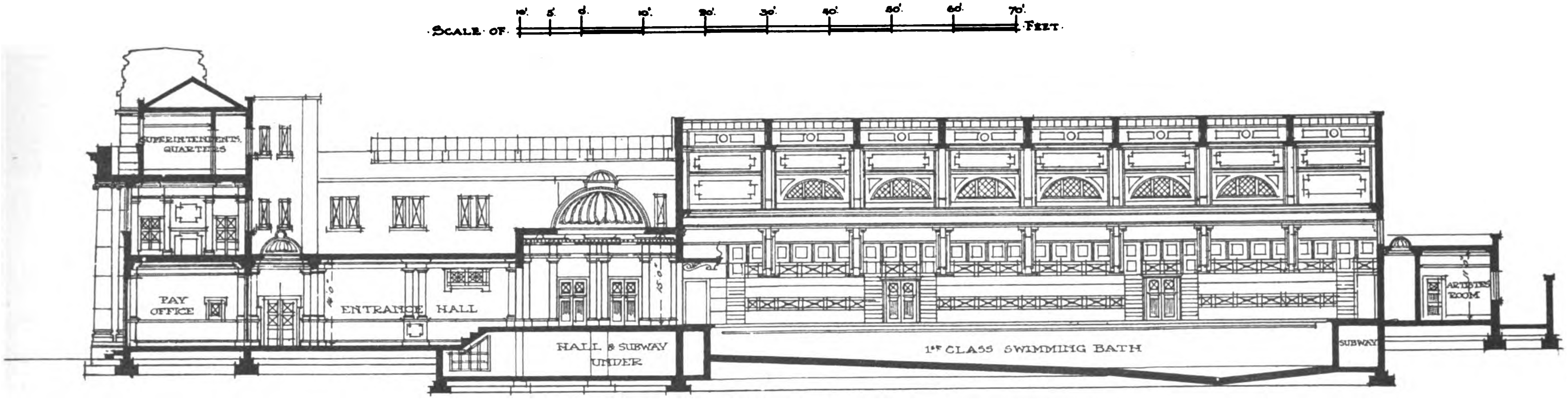
PRINCIPAL FRONT.

HOUSE FOR THE BARONESS VON REITZENSTEIN AT STUTTGART.—Messrs. SCHLOSSER & WEIRETHER, Architects

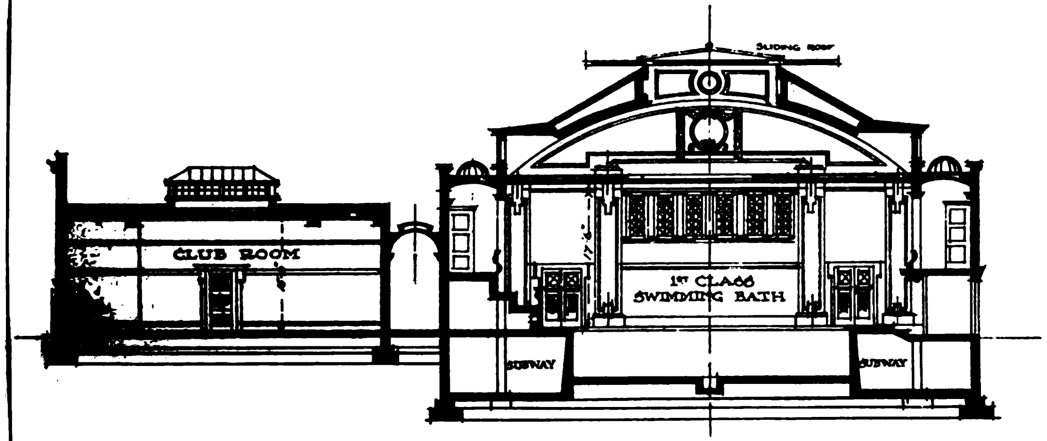
LIBRARY OF THE UNIVERSITY OF CALIFORNIA

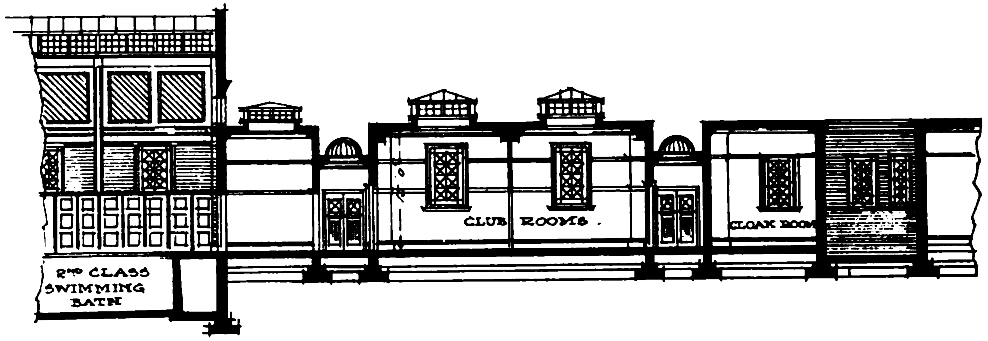
BOROUGH OF PADDINGTON – LONDON

PROPOSED CENTRAL BATHS


SCALE OF FEET
10' 5' 0' 10' 20' 30' 40' 50' 60' 70'
SUPERINTENDENTS QUARTERS
PAY OFFICE
ENTRANCE HALL
HALL & SUBWAY UNDER
1st CLASS SWIMMING BATH
SUBWAY
ARTISTES ROOM

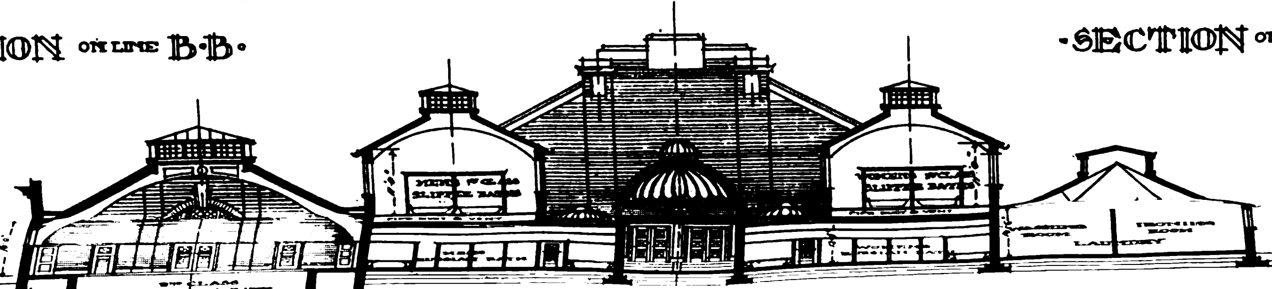
·SECTION ON LINE A·A·


SLIDING ROOF
CLUB ROOM
1st CLASS SWIMMING BATH
SUBWAY
SUBWAY

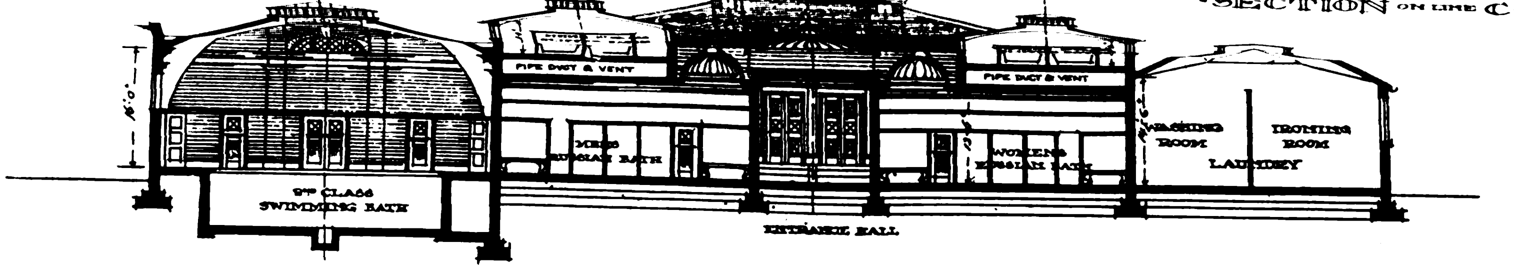

2nd CLASS SWIMMING BATH
CLUB ROOMS
CLOAK ROOM

·SECTION ON LINE B·B·

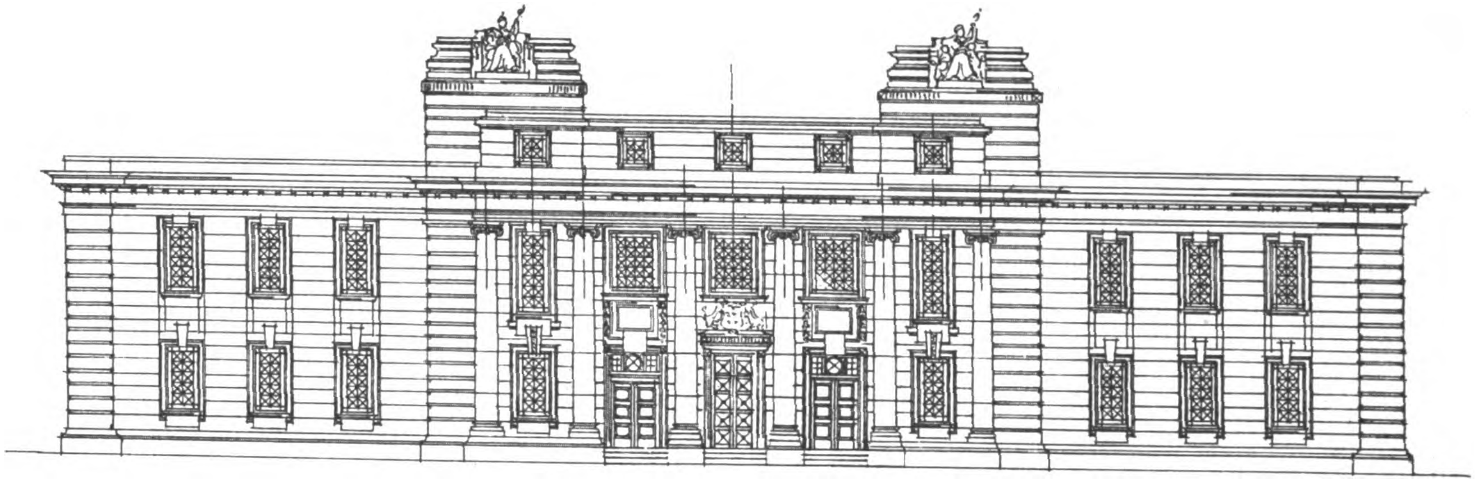
·SECTION ON LINE C·C·


MENS 1st CLASS SLIPPER BATHS
WOMENS 1st CLASS SLIPPER BATHS
PIPE DUCT & VENT
WASHING ROOM
IRONING ROOM
LAUNDRY

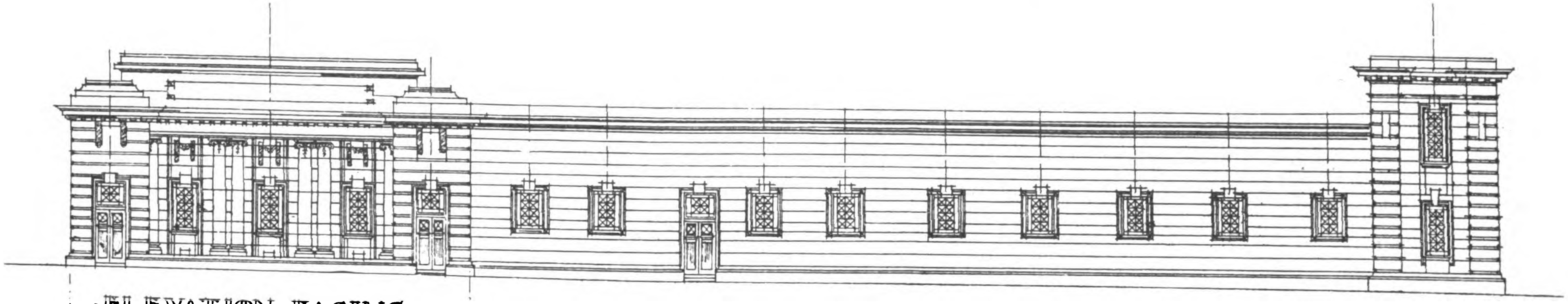
·SECTION ON LINE C·C·


16'·0"
2ND CLASS SWIMMING BATH
PIPE DUCT & VENT
MENS RUSSIAN BATH
ENTRANCE HALL
PIPE DUCT & VENT
WOMENS RUSSIAN BATH
WASHING ROOM
IRONING ROOM
LAUNDRY

·SECTION ON LINE D·D·



·ELEVATION TO PORCHESTER ROAD·



·ELEVATION·FACING·
·QUEENS·ROAD·

·ELEVATION TO PORCHESTER HOUSES·

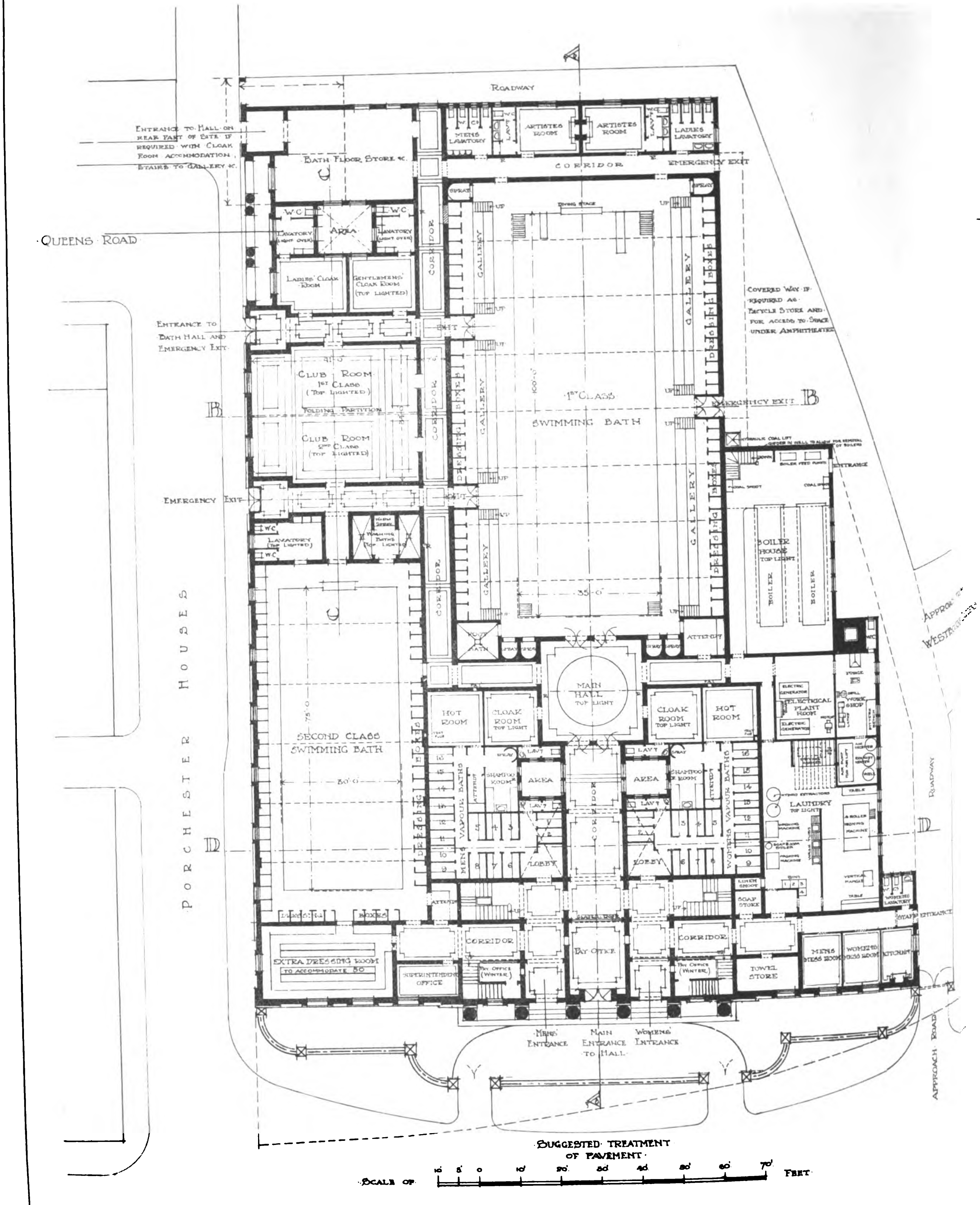
PHOTO-LITHO. SPRAGUE & Co. Ltd. 69 & 70, DEAN STREET, SOHO, W.

SELECTED DESIGN FOR NEW CENTRAL BATHS, PADDINGTON, W.

Mr. HAROLD BURGESS, Architect.

BOROVGH OF PADDIN

PROPOSED CEN


ROADWAY
A
ENTRANCE TO HALL ON REAR PART OF SITE IF REQUIRED WITH CLOAK ROOM ACCOMMODATION STAIRS TO GALLERY &c.
BATH FLOOR STORE &c.
MENS LAVATORY
ARTISTES ROOM
ARTISTES ROOM
LADIES LAVATORY
CORRIDOR
EMERGENCY EXIT
QUEENS ROAD
W.C
W.C
AREA
LAVATORY (LIGHT OVER)
LAVATORY (LIGHT OVER)
LADIES' CLOAK ROOM
GENTLEMENS' CLOAK ROOM (TOP LIGHTED)
CORRIDOR
GALLERY
DIVING STAGE
COVERED WAY IF REQUIRED AS BICYCLE STORE AND FOR ACCESS TO SPACE UNDER AMPHITHEATRE
ENTRANCE TO BATH HALL AND EMERGENCY EXIT
EXIT
CLUB ROOM 1ST CLASS (TOP LIGHTED)
FOLDING PARTITION
CLUB ROOM 2ND CLASS (TOP LIGHTED)
B
1ST CLASS SWIMMING BATH
100'-0"
35'-0"
EMERGENCY EXIT
B
DRESSING BOXES
BOILER HOUSE TOP LIGHT
BOILER
BOILER
ENTRANCE
EMERGENCY EXIT
W.C
LAVATORY (TOP LIGHTED)
W.C
WASHING BATHS (TOP LIGHTED)
C
SECOND CLASS SWIMMING BATH
75'-0"
30'-0"
PORCHESTER HOUSES
MAIN HALL TOP LIGHT
HOT ROOM
CLOAK ROOM TOP LIGHT
CLOAK ROOM TOP LIGHT
HOT ROOM
ELECTRICAL PLANT ROOM
WORK SHOP
AREA
AREA
SHAMPOO ROOM
SHAMPOO ROOM
MENS VAPOUR BATHS
WOMENS VAPOUR BATHS
CORRIDOR
LOBBY
LOBBY
LAUNDRY TOP LIGHT
D
D
ROADWAY
LINEN STORE
SOAP STORE
STAFF ENTRANCE
EXTRA DRESSING ROOM TO ACCOMMODATE 50
SUPERINTENDENTS OFFICE
CORRIDOR
PAY OFFICE (WINTER)
PAY OFFICE
PAY OFFICE (WINTER)
CORRIDOR
TOWEL STORE
MENS MESS ROOM
WOMENS MESS ROOM
KITCHEN
APPROACH FROM WESTBOURNE
APPROACH ROAD
MENS' ENTRANCE
MAIN ENTRANCE TO HALL
WOMENS' ENTRANCE
A
SUGGESTED TREATMENT OF PAVEMENT
SCALE OF 10 5 0 10 20 30 40 50 60 70 FEET

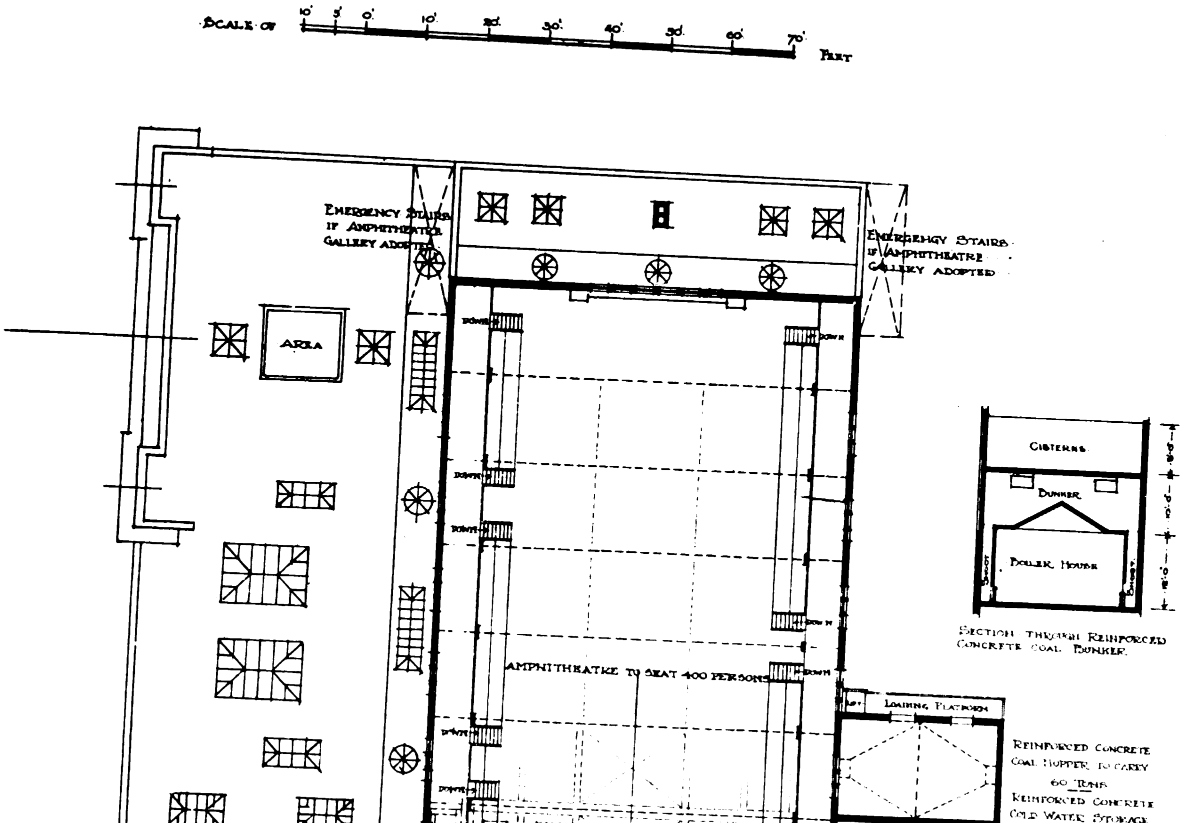
GROVND FLOOR PLAN

SELECTED DESIGN FOR NEW CE

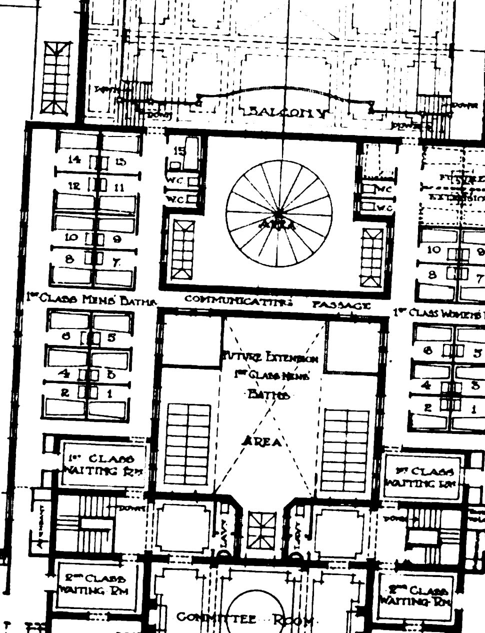
Mr. HAROLD BUR

…OF …INGTON-LONDON

…OSED …TRAL BATHS


SCALE OF 10' 5' 0' 10' 20' 30' 40' 50' 60' 70' FEET
EMERGENCY STAIRS IF AMPHITHEATRE GALLERY ADOPTED
EMERGENCY STAIRS IF AMPHITHEATRE GALLERY ADOPTED
AREA
AMPHITHEATRE TO SEAT 400 PERSONS
BALCONY
CISTERNS
BUNKER
BOILER HOUSE
SECTION THROUGH REINFORCED CONCRETE COAL BUNKER
LOADING PLATFORM
REINFORCED CONCRETE COAL HOPPER TO CARRY 60 TONS
REINFORCED CONCRETE COLD WATER STORAGE TANK TO HOLD 20,000 GALLONS OVER
1ST CLASS MENS' BATHS
COMMUNICATING PASSAGE
1ST CLASS WOMENS BATHS
FUTURE EXTENSION
FUTURE EXTENSION 1ST CLASS MENS BATHS
AREA
1ST CLASS WAITING RM
1ST CLASS WAITING RM
2ND CLASS WAITING RM
2ND CLASS WAITING RM
COMMITTEE ROOM
MENS 2ND CLASS BATHS
WOMENS 2ND CLASS BATHS
FUTURE BATHS
FUTURE BATHS
W.C.
LIFT
DOWN

FIRST FLOOR PLAN


PANTRY
LARDER
SCULLERY
W.C.
KITCHEN
SITTING ROOM
SITTING ROOM
BED ROOM
BED ROOM
BED ROOM

SUPERINTENDENT'S QUARTERS
2ND FLOOR

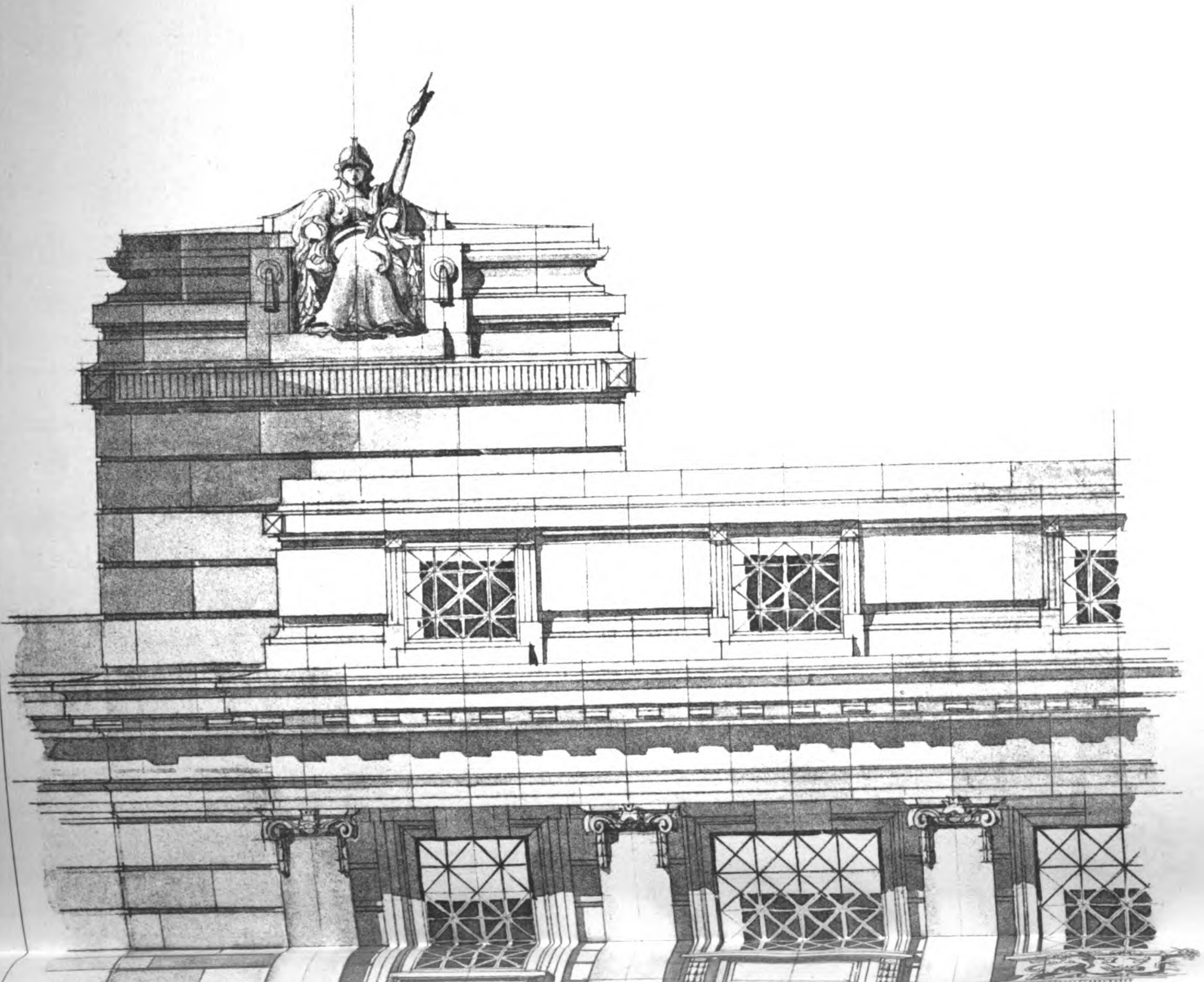
…NTRAL BATHS, PADDINGTON, W.

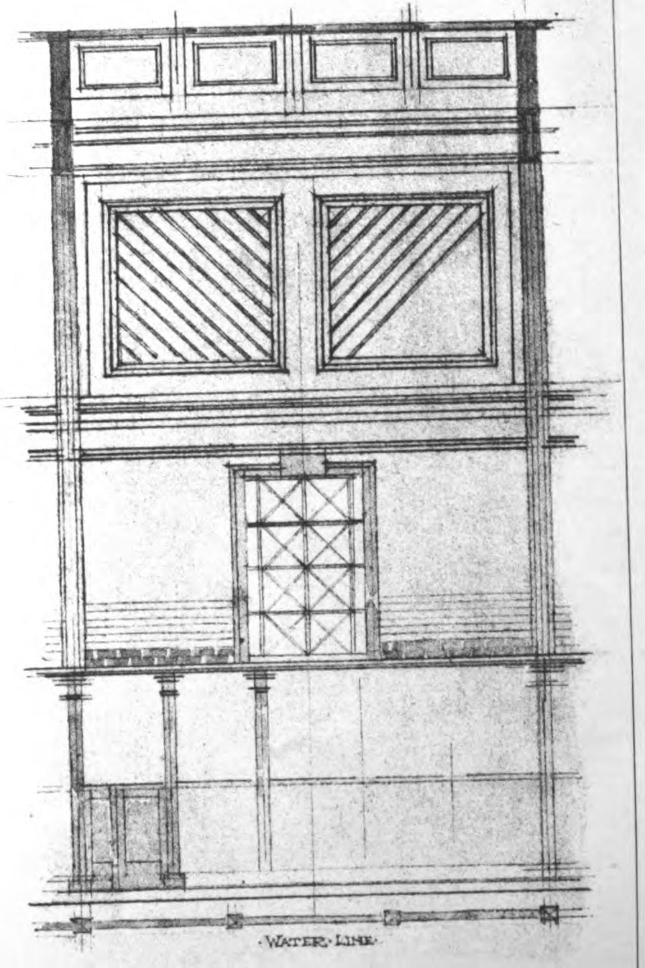
…ESS, Architect.

PHOTO-LITHO SPRAGUE & Co LTD 69 & 70, DEAN STREET, SOHO, W

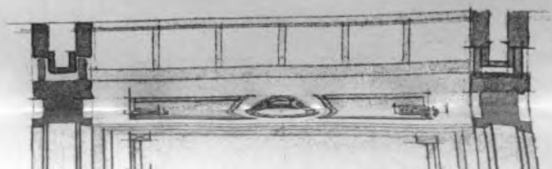
BOROUGH OF PADDINGTON · LONDON

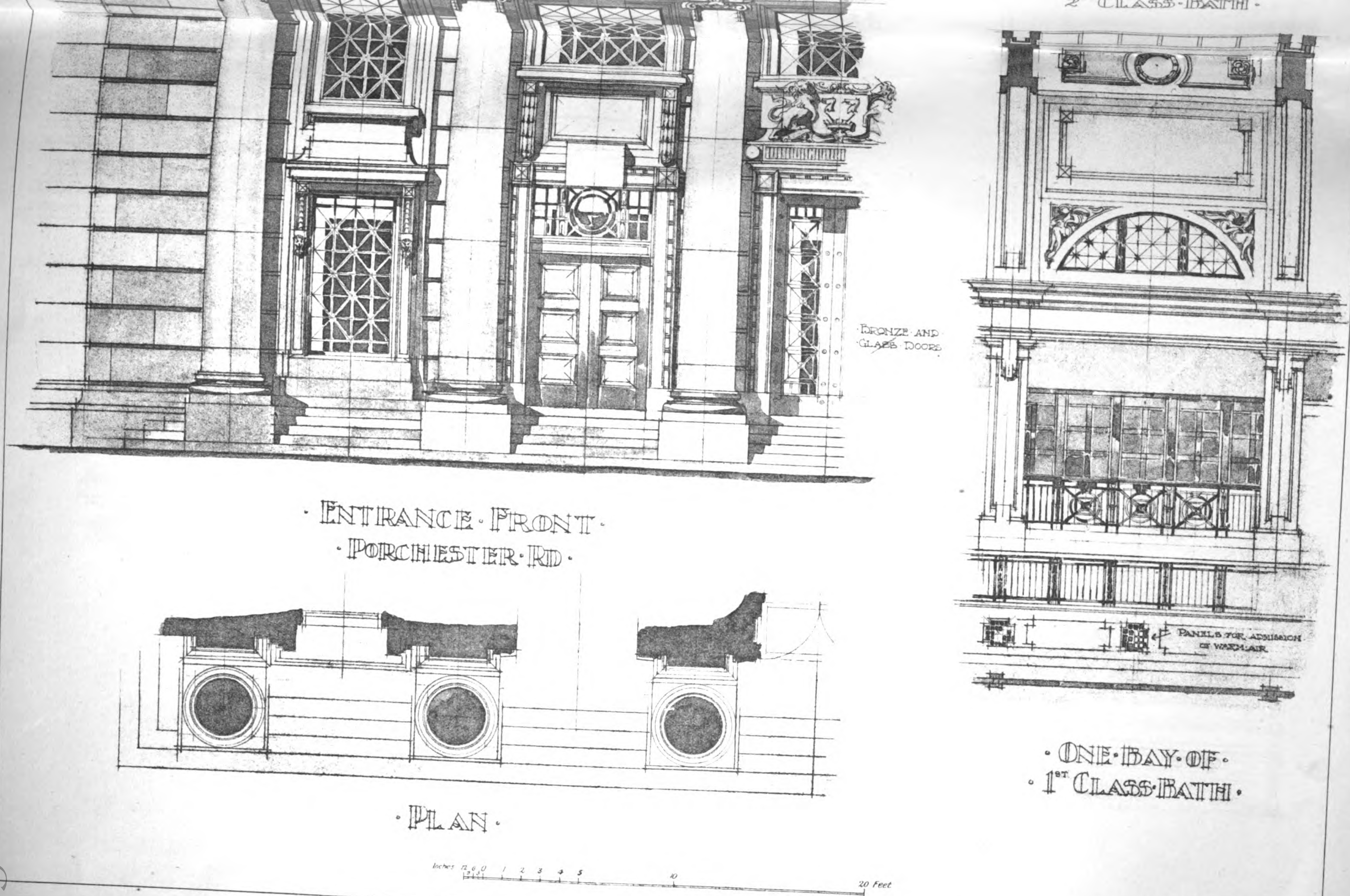
PROPOSED · CENTRAL · BATHS





· ONE · BAY · OF ·
2ND CLASS · BATH ·

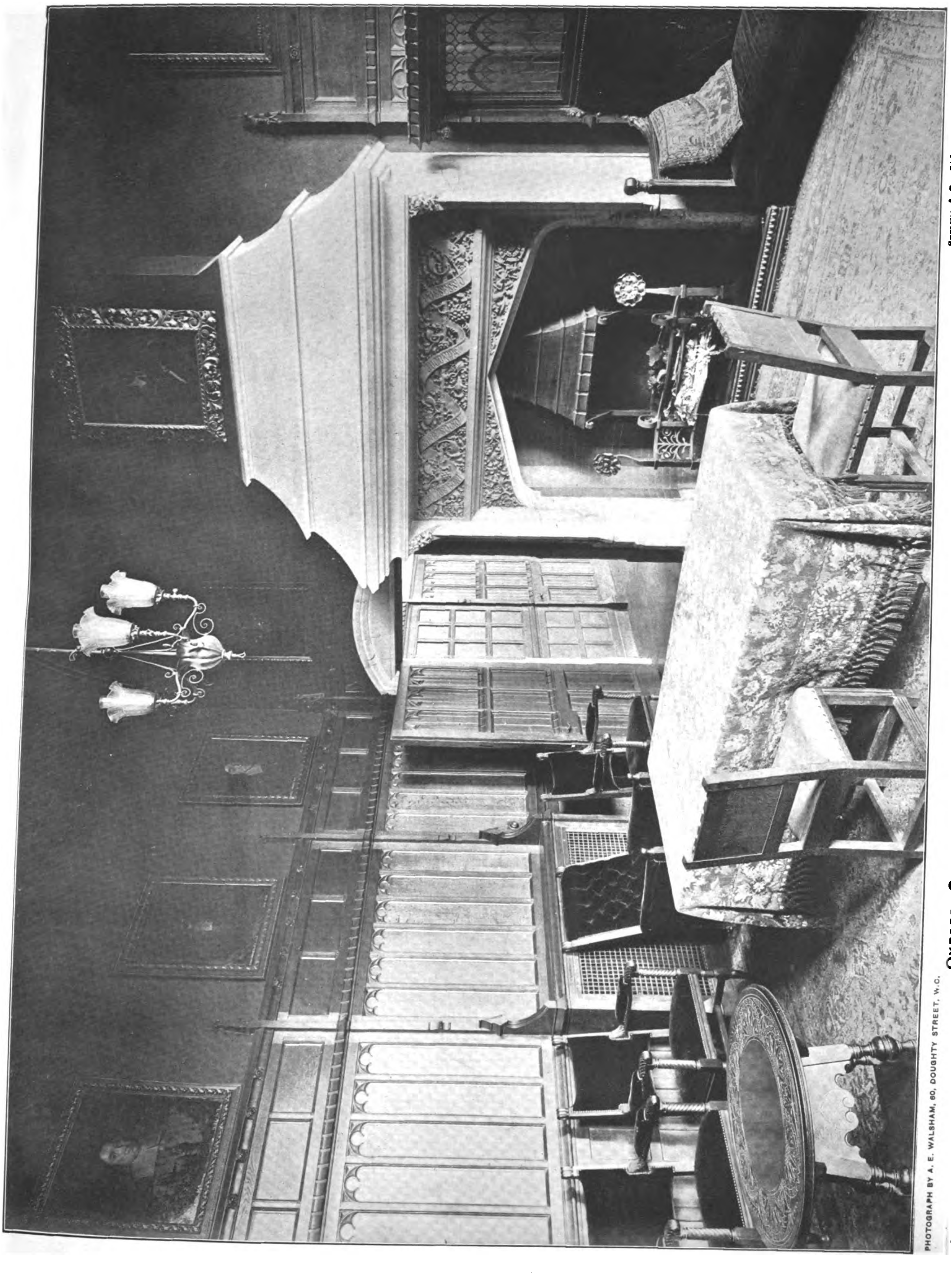



2nd CLASS·BATH·
BRONZE AND GLASS DOORS
·ENTRANCE·FRONT·
·PORCHESTER·RD·
·PLAN·
PANELS FOR ADMISSION OF WARM AIR
·ONE·BAY·OF·
·1st CLASS·BATH·
Inches 12 6 0 1 2 3 4 5 10 20 Feet

"INK-PHOTO" SPRAGUE & Co LTD 69 & 70, DEAN STREET, SOHO, W

SELECTED DESIGN FOR NEW CENTRAL BATHS, PADDINGTON, W.

Mr. HAROLD BURGESS, Architect.



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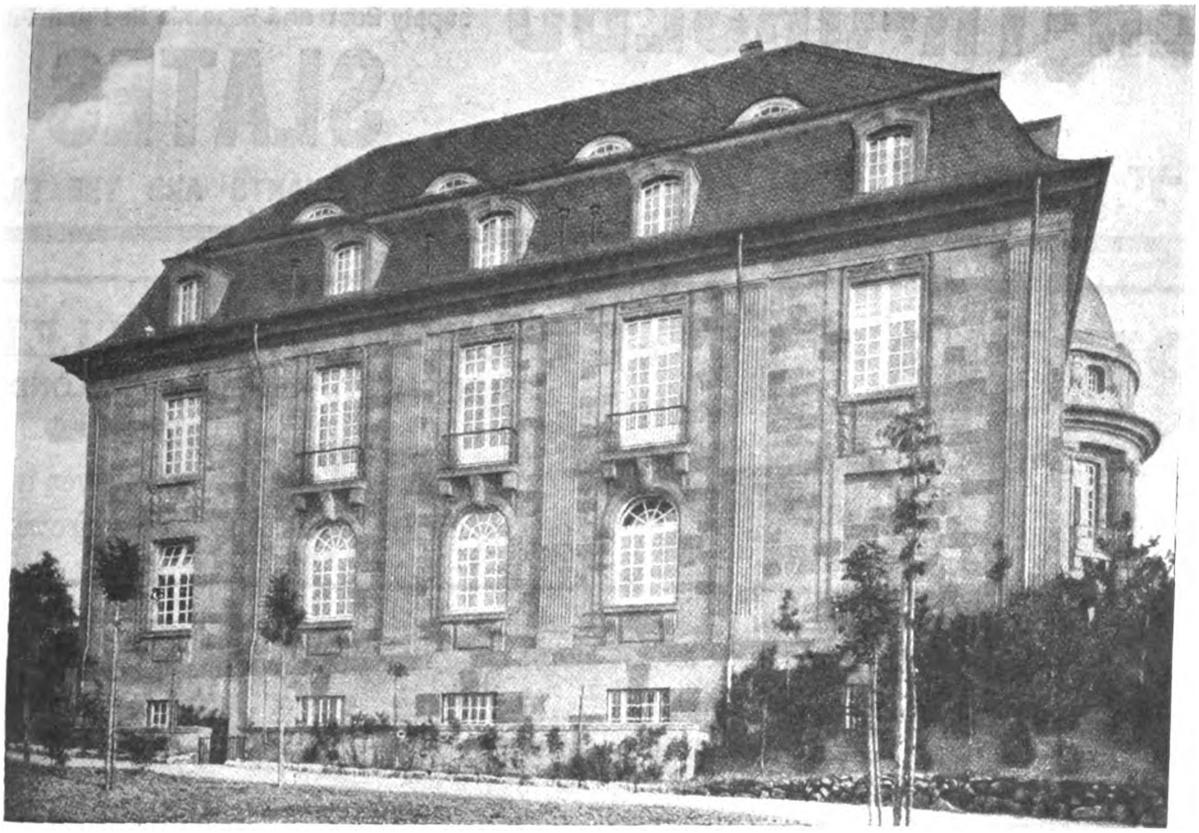

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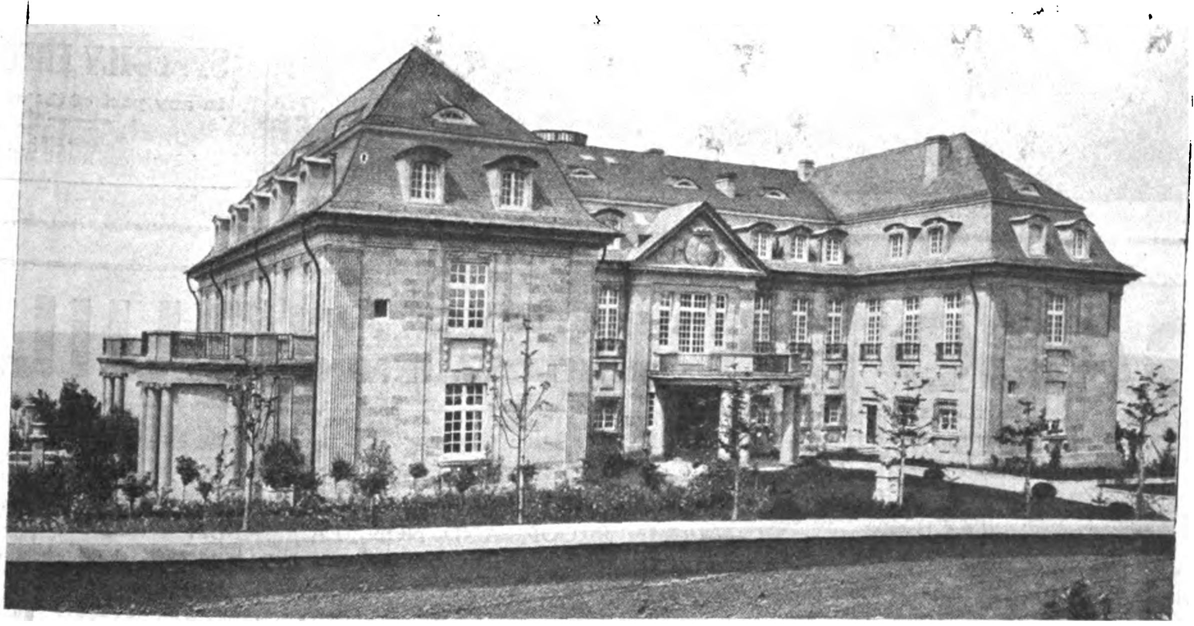

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ENTRANCE FRONT.

HOUSE FOR THE BARONESS VON BEITZENSTEIN AT STUTTGART.—Messrs. SCHLOSSER & WEIRETHER, Architects.

Once the Renaissance was established, it seems that elaborately detailed drawings became unnecessary, and the workmen could be trusted to produce the vernacular seventeenth and eighteenth-century work, of which the charm is now generally admitted, and of which the American colonists made such good use. But with the nineteenth century, with its chaos in matters artistic, the luckless workman found himself called upon to execute work in the manner of half a dozen centuries, in many countries, in as many days. The most precise information in the form of drawings became necessary, and has continued so ever since. Now, it is not that architecture suffered from too much drawing (I think that is impossible), but rather from drawing misapplied; that is, there was, and still is, in some quarters too much drawing in the design, and not enough drawing of it. If 80 per cent. of the drawing put into the average commercial competition or domestic designs of last century and more recently had taken the form of the tracing paper's refining

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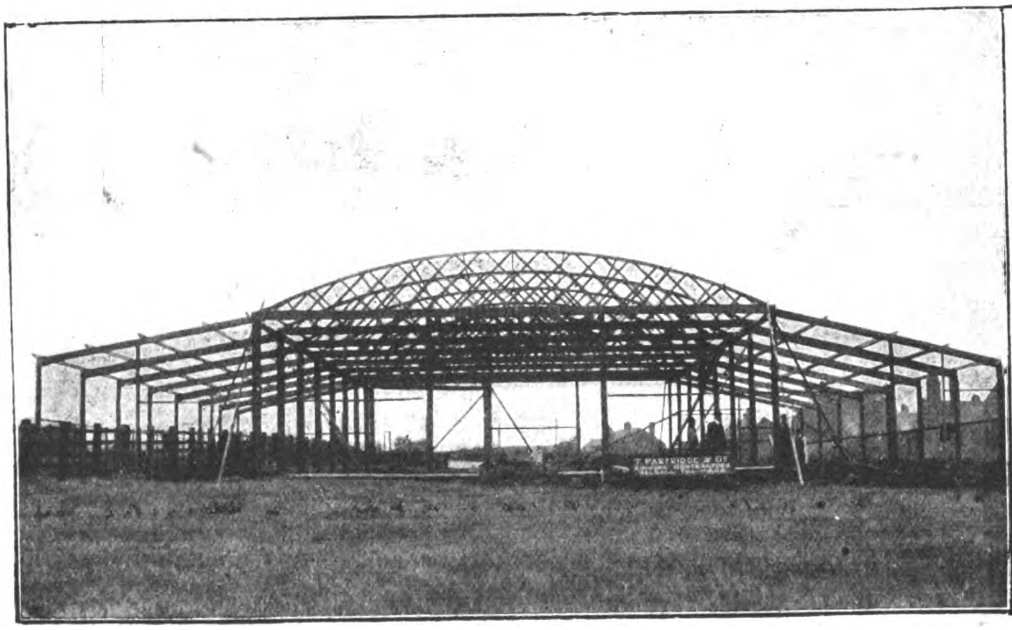

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furnace, and numerous perspective studies from every point of view, might we not have been spared from the senseless choppings and blockings, trouser panels, and the ubiquitous swag which disfigure so many of these buildings?

Technique and the Machinery of Drawing.

In deciding the manner in which a drawing is to be executed it is very necessary to distinguish between the difference in function of what I will call "study drawings" and working drawings, which are respecting, suggestive, and explicit. One occasionally sees working drawings decked up with shadows, &c., and I am afraid also so-called working drawings are sometimes, to say the least, sketchy. The result is unsuccessful in either case. It should be evident that no working drawing for a successful piece of work can be produced without the previous preparation of exhaustive study drawings.

In addition to mere manual skill the production of an architectural drawing, in any manner, of course necessitates a thorough knowledge of materials, the forms which the draughtsman expresses being determined not by caprice, but by the functions of parts and properties of materials, although these are secondary to the question of expressiveness of form. In the use of decorative materials, the necessity for beauty of form decreases as their decorative value increases.

As mediums we have the pen for line work, the brush for wash in monochrome and colour, and the pencil, probably the most useful all-round instrument for delineation, capable of giving a marvellous range of effects from delicacy equal to a silver point to the sparkle of "slashy" pen-and-ink work. The coloured pencil and chalk, too, is an undeservedly neglected medium. We shall recall the works of Mallows, J. B. Fulton, and Robert Atkinson as showing mastery of the pencil in distinctive ways.

The value of line in any type of drawing can hardly be exaggerated, but its use alone should be reserved for working drawings (which, by-the-by, we may flatter ourselves have attained a degree of excellence in recent years, and even show signs of being carried too far). Although the delicate line perspectives which we associate with Laterouilly and his contemporaries, in which the effect of distance is increased by the thinning of the receding lines, are very charming, the method is too laboured and lacking realistic effect for us to desire its revival.

Pen-and-ink work, necessitating the adoption of a somewhat rigid convention, allows of more easily acquired perfection with these limits, while with a medium allowing a broader manner success, though more difficult, will be the greater accomplishment.

As systems we have direct or orthographic projection, isometric projection, and perspective. The value of the first two-dimensional system may be increased, from the descriptive point of view, by the employment of sciography, the neglect of which during a few generations was not justified by the contemporary standard in design, and which we are all glad now to see revived.

The practice of indicating shadows seems to have ceased during the Gothic revival, while in exchange we adopted the thick-line and Oxford frame manner. I think we may congratulate ourselves on the passing of these fashions, which sacrificed a lot of refinement and feeling for detail, and is responsible for much coarse and vulgar design.

Isometric projection is a valuable system, combining the effect of perspective to some extent, with the added advantage of the possibility of reading to scale in three dimensions from the single drawing.

Now, although there is promise of improvement in design through the revival of delicately drawn and shadowed and rendered elevational drawings, I hope that we shall not forget our perspective. The English school has always been strong in perspective, and the system always must be unrivalled for the realistic representation of solid forms. To me it is astonishing that the rules of perspective remained undiscovered so long and that the uninitiated still find it easier to draw objects in plan and elevation, *i.e.* as they are, than in perspective, *i.e.* as they always have and always will actually see them.

Probably the most descriptive way of presenting any project to the lay mind is by means of the bird's eye view.

In no discussion of drawing can mention of "the Orders" be omitted. We must all be glad to see these models of proportion stripped of the senseless arithmetical fog which so long blinded our youth to their beauty. But the rheumatism inflicted by Palladio and others is being massaged away so that they may regain their pristine flexibility and grace.

As to sketching, it is difficult to say whether sketching helps the study of perspective or the study of perspective helps sketching most; probably the honours are easy. But it is much easier to see how a line goes if we know how it should go.

Again, the student, in arranging his drawings on the sheet and in determining the character and weight of letters, &c., obtains valuable training in the all-important subjects of balance and proportion and fitness of feature to composition.

I have referred to the advantages which may be expected to result when drawing becomes a subject of general culture, and it seems desirable to consider how its study may be made easier—how the machinery may be simplified—for the simpler the machinery and the more easily mastered, the more serviceable, of course, is the machine.

Tracing and copying are valuable means. Tracing, while ensuring a certain degree of success and corresponding encouragement, allows the whole of the attention to be concentrated on the subject and quality of line, and is, therefore, of the greatest value in the early stages of instruction. Although it is possible to crawl along the lines thinking of something else, the student will soon find that he is able to impart character to his tracing which may even turn out better than the original.

Other useful aids in copying, enlarging, and reducing are squaring (by which a task too difficult to be tackled as a whole may be split up into a hundred parts, each easily dealt with), the pentagraph and camera lucida, useful instruments, which have the advantage of requiring something more than mere manual dexterity to manipulate. Whilst as an elementary training in the realisation of solid forms and the relation of parts exercises in "graphical discussion" prove excellent.

I do not propose to burden you with details of materials and their manipulation and questions of technique, which are rather matters for demonstration than description, and will, therefore, conclude by putting before you a series of slides, chosen primarily for the various manners of draughtsmanship they exhibit, but which I hope may also be of interest to you on account of the subjects they represent.

BUILDING PROGRESS IN THE PROVINCES AND SUBURBS.

A LIST OF WORKS PROJECTED OR COMMENCED.

(N.B.—Local Authorities, architects, and others are invited to submit full particulars for insertion in this weekly list. Where districts are not entered against names of architects and builders the address is as a rule local.)

ENGLAND.

Buckinghamshire.

High Wycombe.—Royal Grammar School. Mr. A. Vernon, P.P.S.I., architect, 41 High Street. Messrs. C. H. Hunt & Son, contractors (£14,200).

Cheshire.

Burleydam (near).—Chapel, Dods Green. Mr. H. Pickard, architect, Talbot Street, Whitchurch (Salop).

Cornwall.

Coverack.—Six workmen's houses, for the Helston R.D.C.; also

Mullion.—Six workmen's houses.

Derbyshire.

Chesterfield.—County Council tuberculosis dispensary, Tapton Lane.

Derby.—Council School, Clarence Road: proposed additional 700 places.

Technical College: extension. Messrs. Waller & Sons, R.I.B.A., architects, 17 College Green, Gloucester

Devon.

Buckfastleigh.—Thirteen workmen's dwellings (£2,700).

Dartmouth.—Council School.

Silverton.—U.M. Church.

Durham.

Birtley.—House and shop, also eight houses in flats, Pine Street. Mr. B. Bolam, builder, Durham Road.

Boldon Colliery.—Sixteen homes, Hedworth, for the Durham Aged Mineworkers' Homes Association.

Chapel-en-le-Frith.—House, Hall Hill, for Mr. S. Brittain.

Chester-le-Street.—Congregational Church and schools and manse (£3,500).

Forty-six houses, near North Baddick Hall, for Mr. J. J. Paget.

Houghton-le-Spring (near).—Twelve houses, Sedgeletch, for Mr. J. Fisher.

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DURHAM—*continued.*

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Six houses, Diamond Terrace, for Mr. G. P. Kay.
Two houses, South Terrace, for Mr. J. Tighe.

Springwell.—House in flats, Usworth Road, for Mr. T. Mitchell.

Witton Gilbert.—Twenty-three houses, Whitehouse Farm, for Mr. T. Lawson.

ESSEX.

Beacon Tree Heath.—House, Whalebone Lane, for Mr. J. French.

Harold Wood.—Two houses, Fitzilian Avenue, for Mr. G. Wingfield.

Hornchurch.—Three houses, Ernest Road, for Homesteads, Ltd.

Parkeston Quay.—Railway Church, Makins Road (500 sittings). £2,000.

Shoeburyness.—Baptist Church, Richmond Avenue.

Stanford-le-Hope.—St. Joseph's R.C. School, Southend Road.

HAMPSHIRE.

Portsmouth.—St. Cuthbert's Church, Copnor (800 sittings). £12,000. Mr. E. Stanley Hall, architect.

HEREFORDSHIRE.

Hereford.—Workmen's dwellings (£10,200). Mr. G. Field, contractor, Blackheath, Birmingham.

ISLE OF WIGHT.

Newport.—Royal I.W. County Hospital: King Edward VII. Memorial ophthalmic ward.

KENT.

Bromley.—Bank and shop, Market Square. Mr. H. R. G. Smallman, A.R.I.B.A., architect, 8 Queen Street, London, E.C.
Workhouse: Infirmary.
Cemetery, Watling Street: chapel (£1,400).

LANCASHIRE.

Blackburn.—Public Halls, Blakey Moor.

Chorlton-on-Medlock.—Church, Plymouth Grove.

Liverpool.—Public Elementary School, Barlow's Lane, Fazakerley: enlargement for additional 550 places.

Ulverston.—Cinema Theatre, The Ellers. Messrs. J. W. Grundy & Son, architects, Central Buildings.

LINCOLNSHIRE.

Sleaford.—Victoria Hotel, Southgate: alterations.
House, London Road, for Mr. J. H. Sharpe.

MIDDLESEX.

Northwood.—Presbyterian Church.

Sunbury.—Bungalow, Watersplash Road, for Mr. G. Longley.

NORTHUMBERLAND.

Newcastle-on-Tyne.—Nurses' Home for the Board of Guardians.

SHROPSHIRE.

Shrewsbury.—Shrewsbury School: library, art gallery, &c. (£6,000).

SOMERSET.

Bishop's Lydeard.—Police Station and lock-up. Mr. J. Twyford, contractor, Mantle Street, Wellington.

Combe St. Nicholas.—Four working-class dwellings.

Meare.—Seven working-class dwellings (£1,500).

Taunton.—House, Leslie Avenue, for Mr. H. G. Smith.
Two houses, Leslie Avenue, for Mr. F. Tottle.
Houses, Greenway Road, for Mr. T. Lowe.

STAFFORDSHIRE.

Lichfield.—House, London Road, for Mr. F. Worthington.
Minor's House, Bore Street: additions and alterations for Mr. F. M. Tayler.

Newcastle-under-Lyme.—Workhouse: Children's Home, Thistleberry Avenue.

Stafford.—Seven houses, Oxford Gardens. Mr. W. Skelhorne, builder, Gaol Road.
Four houses, Weston Road, for Mr. H. J. Clay.
Two houses, Cambridge Street, for Mr. G. Smith.
Ten houses, North Street, for Mr. W. H. Johnson.

Wolverhampton.—Ten firemen's houses, Wadham's Hill (£3,000).

SURREY.

Croydon.—Royal Normal College for the Blind: extension.

Mortlake.—Workmen's cottages.

SUSSEX.

Bexhill.—St. Stephen's Mission Room (£500).

Cowfold.—Eight workmen's cottages (£1,300).

Withyham.—Council School for eighty places.

WARWICKSHIRE.

Birmingham.—Blue Coat School, Harborne Road.

Coventry.—Municipal Technical Institute, Pool Meadow (£24,500). Mr. A. W. Hoare, architect.

WESTMORLAND.

Shap Wells.—Hotel: alterations for the Earl of Lonsdale (£2,000 to £3,000).

WILTSHIRE.

Chippenham.—Twelve workmen's houses, Wood Lane (£2,320).

Salisbury and Trowbridge.—Tuberculosis Hospitals.

WORCESTERSHIRE.

Droitwich.—The Imperial Hotel-Hydro, Corbet Avenue, for Mr. F. T. Evered.

YORKSHIRE.

Barnoldswick.—Garage, King Street, for Mr. J. Garratt.
Nine houses, Arthur Street, for Mr. H. Ibbotson.
Ten houses, Frederick Street, for Mr. G. Macdonald.

Bilton.—Elementary School. Mr. F. Raney, architect, 34A Coney Street, York.

Clayton West.—P.M. Chapel (£1,350).

Doncaster.—The "Elephant" Hotel: rebuilding.

Driffield.—Isolation Hospital for thirty-two beds (£10,950).

Elland.—Southgate U.M. Church, South End.

Goldthorpe.—P.M. Church.

Knaresborough.—Children's Homes for the Board of Guardians (£2,600).

Luddenden Foot.—Mortuary. Council surveyor.

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Thurcroft.—Nineteen houses for the Rothervale Colliery.

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Cardiff.—Bank, Cowbridge Road. Mr. W. H. D. Caple, F.R.I.B.A., architect, 2 Church Street.
Hospital, Glan-Ely: alterations. Mr. S. Williams, architect, Borough Chambers, Wharton Street.

Chirk.—Parish Church: proposed enlargement (£5,000).

Clwtybont and Ebenezer.—Thirty-six workmen's dwellings (£6,800).

Swansea.—Cwmbwrla Girls' and Infants' Schools, Middle Road.
Glanmor Council School. Mr. E. Morgan, A.R.I.B.A., borough architect, Lloyds Bank Chambers, Wind Street.

SCOTLAND.

Bathgate.—Workmen's dwellings, Edinburgh Road.

Clydebank.—St. Columba's Church: the J. H. Sharp Memorial Hall. Mr. H. D. Walton, architect, 213 West Campbell Street, Glasgow.

Cults.—Parish Church for 400 sittings (£3,900).

Dumbarton.—Poorhouse: addition.

Falkirk.—Infirmary: extension for additional sixteen beds (£1,000).

Fallin.—Board School: additions, &c. (£3,800), for St. Ninian's School Board.

Glasgow.—Merrylea Church, Newlands (670 sittings). £7,200.
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Methil.—Parish Church.

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Clones.—High School. Mr. W. R. Potts, C.E., architect, Greenbank.

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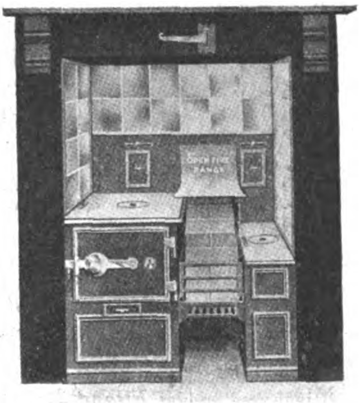

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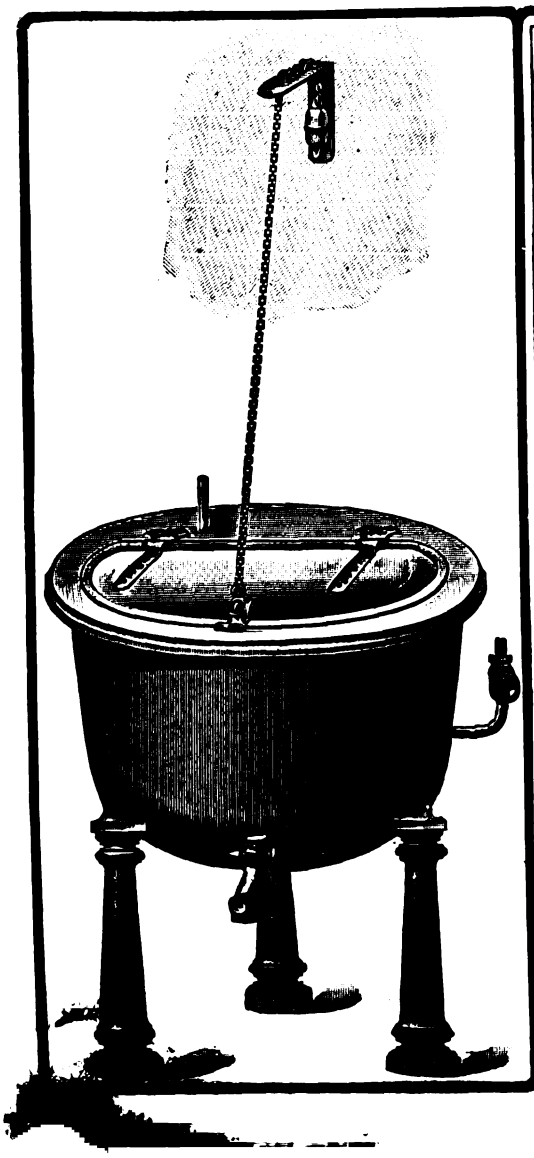

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11,284. May 14, 1913.—Soc. Puech, Chabal et Cie., and Armand Puech, 34 rue Ampere, Paris. Means for filtering water in reservoirs.

11,498. May 17, 1913.—J. S. Rigby, 26 Dagot Street, Wavertree, Liverpool. Induration of concrete blocks or articles.

11,517. May 17, 1913.—Albert Lyon, 43 King's Road, Chelsea, and William Sanderson, 3 Britten Street, Chelsea. Chimney tops.

13,744. June 13, 1913.—Jacob Robson, Overman's Houses, Newfield, near Chester-le-Street, Durham. Attachment for T-squares and similar drawing apparatus.

13,786. June 14, 1913.—D. H. Shaw, Brookside, Godley, Hyde, Cheshire. Valve-discharge water waste preventers and means for actuating same.

13,848. June 16, 1913.—W. H. Luther, of Frederick Braby & Co., Ltd., of Petershill Road, Glasgow. Corner posts of fences.

16,810. July 22, 1913.—H. L. Doulton, Lambert Sanitary Engineering Works, and C. H. Giles, 18 Albert Mansions, Battersea. Waste discharge pipes from hospital sinks and the like.

17,645. Aug. 1, 1913.—R. W. Oddy, Dyson Street, Moldgreen, Huddersfield, and Walter Jackson, 78 Church Lane, Moldgreen, Huddersfield. Chimney tops and the like.

18,085. Aug. 8, 1913.—Eugen Aron and Hermann Aron, of the Rotax Accessories Co., 43-45 Great Eastern Street, E.C. Locking device for frameless windows.

20,232. Sept. 8, 1913.—A. D. Furse, 95 St. James' Avenue, Beckenham, Kent. Treatment of house and town refuse.

20,590. Sept. 11, 1913.—F. H. Ayres, Ltd., and W. B. Booker, all of 111 Aldersgate Street, E.C. "Hard" lawn tennis courts.

22,345. Oct. 3, 1913.—Dated under International Convention Aug. 25, 1913. Leonce Huguet, St. Pol sur Ternoise, Pas de Calais, France. Ladders, scaffolding, and the like.

22,728. Oct. 8, 1913.—Karl Reinert, 32 Wilkestrs., Reinickendorf-Ost, Germany. Door locks.

28,170. Dec. 6, 1913.—G. E. Hughes, Room 23, Crown Building, Calgary, Alberta, Canada. Ventilation of the bowls or pans of water closets.

29,052. Dec. 16, 1913.—The Kinnear Manufacturing Co., of Columbus, Ohio, U.S.A. Shutters, doors, curtains, and the like, and means for actuating and controlling same.

5,929. March 9, 1914.—Dated under International Convention March 8, 1913. Otto Johansen, Vesterbrogade 65, Copenhagen, Denmark. Device for securing door latches against operation.

6,284. March 12, 1914.—F. J. Turner, Newtown, Sidmouth, Devon. Casements.

11,019. May 9, 1913.—H. S. Langton, 57 Dafforne Road, Upper Tooting, S.W. Extension ladders.

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Correspondence

[The Editor will not be responsible for the opinions expressed by Correspondents.]

The Relief to the Rates.

Sir,—If your readers will spend a few shillings and a few hours in reading the "History of Local Rates in England," by Dr. Edwin Cannan, and the report of the recent lecture of Professor Willard before the Royal Historical Society on the "Assessment and Collection of the Mediæval Subsidies," they will find that it took Parliament and the King's Bench upwards of five hundred years to learn that they could not upset the natural laws of political economy, and that in practice it was impossible for the overseers to rate personal property. The result was to create the standard of value for all local rates which was embodied in the Parochial Assessments Act of 1836 in the simple formula that "no rate for the relief of the poor in England and Wales shall be allowed by any justices, or be of any force, which shall not be made upon an estimate of the net annual value of the several hereditaments rated thereunto; that is to say, of the rent at which the same might reasonably be expected to let from year to year, free of all usual rates and taxes, and tithe commutation rent charge, if any . . ." and the Act of 1840 which provided for the exemption of stock-in-trade and other personal property.

From the report of the debate on the Budget, I see that the Chancellor of the Exchequer stated that "the relief is not to the land, but to improvements on the land. . . . It is in order to avoid giving more relief to the land that we propose that it should be a relief to the improvements." As personal property is now exempt from taxation by the Act of 1840, the "improvements" referred to must be something that has been added to the "land" to enhance its value, and such improvements are always claimed by the Inland Revenue Commissioners to be part of the freehold, *i.e.* "the land"; therefore, in spite of the Chancellor's arithmetical calculations, the process of giving "relief to the improvements" under the new standard of value, which I gather is to be set up by the new "Rating Bill" which is to embody the "legislative proposals of the Government with regard to the proposed . . . valuation," the "land" is no longer to be valued by the standard of 1836, *i.e.* at the full annual value of the benefit its occupation in its existing condition confers upon its occupier, but on "a system which is more equitable, more impartial . . . an assessment of the real value of the property, that it should separate the site from the improvement"; that this system will, in effect, adopt "the valuation of the Finance Act of 1909," and have "the advantage of obtaining the capital value of the whole subject, separating site from improvement, and also the advantage of getting the real annual value as well as the capital value, so that it will be adapted to the present method of taxation."

Although I have spent my life in the practical consideration of these questions, I fail to understand the meaning of this proposal or the manner in which it will reduce the burden of the rates upon those who occupy land combined with the improvements thereon for industrial purposes. The Chancellor was mistaken in stating there is a provision in the Finance Act, 1909, for "getting the real annual value," as that Act only provides for ascertaining the capital values of the "gross value," the "total value," and the "site value," but as the "improvements" are to be valued under the new scheme it must be inferred that the "gross value" is to be the amount of the assessment on which the occupier will in future be rated, and that this assessment is to be calculated on the "cost," and not on the "value" of the improvements, which will include the plant and machinery fixed to the freehold. If this be so, it will hardly result in a relief to the manufacturer, but will rather be a method by which his total assessment will first be largely increased and then reduced by some arbitrary allowance of a less sum on the value of his improvements.

The Commissioners have not a sufficient staff of valuers to enable them to make valuations of the machinery and plant which is contained in the factories of the three kingdoms, and in no case that I am aware of have such valuations been made; but in some cases the "gross value" has been arrived at by adopting the figures supplied by the owners as the capital value of the plant and machinery, and in other cases the value of the plant and machinery has not been included, this divergence being due to the difference in the views of the valuers; but whatever else it may produce, such a method of arriving at "the real value" can but work "unequally, unfairly, partially," and even if it were not so "its principles are unsound and unfair," while the main principle of the existing standard of the Act of 1836 is that no rate shall be valid if every person assessed therein be not rated at the full annual value of his occupation.

The proposal appears to be another attempt to evade the results of the "higgling of the market," in order to set up a new method of arriving at some value which is not a market value, but which by its complications conceals that fact.

The class who will undoubtedly benefit by a reversal to the absence of a uniform standard which led to the many abuses disclosed by the valuable report of the Commission of 1834 will be the professional men who will be employed in again evolving order out of chaos.—Yours truly,

G. Humphreys-Davies.

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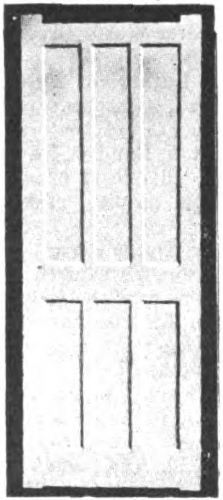

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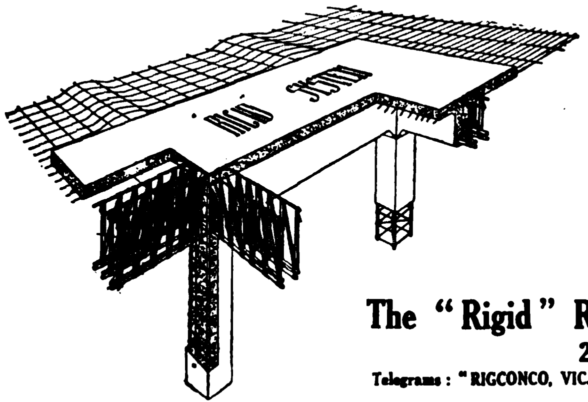

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FORTHCOMING EVENTS.

Friday, June 5.

Concrete Institute : Junior Members' Meeting.

Monday, June 8.

Royal Institute of British Architects : Business General Meeting and Adjourned Special General Meeting.

Carpenters' Company : Exhibition of Works in Wood and Wood Carving opens.

Tuesday, July 9.

Chartered Surveyors' Golfing Society : Second Scottish and Northern Spring Meeting at Edinburgh.

DESIGN AND DRAUGHTSMANSHIP—ENGLISH AND FRENCH.

The concurrent exhibition of representations of architecture afforded by the collection of photographs and drawings of British architecture in the rooms of the Jeu de Paume building and the architectural section of the annual Salon of the Société des Artistes Français affords an opportunity for comparison between the present position of the art of architecture in France and in England, as well as between the methods of their representation. In regard to English architecture, as shown at the Paris exhibition, there can be no hesitation in placing first our domestic work, examples of which have been obtained from the following architects: Ashley & Newman, F. T. Baggallay, M. H. Baillie Scott, C. E. Bateman, Reginald Blomfield, R.A., Detmar Blow & Billerey, W. H. Brierley, H. P. Burke Downing, Walter Cave, Basil Champneys, Collcutt & Hamp, H. O. Cresswell, E. Guy Dawber, Dunn & Watson, Horace Field & Simmonds, B. F. Fletcher, Fletcher & Pinkerton, Flockhart & Guthrie, Forsyth & Maule, Sir Ernest George, A.R.A., & Yeates, W. Curtis Green, Gerald Horsley, Howard Ince, Arthur Keen, Geoffry Lucas & Lodge, E. L. Lutyens, A.R.A., C. E. Mallows, E. J. May, Arnold Mitchell, Ernest Newton, A.R.A., Sir A. C. Nicholson & Corlette, Niven & Wigglesworth, Parker & Raymond Unwin, A. N. Prentice, Professor Edward Prior, C. H. B. Quennell, Romaine Walker & Jenkins, R. Weir Schultz, Professor F. M. Simpson, F. W. Troup, C. F. A. Voysey, E. Prioleau Warren, Warwick & Hall, Maurice E. Webb, T. M. Wilson, Percy S. Worthington. In the Scottish section domestic architecture is represented by the work of Hippolyte J. Blanc, J. J. Burnet, William Leiper, A. N. Paterson, J. A. Morris, J. B. Dunn, Campbell & Hislop, H. E. Clifford, J. Keppie, C. R. Mackintosh, W. Kelly.

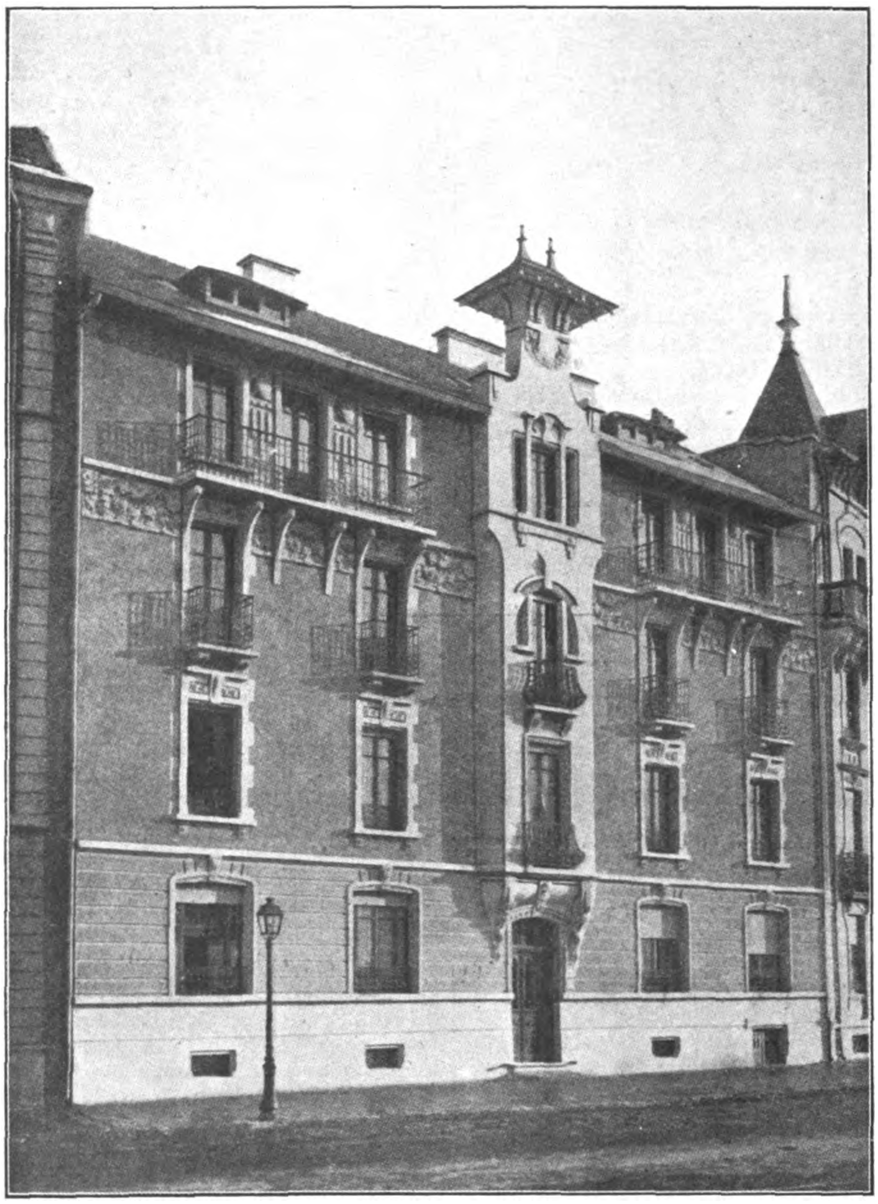
Thus a very large majority of the British architects whose work has been selected by the joint committee of the Royal Institute and the Architectural Association are represented by their domestic work, even in those instances where these architects have achieved notable successes in ecclesiastical or public buildings. It is clear, therefore, that the London Committee, in preparing a representative exhibition of modern British architecture, have felt that domestic work was a strong card to play, and in this there can be no doubt that they have acted wisely and have put forward that department of present-day architecture in which British architects are incontestably superior to their French colleagues—a superiority which, indeed, is recognised by the French public, who, we understand, are in the habit of commissioning their architects, diplomés par le gouvernement and prize-men of the Ecole des Beaux-Arts, to design for them country houses à l'Anglaise. The clients, moreover, have, we also understand, sufficient perception to recognise that they do not get what they ask for; that the peculiar charm of the English country house eludes the ability of the highly and severely trained architect from the Beaux-Arts. There cannot, in our opinion, be the least possible doubt that the superiority of English domestic architecture has been achieved, not merely despite the lack of academic training, but in consequence of freedom from the rigorous study of Architecture with a capital A, of the design of monumental buildings in the grand manner.

The architect who has achieved the Prix de Rome cannot for the life of him design a country house fit to hold a candle alongside those by Mr. E. L. Lutyens, Mr. Ernest Newton, Mr. Guy Dawber, Mr. Curtis Green, Mr. Geoffry Lucas, and a score of other English architects. His efforts either result usually in something on a par with the English speculating builder's productions of half a century ago, or, recognising the utter futility of his training, he kicks over the traces between which he has been driven through the Ecolé and indulges in l'art nouveau, for much of which, by the way, in its present form, freed from its former wild excesses, we are free to express, faute de mieux, we will not say admiration, but respect for good intention.

Having so clearly before our eyes the inevitable effect of Beaux-Arts methods upon domestic architecture, we cannot but regret the present-day rush of all our greater architectural schools towards an imitation of the Ecole, and that, perforce, a feeble imitation, for it has taken several generations to bring the Ecole des Beaux-Arts to its present position, and the traditions of those successive generations have been sifted through the hands of many capable and critical artists before the present standard has been reached.

We are not even sure that those traditions are not on the point of crystallising into mannerisms. Take, for example, the two designs which have been placed equal for the concours Achille Leclere, the drawings for which, by M. A. Bernard, pupil of M. Bernier, and M. M. H. Péchin, pupil of M. Laloux, are hung in this year's Salon. The subject is "A pavilion for the City of Paris at the Lyons Exposition." Here we have in both designs the same old dome, the same old big semicircular arches, the same old one-storey giant order that have by now become the stock elements of Beaux-Arts designs for such monumental buildings.

Nor is it only in domestic architecture that the Beaux-Arts man fails when he descends from the ambitious projets of the Ecole to the practical work of producing beautiful buildings. The modern ecclesiastical architecture of France is, in any standard of criticism, as far below that of England to-day as is the domestic, and this, although the building of churches affords but a tithe of the opportunities now that fell to the lot of the deceased architects of the nineteenth century, whose work is illustrated at the Jeu de Paume—John Bentley, Sir Arthur Blomfield, G. F. Bodley, William Burges, William Butterfield, J. L. Pearson, G. Gilbert Scott, John Sedding, George Edmund Street, all of whom are represented almost entirely by their ecclesiastical work, the only exception in the group in which they are included being R. Norman Shaw.



[From *La Construction Moderne.*

HOUSE AT BELFORT.—M. CH. SCHMUTZ, Architect. REVULSION FROM BEAUX-ARTS TRADITION.

In the present Salon there are three sets of competition drawings for a church in the parish of Jeanne d'Arc, in the Place Dupleix, Paris. Not one of these is fit to be mentioned in the same breath with the work in the English exhibition contributed by Austin & Paley (Hertford; Stockport; Widnes), C. E. Bateman (Sutton Coldfield), W. H. Bidlake (St. Agatha, Birmingham), H. P. Burke Downing (All Saints, Clapham; St. Barnabas, Mitcham), W. D. Caröe (St. David, Exeter), Basil Champneys (Slindon), Gerald Horsley (Longsdon), Temple Moore (Pusey House, Oxford; Eccleshall; Barnsley; Harrogate), Sir A. C. Nicholson & Corlette (All Saints, Hampstead, and others), Professor Edward Prior (Roker), G. H. Fellowes Prynne (West Dulwich; Johannesburg; Exmouth), G. Gilbert Scott (Liverpool Cathedral), W. J. Tapper (The Annunciation, Old Quebec Street, London; The Ascension, Malvern).

The best of the three French designs in our opinion, as regards external treatment, is that of M. Hulot, in a reasonable version of Auvergnat Romanesque with a lofty west tower. M. P. Gosset shows a good plan—planning is one thing that is well learnt at the Ecole—but a weirdly severe exterior. M. Sainte-Marie-Perrin's design is a typical modern French Gothic production, a hash-up of motifs from every period, from semicircular-arched eleventh-century to Flamboyant, covered with an iron roof. Another notable church design in the Salon to which attention was drawn by M. Mora is that by M. Bobin for the church of St. Anne at Paris. Based on an elaborate version of Romanesque, principally of Italian flavour, with a soupçon of Byzantine, there is a sad lack of proportion between the parts. The turrets above the towers are not quite sure whether they would not like to be minarets, and the various features lack cohesion as well as sympathetic harmony. The Beaux-Arts cannot turn out creditable church architects.

The space devoted to architecture at the Salon—not far short of that in the whole of our Royal Academy rooms—enables French architects to shew their designs in complete sets of geometrical drawings to large scale, and they avail themselves of the opportunity and contribute beautifully worked up coloured plans, sections, elevations, and occasionally perspectives, so that each projet is fully illustrated. There are 286 exhibits in the Salon, including water-colour sketches, as compared with 220 in our own architectural room at the Royal Academy. Yet the French critics prefer our modest perspectives in the exhibition to the elaborate plans and elevations of their own countrymen. One needs to be an architect to fully understand the French presentment of design, and even then the get-up is rather a hindrance than a help.

There can be no doubt of the high level of draughtsmanship, of a strictly conventional manner, reached by the students of the Ecole des Beaux-Arts, or of the industry and archaeological erudition that are necessary for and shown by such productions as the "essais de restauration" accomplished by M. Boussois in his Prix de Rome testimony of the Tiburine Villa of Hadrian, by M. Pillet in his Palace of Darius at Susa, and by M. C. J. Bernard in his Baths of Lutetia, all of them evolved from sufficiently scanty ruins by help of scholarship and imagination. But as studies in design, surely there is far more value in M. Boussois' collection of water-colour drawings of Renaissance fountains from Viterbo, Bologna, Florence, Monreale, Perugia, and Prato, than in his colossal studies of Hadrian's Villa.

The method and tradition of the Ecole des Beaux-Arts leads to the apotheosis of the drawing rather than to an appreciation of the building. Design is judged by the excellence of a "projet," free from all consideration of the limitations of actuality in the matters of site, cost, and requirements. The object of a student is to produce a magnificent "projet," not to design a beautiful building. Therefore, when he comes in contact with a client or a committee, a restricted site or limited funds, he collapses. The Prix de Rome man can design a villa for the Emperor Hadrian or a palace for Darius, he cannot design a week-end cottage for Jacques Bonhomme.

NOTES AND COMMENTS.

THERE appeared recently in the *Times* a leading article on "Tiptoe Art," which is worthy of consideration by those amongst us who are following the mode of aspiring to the French view of architecture as a transcendental form of art, whose only aim is to reach on tiptoe to the evolution of magnificent projets—on paper. Says the writer in the *Times*: "A man cannot be sublime on tiptoe in literature any more than in life; and literature is full of writers on tiptoe who might have been quite amusing if they had been content with a natural posture; but, as it is, the world forgets them, or remembers them only to smile at their failure. Most of us in real life do not go about pretending to feel far more than we do feel, to be more passionate or more earnest or more witty than we are. We are content with the natural ease of ourselves; but the moment we take to an art we want to be like the greatest artists, like those rare men to whom the sublime comes naturally." He points out that there is a place in art for Goldsmith and Miss Austen, for Chardin and Vermeer, as well as for Dante and Michel Angelo. This is just what, in architecture, the Académie des Beaux-Arts has forgotten, and what English architecture up to now has remembered. The writer of the article further says, "The mere practice of any art does not change a man's nature or his interests. If in his life he is mainly concerned with ordinary things in a quiet way, he cannot express a passionate concern in high translunary things just because he takes a pen or a brush in his hand." This is true, and the majority of architects in the future, as in the present, will be "concerned with ordinary things in a quiet way." There may be room for Prix de Rome men, produced at the rate of one a year, but the scores of their contemporaries who do not reach the highest level are only too likely to be injured in their capacity for dealing with "ordinary things in a quiet way" by perpetual exercises on tiptoe during their training.

A commendable innovation has been introduced at the Architectural Association by the institution of a class of country members, who, for the small subscription of 7*s.* 6*d.* per annum, will be entitled to all the privileges of members that their distance from London may enable them to enjoy. Chief of these we should place the use of the library and the receipt of the monthly journal. We regret that at present country membership is limited to those who are already members of an architectural society in the provinces. The young student who most needs membership of the Architectural Association is the isolated individual who knows no one in the profession except those in the office where he is employed.

We would suggest to the Council of the Architectural Association that they might, as a further extension of their activity, very profitably organise a branch or section or club for those English-speaking students who are studying in Paris. We have recently met several of these, and were very forcibly struck with the non-acquaintance that exists between them. The rule seems to be that a young architect in Paris meets no fellow-countryman save those who are in the same atelier or office, and even those who have been several years in Paris are ignorant of the very existence of others who have been their contemporaries. It would be of great advantage to the isolated Englishman to be able to join a compatriot for sketching excursions and other interchange of views, whilst to the novice an introduction to those already acclimatised would be of inestimable benefit.

The refusal by the House of Lords Select Committee of confirmation for the preservation order under the Ancient Monuments Act made in respect of 75 Dean Street, Soho, appears to be due to the evidence of the present owner, Mr. Mulliner, who stated that he had had search made, and not only was there no evidence that either Hogarth or Sir James Thornhill lived in the house, but according to the list of occupiers there was every evidence that they could not have done so. He restored the house, bringing his payments in respect of it to £12,800, so that it could be let to some artistic body with an obligatory provision that the premises should remain as they were. Although he tried his utmost, he was unable to find such a society to rent the house. If the nation desired to preserve the house he would do everything he reasonably could to assist, and his counsel, Mr. Lloyd, K.C., said his client would keep open for a month his offer to let the Commissioners of Works have the whole premises for the actual sum which he had paid.

The Commissioners of Works were represented by Mr. Fitzgerald, K.C., who in stating their case said that, so far as could be ascertained, the house was built at the beginning of the eighteenth century, probably in the reign of Queen Anne, and was a fine specimen of the domestic architecture of the period. It was originally the residence of Sir James Thornhill, Sergeant Painter to George I. He designed the paintings for the dome of St. Paul's, and also executed paintings at Greenwich Hospital, Hampton Court, and other places. The house possessed a very fine entrance hall, with an interesting oak staircase of the period, as well as mural paintings supposed to be the work of Sir J. Thornhill, and possibly of his son-in-law, Hogarth. The house had been empty for some years before 1912, when Mr. Mulliner purchased it and restored it. His original idea appeared to have been to preserve the house in its present state, but he said he was unable to sell it with a condition to that effect attached. Last December he agreed to grant a building lease of the site for 91 years. That involved the demolition of the house.

Evidence as to the artistic and historic interest of the house was given by Mr. L. Earle (Secretary to the Office of Works), Sir E. J. Poynter (President of the Royal Academy), Sir Charles Holroyd (Director of the National Gallery), the Earl of Crawford, Mr. Sargent, Sir Cecil Harcourt Smith (Director and Secretary of the Victoria and Albert Museum), Mr. E. P. Warren, F.R.I.B.A., and Mr. Pears (Chief Inspector of Ancient Monuments, and Secretary to the Society of Antiquaries).

In connection with the department of architecture of the University of Sheffield a vacation course open to all who are interested in the study of architecture is being arranged in conjunction with the Rev. Dr. West, A.R.I.B.A. (author of "Gothic Architecture in England and France"). The route arranged—a particularly interesting one—is London, Paris, Poitiers, Limoges, Perigueux, Cahors, Bournazel, Rodez, Albi, Toulouse, Carcassonne, Nîmes, Arles, Avignon, Orange, Le Puy, Issoire, Clermont Ferrand, Paris, London. The party will leave London (Waterloo Station) on Monday, August 31, at 10.30 P.M.; and will arrive back in London on Thursday, September 24, at 10.11 A.M. Every facility will be given and the necessary permissions obtained for sketching and photographing. The fee for the course is 26 guineas (or 23 guineas starting and ending at Paris), and this covers all the usual travelling and hotel expenses. Second-class train, first-class boat; café au lait, déjeuner, and dinner at hotels, but not in the train or boat; 56 lb. luggage free.

Those desirous of attending this course should obtain an application form from the Lecturer, Mr. W. S. Purchon, A.R.I.B.A., and submit it to the Registrar with a deposit of £2 2s. before July 15. The remainder of the fee must be sent to him before August 15.

THE LATE MR. GEORGE E. BOND.

We regret to announce the death on Wednesday, the 20th inst., of Mr. George E. Bond, J.P., of Rochester, immediate Past President of the Society of Architects. He commenced practice in the city of Rochester upwards of thirty years ago. Some of the principal buildings in the district were erected from his designs, including the town hall and municipal buildings, technical institute, free library, Royal Sailors' Home, Masonic Club, schools, theatres, and other public buildings in Chatham, and a number of schools and other buildings in Rochester. He was the architect to a number of public bodies, and had an extensive and varied practice in the county of Kent. He was a J.P. for the city of Rochester, President of the Liberal Club, and a trustee of the savings bank. He was also a prominent Freemason, and one of the founders of the Society of Architects' Lodge. He joined the Society of Architects in 1888, and for many years served on the Council, and was President for four years in succession. He was an ardent supporter of the Society's registration policy, and was a most fluent exponent of his views, both in committee and in public. It was during his presidency that the negotiations between the Society and the Royal Institute took place in regard to registration and amalgamation, in which he took a very active part. Mr. Bond was a member of the Beaux-Arts Committee and a keen supporter of its work. By his death the Society of Architects loses the support of a member who never spared himself in advancing its interests. He attended its meetings while suffering acutely from the complaint which afterwards proved fatal, and kept in touch with its work by correspondence almost to the last. Mr. Bond's death is not only a great loss to the Society, but many of its members will mourn the loss of a good friend. The funeral took place on Saturday, May 23, at St. Margaret's Cemetery, Rochester.

At Cambridge University courses of lectures are being given this term by Professor E. S. Prior on the Crafts of Modern Art, and by Professor Beresford Pete on the Renaissance and Modern Architecture.

COMPETITION NEWS.

Dysart.—The School Board of Kirkcaldy and Dysart have accepted the competitive plans of Mr. W. Williamson, F.R.I.B.A., Kirkcaldy, for the school to be erected at Blairhill, Dysart, to accommodate 600 pupils, at an estimated cost of between £7,000 and £8,000. Mr. John James Burnet, A.R.S.A., LL.D., Glasgow, who was appointed assessor, has awarded Mr. Williamson first and second places in the competition, while Mr. W. Barnet Wyllie, A.R.I.B.A., takes third place.

Lasswade.—The School Board of Lasswade (Scotland), having decided to provide a school for 500 pupils at Loanhead, recently invited competitive designs from several architects, and have now selected that by Mr. J. Inch Morrison, Licentiate R.I.B.A., 24 Duke Street, Edinburgh. The cost will be between £6,000 and £7,000, and the work will be commenced shortly. The Board's architectural adviser in the competition was Mr. J. A. Carfrae, Edinburgh.

Mold.—The first place in the competition for the fire station competition was, as stated in this column last week, awarded to Mr. J. D. Lewis, of Denbigh. The assessor placed "equal second" "Phœnix No. 1" (Mr. F. A. Roberts, Mold), "Doric" (Mr. Leonard G. Hannaford, Rock Ferry), and "Sphinx" (Mr. F. A. Roberts, Mold). Fourteen sets of designs were sent in. The assessor was Mr. G. H. Willoughby, F.R.I.B.A., National Buildings, Manchester, whose award has been accepted by the Council.

Stanley.—The Urban District Council have decided to invite the following architects to submit competitive plans for the erection of workmen's houses: Messrs. Massie & Holdsworth, Wakefield; Mr. W. Hartley, Outwood; Mr. A. Hart, Newton Bar; Mr. H. R. Pattison, Sheffield; Mr. H. Dobson, Wakefield; Mr. W. H. Ogden, Wakefield.

ILLUSTRATIONS.

HOUSE, FARINGDON ROAD, ABINGDON, BERKSHIRE.

This house is now being erected on an excellent site, comprising over eight acres of well-wooded ground, rising gradually from the road, with an uninterrupted view of several miles at the rear. The exterior walls are in 14-inch work with 2-inch cavity, and are covered externally with rough-cast. The dressings to windows, entrance porch, &c., are in Doulting stone, and the roofs are covered with Maidenhead tiles. The hall, the western end of which opens on to the loggia, is designed to receive a billiard table. There are two large bedrooms, besides stores, &c., in the roof. The house is heated throughout with low-pressure radiators, and there is a separate system for domestic supply. The whole of the lighting is by electricity from the local service. The estimated cost is £2,800, and the contractors Messrs. Hutchins & Son, of Oxford. The metal casements throughout are being supplied by Messrs. Geo. Wragge & Co. The architects are Messrs. Wilkins & Jeeves.

GARDEN FACADE OF HOUSE AT HENLEY.

This design was made by Messrs. Webb & Sutton for an American client who was anxious to obtain a new house having traditional English characteristics as regards external treatment, but with every modern American convenience internally, such as a bathroom connected with every bedroom, a private swimming bath, &c.

UPPER FRONT OF A CABINET IN MAHOGANY.

CENTRE PANEL FOR THE DOOR OF A MAHOGANY CABINET.

These illustrations are examples of the work of Mr. Mark Rogers applied to objects of domestic use. The inscription interwoven in the carving of the centre panel reads, "Talium est enim regnum coelorum."

AYLSHAM CHURCH.—BLICKLING CHURCH.

The font in Aylsham Church was described in our issue of May 15. Blickling Church, the piscina of which we illustrate, was restored by the late George Edmund Street, R.A., in 1874-76.

The screen under the west window of Bath Abbey has been removed at the instigation of the Church Council as being unsuitable and not in keeping with the architecture of the building.

WREN'S CHURCH INTERIORS: THEIR DESIGN, EQUIPMENT AND DECORATION.

By H. DUNCAN HENDRY.

CHAPTER III.

FINISHINGS.—CEILINGS.—COLUMNS.—WALL PANELLING.—DOORS AND GENERAL JOINERY.—PAVINGS.—CONSTRUCTIONAL IRONWORK.—GLASS.

WHILE the subject of planning is of considerable importance in regard to the interior design of such buildings as these we have under review, it is when we turn to the question of finishings that the distinctive note is primarily struck, as it is such features that convey the first impressions of a building, and first impressions, though often modified, are never entirely eradicated.

We know, however, that Wren attached extreme importance to the plan and depended on this for much of his effect, because it must be remembered that though the knowledge of Classic forms (the only ones Wren found at all compatible with his own tastes) was rapidly increasing, Wren himself had, practically speaking, no traditions to work on. We can gather that there was abundance of mechanical labour at hand, but craftsmen in the arts allied to building were somewhat rare. Mr. Stratton has summed up the situation rather neatly when he remarks that, "It was easy to build a wall, but to clothe it was often a serious matter."

Wren, however, was quick to seize upon an opportunity of enriching his buildings, and fully appreciated the enhanced effect obtained thereby, for though he was a magnificent engineer, Wren was an architect first and foremost, and it was as an architect that he employed craftsmen like Grinling Gibbons, Cibber and Tijou, and gave them full scope for the exercise of their own particular genius.

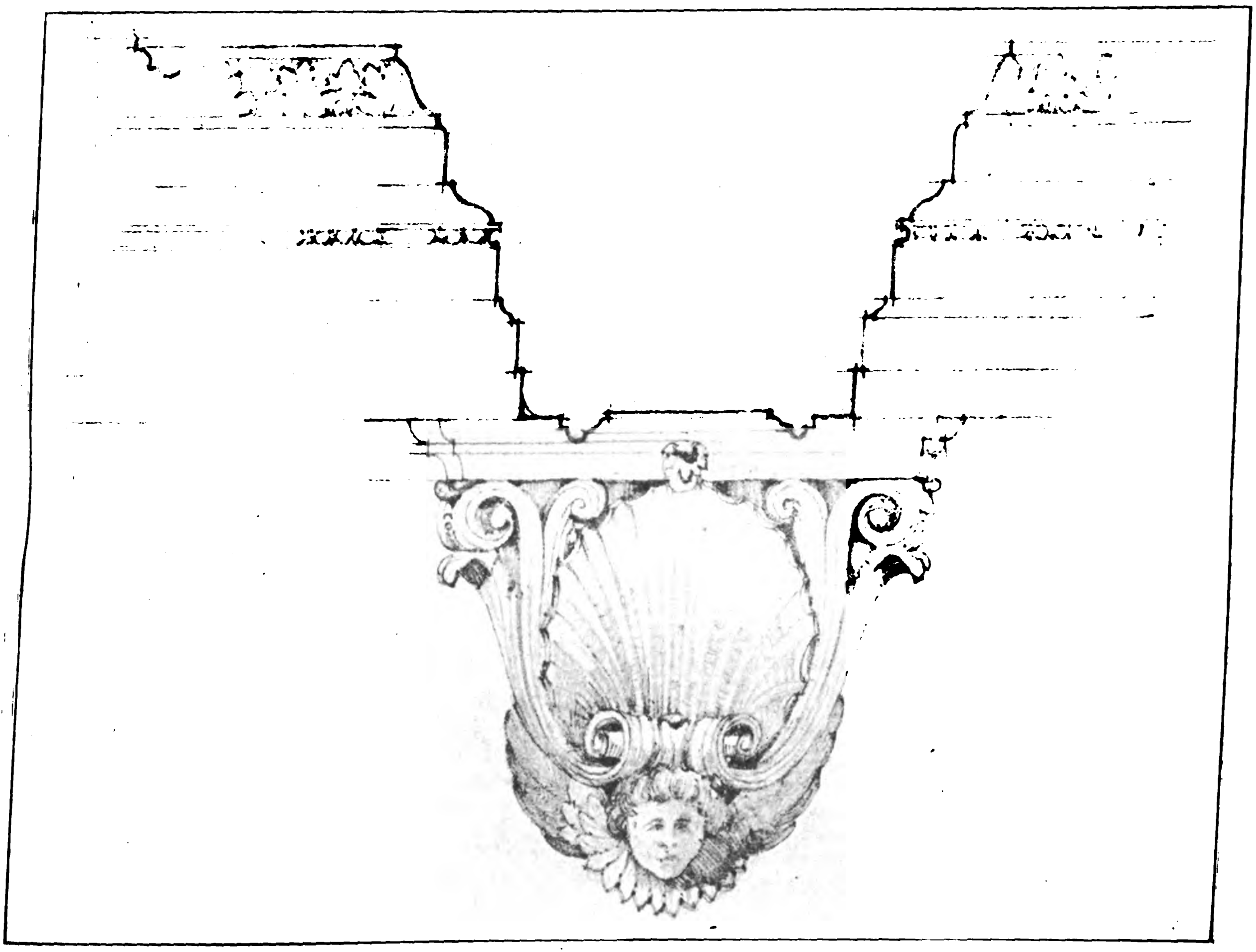
These names stand out prominently, but undoubtedly all the work attributed to these artist-workmen was not executed by them. Much of it must have been carried out by their followers, for, taking the case of Grinling Gibbons alone, it is manifestly impossible that, employed as he was in various parts of the country such as Windsor and Chatsworth as well as at St. Paul's, he could have executed all the carving traditionally associated with his name in the City.

Little seems to be known as to the executants of the magnificent plasterwork which adorns some of these churches, but that it was executed by artists of no mean ability, a cursory glance at the interiors of such churches as St. Stephen's, Wallbrook, St. Mary at Hill, and St. Mildred's, Bread Street, will clearly show. There is no fidgety handling of a splendid material here. It is treated boldly but seldom to the point of coarseness. Indeed, in the case of the church of St. Mary at Hill, the plastering is treated with extraordinary refinement, considering the period in which it was executed.

It is unnecessary here to deal with the decorative treatment of all of the church interiors, but three examples may be taken as illustrative of the others, viz., St. Stephen's, Wallbrook; St. Mary at Hill; and St. Bride's, Fleet Street. These three will also suffice to show Wren's splendid mastery of roof design.

In St. Stephen's, Wallbrook, we find the dome vaulted and flat ceiling occurring in the one building, and combining to produce an effect of unrivalled beauty and grace.

The central aisle or nave has a groined ceiling, while that over the side aisles is flat and coffered. The chief decorative feature of this interior is, however, the dome. This is coffered horizontally in four compartments, and divided vertically by sixteen bands, but in the second range of panels the central vertical band is omitted, thus forming a large panel which is filled in with circular wreath work, and a large central flower; the band again reappears in the two upper ranges. This arrangement counteracts the monotonous effect of a series of equal-sized coffers diminishing to the centre of the dome.



ST. STEPHEN'S, WALLBROOK.—CORNICE AND BRACKET TO SOFFITE IN SIDE COMPARTMENT.

The pendentives are also ornamented with triangular panels formed by wreath work round a central cartouche.

Above the pendentives runs a circular modillioned cornice. The modillions have 12 guttae on their soffites, and the coffered spaces between are nicely ornamented with paterae. From this cornice springs the dome, which is nearly semi-circular in section.

At the intersection of the groin over the central aisle, a beautifully modelled flower is worked of bold projection.

Indeed, this bold handling is greatly responsible for the splendid virility of the whole design; for instance, the circular flowers ornamenting the coffers of the dome project practically a third of their diameter, which is about two feet.

The main order employed is the Corinthian, the one which Wren used more than any other in his churches. The columns support an arch and rather shallow entablature, of which the frieze is decorated with acanthus leaves alternately extended fully and partially. The soffites of the eight arches supporting the dome have each the same bold scroll ornament as the transverse division between the two bays of the nave, while a small cherubim ornaments the keystones.

This roughly summarises the plaster decoration of St. Stephen's, and admitting, as one must, that the work is somewhat coarse in parts, the result is so exceedingly impressive that one can readily forgive the absence of detailed refinements.

St. Mary at Hill has been chosen for special consideration, because in addition to possessing one of Wren's most charming interiors, it strikes an entirely new note in the details of plasterwork.

As formerly remarked, the plan is the Greek cross one, and although probably no significance need be attached to a term of this nature, it is curious that in this church there is an unmistakable Greek feeling pervading the whole decorative scheme. The plasterwork is boldly designed, but the sections more nearly accord with Greek models than is the case in any other of Wren's interiors.

There is a good deal of individuality, however, apparent, and this is nowhere more apparent than in the chief order. Hatton calls it "a species of Doric and Corinthian," and this description is really about as apt as one could give. The columns are fluted and cabled and crowned with a form of Roman Doric capital, having a very long necking, which is ornamented with a row of acanthus leaves. The entablature is even more curious; it really consists of a deep triple fasciad architrave of which the top fascia is ornamented with paterae; the crowning members are a cavetto and an ovolo treated with a bold egg and tongue enrichment, which follows a Greek rather than a Roman model.

Although it cannot be denied that the order is somewhat nondescript, the result is so effective and the proportions so good that this free treatment must be generally admired.

Other novelties are introduced in the way of ceiling decoration by the use of the guilloche and fret ornament, these appearing on the soffites of the principal arches and around the base of the cupola.

St. Bride's, Fleet Street, next to St. Stephen's, Wallbrook, probably ranks next in order of beauty and for the proportion of its interior. It is also interesting as an example of the decorative treatment of the basilican church.

The nave is roofed with a bold barrel vault, slightly elliptical in section. This is divided into compartments by broad coffered and enriched bands springing from wall corbels of shield form. The nave and aisles are divided by a novel treatment of coupled Doric columns, standing on tall octagonal bases. The wide impost blocks over these columns admit of a very substantial appearance being imparted to the main arches, which also have coffered archivolts ornamented with flowers.

The entablature is carried round the slight altar recess and stops against the east window; at this end pilasters are substituted for columns, but the result is not very edifying, and, indeed, the whole east end is altogether unsatisfactory, while it has not been improved by the recent decorations, which suggest an unusually bizarre cinematograph theatre.

The ceiling over the aisles is groined, with transverse arches springing from corbels on the side wall to the entablature of the main arcade. The corbels are rather interesting, as they consist of a square block corresponding to the fascia and cyma of main cornice, but the place of the bed mould is taken by a winged cherub.

The compartments over the nave are enriched with a finely modelled square panel, and here, it may be noticed, Wren has avoided a mistake made in St. Andrew's Wardrobe, and St. Peter's, Cornhill. That is the introduction of a circular wreath on a barrel vault, with the consequent unpleasant effect of circle on plan applied to a circular section.

Much could be written upon the subject of decorative plastering in Wren's churches, but a detailed summary of all is impossible here, so we must content ourselves with, in addition to the foregoing remarks, a brief mention of a few other interesting features.

St. Magnus, London Bridge, shares with St. James's Garlickhythe the novelty of the employment of the Ionic order for the main arcade. Both are of the traditional Renaissance forms, *i.e.*, the volutes showing on all four sides, but in the former the columns are fluted and cabled, and in the latter they are left plain, or at least *were*; they have now been painted to represent a very yellow marble.

St. James's Garlickhythe, with others, such as St. Lawrence Jewry, and St. Nicholas Cole Abbey, well illustrate the treatment of flat ceilings. They are invariably divided into broad and finely proportioned panels with strong ribs, and the effect is never oppressively weighty.

St. Swithin's, Cannon Street, also has beautiful moulded plasterwork, a bay-leaf frieze and festoon treatment to the oval lucarne windows being particularly effective. The wall plastering in this case, however, has suffered from an excess of stencilled decoration.

St. Clement Danes is often claimed as Wren's richest interior. It is also one of his poorest, actually. The Corinthian columns are weak and unconvincing. They support a slight impost arch, from which springs the barrel vault over the nave and the groined vaulting over the aisles. The whole ceiling is most richly ornamented, but its richness excites more wonder than admiration. St. Mildred's, Bread Street, well bears out the promise of its plan. The decoration of the main arches at either end and the pendentives of the dome are particularly worthy of study.

We may close this account of the plasterwork of Wren's interiors with a reference to St. Mary Abchurch. After seeing the luxurious decoration of St. Clement Danes, and then passing to this quiet building in the City, it seems almost inconceivable that they could have been executed under the superintendence of the same man.

In St. Mary's the only decorative plaster consists of a modillioned cornice running round the base of the dome and the pilaster capitals and corbels, from which spring the absolutely plain arches which support the dome.

The beautiful simplicity and refinement of this church recalls an example of a similar character in the Badia di Fiesole at Florence, by Brunelleschi.

The next feature which attracts attention is the joinery of these churches, both moulded and enriched, and under this heading we may consider such finishings as gallery fronts, wall panelling, screens, doors, &c.

Here again we are faced with the impossibility of a detailed survey, and we must be content with a more or less haphazard reference to typical and especially interesting examples.

We know that Wren had a special liking for good English oak, and that he knew how to use this material, or cause it to be used, to the best advantage, may be seen in many instances of broad surface panelling and moulded columns.

With regard to gallery fronts, these are generally framed in panels varying from square to four times their width in length. At the west end they were generally supported on wooden columns, his preference being fairly evenly divided between Corinthian, Ionic, and Doric. Instances in the order named occur at St. Lawrence Jewry; St. Mildred's, Bread Street; and St. James's, Piccadilly.

In several cases a special treatment was adopted for the whole west end. Examples of such treatment are found in St. Lawrence Jewry, and St. Nicholas Cole Abbey.

The former is the finer example, and is in many respects one of the richest specimens of woodwork of the period in this country, and we may be pardoned for dwelling at some length upon it.

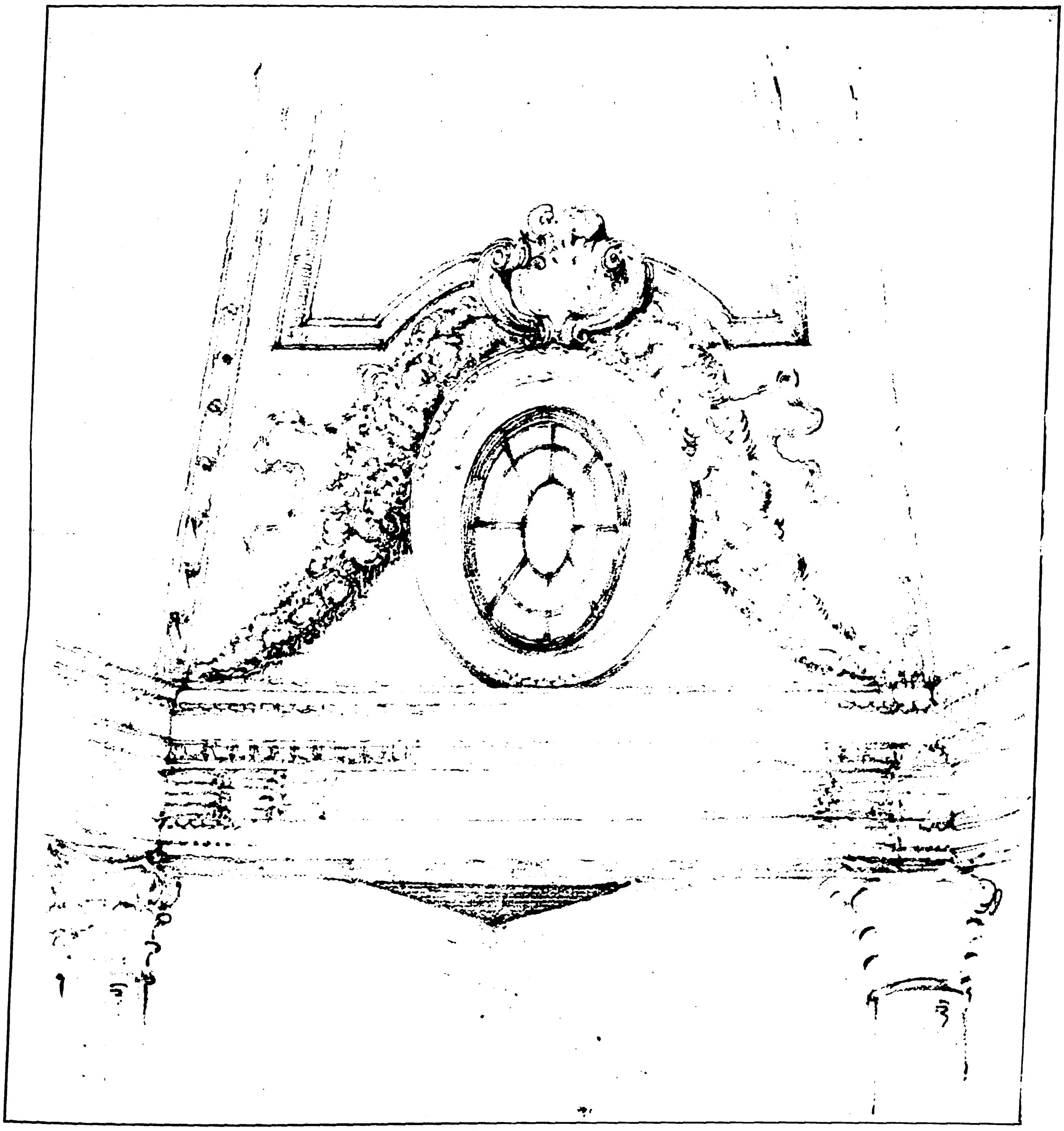
It consists of two arches leading from the nave to the tower and vestibule respectively, placed symmetrically and filled in with most beautiful doorways and screenwork. The pediments over the doorways are broken, and on pedestals supported by the keystones are placed large standing figures of angels, each holding a palm branch. Between these doorways, the organ stands on a sort of raised platform, supported by fluted Corinthian columns and projecting into the body of the church.

The organ-case itself is most superbly carved, the panels having, in common with several other organ galleries, various musical instruments carved in high relief.

As an example of the proper handling of wood, this west end is particularly instructive.

St. Nicholas Cole Abbey is somewhat similar in arrangement, and, while it has nothing of the richness of St.

Lawrence, it profits by a greater unity and continuity of its main lines.



ST. SWITHIN'S, CANNON STREET.--DETAIL OF LUCARNE WINDOW.

The side and west galleries of St. Bride's, Fleet Street, are generally considered the one blemish in an otherwise beautiful interior, and undoubtedly the dividing of the coupled columns half-way up is a very unhappy contrivance. The galleries are carried on small pilasters at the sides of the columns, and the impression is given that the gallery is a later addition. There are no records, however, to prove that it was not part of the original scheme. The gallery is also curious for an upside-down appearance, due to the dropping of one set of the mouldings in a circular form concentric with an oval wreath, one of which occurs in the centre of each bay.

Turning to the consideration of the wall panelling, which, except where it has been stripped by some vandalistic act, always graces the walls of these churches, we find that it was generally from seven to ten feet high, though this is often regulated by the height of the sills of the windows or the bases of the columns. It was divided into two or three panels in its height, the topmost of which is usually only some six or eight inches in depth, and crowned by a capping moulding, the underside of which is sometimes enriched with carving, as in St. Nicholas. The panelling itself is seldom enriched in any way, but instances occur at St. Stephen's, Wallbrook, where every third or fourth panel of the upper rows is ornamented with a carved shield and palm-leaf spray.

With regard to screens, these are now generally conspicuous by their absence. Two examples are to be found in the churches of St. Peter, Cornhill, and St. Margaret, Lothbury, that in the latter having been removed from its former position in All Hallows, Great Thames Street, when the latter was demolished.

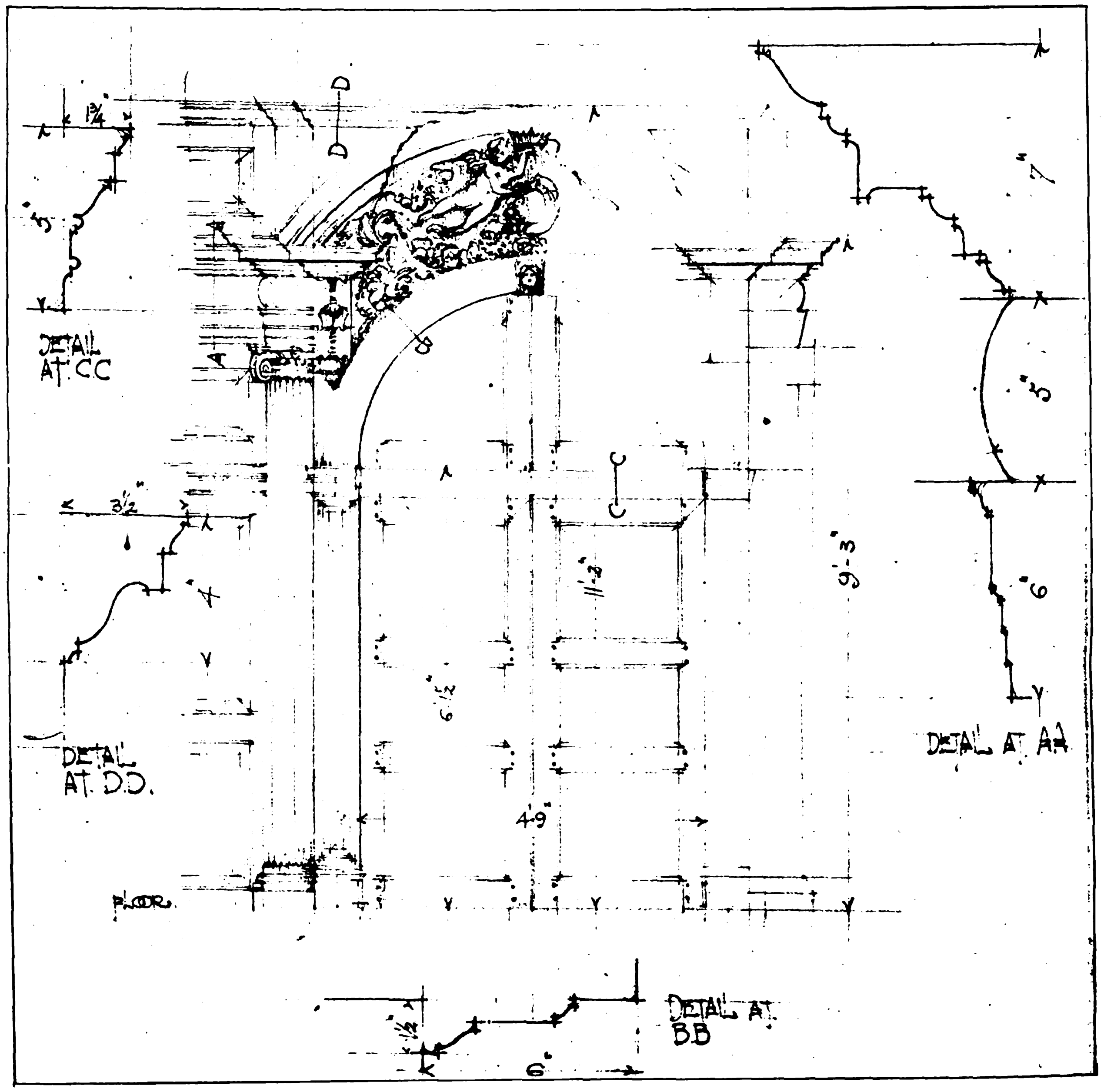
The screen in the church of St. Margaret's has often been supposed to have been the gift of Dutch merchants and executed by Dutch workmen, but recent research has somewhat disposed of this idea; while the screen has many points of resemblance to that in St. Peter's, Cornhill, which, it is known, was carved by Englishmen.

Both these screens exhibit some beautiful carving, that in St. Peter's being, perhaps, the most sober and successful. The spiral skeleton columns of the St. Margaret's screen are somewhat suggestive of a steel spring, and it scarcely seems a correct treatment of the material.

The screen in St. Peter's is nothing like so fanciful, but it is still a bold piece of work. Tradition assigns its design to Sir Christopher Wren's daughter, though with what authority it is difficult to say. In St. Margaret's also there is a particularly fine baluster screen between the nave and aisle colonnade. It is partly of the seventeenth century and partly modern, from the late Mr. Bodley's design. It is about ten feet high, and is a nicely proportioned piece of design.

From the consideration of screens we may pass on to another feature upon which Wren often lavished much of his finest design and his craftsmen their superb handiwork. We refer to the doors. Nearly every church for which Wren was responsible has one or more of these dignified entrances, sometimes lavishly enriched with carved keystones, fluted columns, and swags or drops of fruit and flowers.

Three especially fine ones exist in the little church of St. Martin's, Ludgate Hill, and, indeed, they form quite the feature of this church.



ST. MARTIN'S, LUDGATE HILL.—DETAIL OF DOOR TO VESTIBULE.

They are different in design, but form a harmonious group by their uniform proportions.

The illustration will give some idea of the style of the doors. It is a little richer, perhaps, than usual, but nevertheless is quite typical.

Before leaving the subject of joinery, there are two features which are not so intimately a part of the general decorative scheme of the church. These are the staircases within the towers and the vestries.

With regard to the former, they are usually of the open-newel type, and invariably well designed, with wide treads and quarter-space landings and solid square newels, with panelled and occasionally carved faces. The balusters are usually of the spiral form, supporting a substantially moulded handrail, the mouldings often being broken round the newel to form a capping to the same.

The vestries are also very beautiful apartments. The little vestry of St. Lawrence Jewry, is a perfect gem. The fireplace occupies one corner of the room, and a picture above it is set in a panel of bold acanthus moulding.

The cornice of the room, which breaks above the doorway, is among the finest of Wren's designing. Wreaths similar to those over the fireplace are suspended above the two double doors and down the sides, while the other panelling in three heights has the panel moulds ornamented with a simple cable enrichment. The treatment of the architrave to the door, with its acanthus enrichment, is particularly worthy of study.

We may now conveniently turn to another phase of Wren's interior—that is, his use of decorative ironwork. This, unfortunately, is very insignificant in quantity, and is confined to ornamental sword and mace rests, of which we shall deal in the succeeding chapter.

Metal screens of good design occur in St. Andrew's by the Wardrobe to mark the chancel, but the only instance of wrought-iron used in a constructive sense occurs at St. James Garlickhythe, where a pair of decorative wrought-iron stanchions support the organ gallery. Unfortunately, these iron supports are crowned by gilded wood capitals of Corinthian design, which look distinctly inappropriate.

There are also one or two instances of wrought-iron altar rails, those at St. Clement Danes being fairly good; but, remembering Tijou's work in St. Paul's, it is singular that there is so little decorative wrought ironwork employed in the City churches.

With regard to floors, the majority of the churches have been repaved in recent years with aggressively "Gothic" pavings, but occasionally one meets an example where Wren's simple black and white marble tiles have been left. They were generally about twelve inches square and placed diagonally. The font was often raised on a form of dais, and the marble paving of this was treated in a decorative manner. Instances of this occur at St. Margaret's, Lothbury, and St. Magnus the Martyr, London Bridge.

A reference to the glazing may serve to bring this chapter to an end.

In very few of Wren's churches does the original glazing exist. In far too many cases it has been replaced by stained glass of the crudest possible variety, in the alleged Gothic manner, with ill results both to the appearance and the lighting of the church.

Wren's simple lights in small squares were eminently suited to London's smoky atmosphere, and it seems a pity such alterations were ever made. True, there are instances of stained glass being used in the original building, but they are very few.

A typical example of Wrennian glazing can be seen in St. Benet's, Paul's Wharf.

The squares were usually about 8 in. by 5 in., and the iron bars and frame from $\frac{3}{4}$ in. to 1 in. wide by $\frac{1}{2}$ in. deep, the frame being let into the stone or brickwork. The glass was of the crown variety.

(To be concluded.)

BRITISH SCHOLARSHIPS AT ROME, 1915.

PARTICULARS have been issued of the scheme of competition for the Scholarships in Architecture, Sculpture, and Decorative Painting at the British School at Rome offered by the Commissioners for the Exhibition of 1851.

Each scholarship will be of the value of £200 per annum. Candidates must be British subjects, and less than thirty years of age on July 1, 1915.

The Faculty reserve to themselves the right, at their absolute discretion, to alter any of the conditions, periods, dates, or times herein specified, and to decline to hold the final competition or to select any candidate for it or to make any recommendation for the scholarship.

The Faculty also reserve to themselves the right to publish photographic reproductions of or exhibit any of the works submitted by competitors.

(1) *Architecture.*

In this section there are two scholarships—namely, that offered by the Commissioners, and the Henry Jarvis studentship, offered by the Royal Institute of British Architects.

The Rome Scholarship will be of the value of £200 per annum, and will be ordinarily tenable at the British School at Rome for three years.

The Jarvis Studentship will be of the value of £200 per annum, and will be ordinarily tenable at the British School at Rome for two years. This studentship will be confined to students or Associates of the R.I.B.A. (see Section B), but otherwise the conditions for the two awards will be the same.

The competition, which will be conducted by the Faculty of Architecture of the School at Rome, will be in two stages:

(*a*) An open examination.

(*b*) A final competition, open to not more than ten candidates selected from those competing in the open examination.

(*a*) THE OPEN EXAMINATION.

Competitors should notify the Hon. General Secretary, British School at Rome, 54 Victoria Street, London, S.W., of their intention to compete in this examination as early as possible, and in any case not later than January 23, 1915, and with such notification must enclose a certificate of birth or a declaration as to age and nationality duly attested by two responsible persons.

The subject for this examination will be a "Courts of Justice."

The building is to be placed on a site 400 feet square, having its principal frontage to a river; the buildings flanking the site are to be Government offices and their design is to be suggested, and they may be connected with the Courts building by open or covered ways. The water level of the river is 20 feet below the ground level of the site.

The Courts of Justice are to be four in number, for civil business only, and they are to be contained in one building; each Court is to measure 2,400 feet super.; public access to the Courts is to be from the river front through a large hall, Judges and barristers to enter at the back. Four Judges' rooms, and rooms for barristers, jurors, solicitors and witnesses are to be provided, together with a Bar library. A lower ground floor must be provided, suitably arranged for large numbers of clerks and for subdivision as offices. No provision is to be made for prisoners.

The drawings required are:—

Plan of ground floor showing the general disposition of the surrounding buildings, including the river embankment; plan of the lower ground floor; two elevations; longitudinal and transverse sections—all to a scale of $\frac{1}{16}$ inch to a foot; one principal elevation to $\frac{1}{8}$-inch scale; a detail elevation of part of the river façade to $\frac{1}{2}$-inch scale; a perspective of the river front in which the Courts of Justice themselves shall measure 18 inches.

A short descriptive report must accompany the design.

The general drawings may be finished in ink or pencil, and the view in any manner at the competitor's discretion.

Each design must bear a motto, and must be accompanied by an envelope enclosing the name of the competitor.

Drawings must not be executed as part of a school course, and the competitor must submit a written statement to the effect that this regulation has been complied with, together with a declaration that the work has been done by his own hand.

The drawings, together with the above-mentioned documents, must be sent to the Hon. General Secretary, British School at Rome, c/o the Secretary, Royal Institute of British Architects, 9 Conduit Street, W., and must reach him not later than noon on January 30, 1915.

(*b*) THE FINAL COMPETITION.

This competition will be held *en loge* in London, and particulars regarding it will be announced hereafter.

The successful candidate in this competition will be recommended for appointment to the Rome Scholarship, and the student or Associate of the Royal Institute of British Architects who is placed next in order of merit will be recommended for appointment to the Jarvis studentship.

(2) *Sculpture.*

The conditions in this competition are precisely similar to those of last year, full particulars of which were given in our issue of August 15. Intending competitors should notify the Hon. General Secretary as early as possible, and in each case not later than January 23.

(3) *Decorative Painting.*

This competition will be in two stages:

(*a*) An open examination.

(*b*) A final competition, open to not more than four candidates selected from those competing in the open examination.

(*a*) THE OPEN EXAMINATION.

It is desired that competitors in this examination should submit the following works:—

1. Two figure compositions in colour suitable for wall decoration, and a full-size uncoloured cartoon of a portion of one of these.
2. One painting of a head and one painting of a figure from the life in oil or tempera.
3. Drawings of the nude figure from the life.
4. Sketches of designs for decorative purposes, which should include some architectural studies.

Not more than twelve works may be submitted in all.

(*b*) THE FINAL COMPETITION.

This competition will be held in London from April 26 to June 19, 1915, and will be open to not more than four candidates selected from those competing in the open examination.

The subject will consist of a design for a wall decoration to fill a given space for a given purpose, and to a given scale.

Eight weeks will be allowed for the execution of the design, and during that time candidates will be provided with studio accommodation and given an allowance of £2 per week for models.

The successful candidate in this competition will be recommended for appointment to the Commissioners' Scholarship.

THE Barnstaple Town Council are going to ask the Devonshire County Council to allow Mr. Percy Morris, F.R.I.B.A., the county architect, to prepare plans for science and art schools proposed to be erected on the Strand at a cost not exceeding £10,000.

THE SURVEYORS' INSTITUTION.

The statistics with which it has become customary to open the annual report of the Council of the Surveyors' Institution, again show a substantial addition to the membership, the total for 1914 exceeding that of the previous year by 381, an increase which has only once been exceeded. The growth of over 700 in two years must to a considerable extent be looked upon as exceptional, having been mainly caused by the desire of intending professional Associates to enter prior to the closing of the doors to those who have not passed the final as well as the intermediate examination. The total is 5,481, and is made up as follows:—Honorary Members, 23; Fellows, 2,000; Professional Associates, 2,967; Associates, 57; Students, 363; Colonial Fellows, 71.

Finance.—The finance report is satisfactory. The policy of endowing the Institution scholarships has been continued by the investment of New Zealand 4 per cent. Inscribed stock of £2,339 from the examinations account to the credit of the scholarship account. The capital investment account also has benefited to the extent of £1,800. Donations of 200 guineas were made respectively towards the new Forestry Laboratory of Oxford University and the new buildings extension of the Royal Agricultural College, Cirencester.

Examinations.—The number of candidates presenting themselves for the intermediate and final examinations in March last was again large, the total being 1,095 (of whom 61.19 passed), compared with 1,266 in 1913 and 1,102 in 1912. The drop in the number of candidates for the intermediate examination shows signs of a return to more normal conditions. It is true that the total of those who sat for the final was increased by forty-nine, but the factors influencing the numbers, which were referred to in detail in previous reports, would necessarily affect the intermediate examination, whether by way of increase or decrease, more quickly than the final.

Scholarships at the Universities.—The competition for the Institution scholarships for 1913 was again disappointing, only one candidate of sufficient merit presenting himself for examination. This was Mr. R. H. Jerman, to whom a scholarship of £80 per annum tenable at Oxford University was awarded. The Council have come to the conclusion that the conditions upon which these scholarships have been held up to the present were perhaps unduly stringent. As there is reason to think that young men with the education these scholars have received might hope to enter the offices of well-established surveyors, either as improvers without premium, or even at a small salary, the requirement that every holder of a scholarship shall on completion of his course enter into articles with a member of the Institution will not in future be enforced.

The Forestry Museum.—The work of reorganising the forestry collection has made considerable progress during the year. The Council has arranged to extend the floor space of the gallery, so that more room will be available for exhibits, and especially those relating to the commercial utilisation of English timber and underwood. A feature will be made of the commercial side of forestry, illustrating the uses to which English timber and underwood are put, and the valuable properties possessed by the different varieties for special purposes. A complete exhibit of the timbers used in building is being installed. This should interest many branches of the profession, not only the building surveyors and architects, but also those concerned in the management of estates and woodlands, as showing comparisons between the timber grown in other countries and that grown from the same species in our woods. In this exhibit the common and botanical names of the trees from which the timber is grown will be given, and also the trade names of the timber. There has always been considerable confusion of these trade terms—influenced often by the port of origin or arrival—and this exhibit of building timbers should help to throw considerable light on the subject.

The Standing Committees.—At the instance of the Quantity Surveyors' Committee a circular was issued to ascertain what members of the Institution practised mainly in that branch of the profession; and it is hoped that the replies to that circular, and the fact that the attention of members has been specially drawn to the existence of that committee, may have the effect of leading quantity surveyors to bring their difficulties and problems to the Institution for solution. Meetings of the Special Diploma Sections in Forestry and Sanitary Science have been held; the latter have done good work in drawing up suggestions for the amendment of the London County Council sanitary by-laws, and have since been engaged in considering in detail the draft model by-laws of the Local Government Board.

The National Insurance Act.—The formation of the Architects' and Surveyors' Approved Society has been fully justified, the membership totalling 1,850. The anticipation that the health of those insured, as a class, would prove above the average has been shown to be correct by the year's working, the sickness benefit paid being only about one-third that calculated by the Government actuaries. This means that funds are accumulating, which will be available later for the provision of additional benefits. The Society is one which members may safely be recommended to bring to the notice of their insurable assistants.

Miscellaneous.—The area covered by the work of the Institution during the year has been wide. In July last the Council joined with the Royal Institute of British Architects in a deputation to the Prime Minister for the purpose of impressing upon him the necessity for immediate concerted action in connection with the provision of arterial roads and town-planning schemes for Greater London. As a result of this deputation, a conference was called by the President of the Local Government Board, at which local authorities, institutions, and other bodies interested were represented; sub-committees have been set up, upon which members of the Institution have been included, and there is reason to hope that a way out of the existing chaos may be evolved.

The Council have for some time recognised the importance of greater scientific study being given to the construction of arterial and other roads. The change in the traffic passing along roads and its ever-increasing weight and speed clearly indicate that road engineers and surveyors of the future will have to be far more fully and scientifically equipped than was necessary in the past. Apart from pupilage in a practising surveyor's office, little or no provision is made for the more advanced training now required, and the Council have therefore thought it desirable to bring this need to the notice of the Universities, who have done so much to advance the scientific side of professional knowledge in other directions.

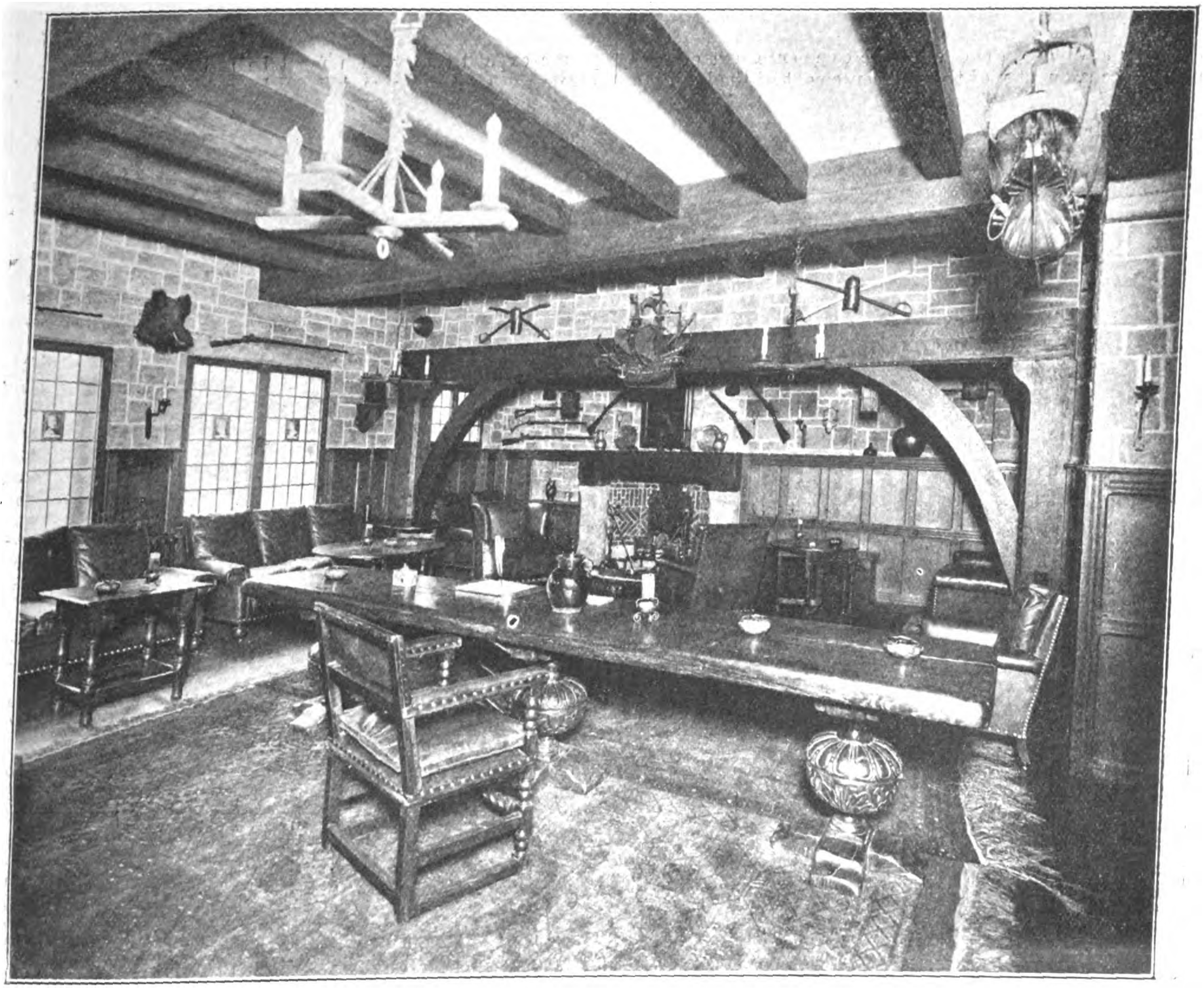
The draft regulations of the London County Council with regard to the erection of reinforced concrete buildings, of which statutory notice must be given to this Institution under Section 23 (4) of the London County Council (General Powers) Act, have received detailed consideration, and the recommendations of the Council thereon have been addressed to the Local Government Board.

The Auctioneers and Estate Agents' Registration Bill is one in which members of the Surveyors' Institution must naturally take a keen interest. Its provisions were carefully considered by the Council, who, however, felt unable to accord it their support, because in their opinion it would give a definite and recognised qualification to certain practitioners which at present they do not possess, without subjecting them to any effective discipline with regard to carrying on their business in a professional manner.

THE CARLYLE CLUB.

There has just been opened at No. 211 Piccadilly, London, a new London club which in not a few respects is unlike any of its contemporaries. The idea of the promoters is to attract country rather than London members. It is for that end that all its organisation is arranged. It is neither a residential nor a dining club, but it offers a baggage-room, valets, and a buffet as temporary substitutes. Truly astonishing are the number of conveniences which members will enjoy without charge—from free "Welsh rarebit" at 11 P.M. or snacks at lunch to free baths and the services of a typist. The Carlyle makes a special feature of studying the convenience of business and professional men up from the provinces, including over forty telephones and a special business room.

The building, which is a few doors from Piccadilly Circus, is not a new one. The work of adaptation has been very skilfully carried out by Messrs. Waring & Gillow, who were, we are told, given carte blanche in the matter. They have boldly chosen to turn their backs on both neo-Grec and Renaissance, and decided on a rendering of Tudor with particular attention to heavy timber ceilings, open fireplaces, heraldic window-panes, oak panelling, metal fittings and furniture. From the servants' old-gold waistcoats to the oil paintings, everything has been done to give an old-world atmosphere. Our illustration shows the "Buccaneer" smoke-room, which may well lead the



THE BUCCANEERS' ROOM, CARLYLE CLUB.

imaginations of cosy members back to the days when their forbears, fresh from prosperous raids in the Spanish Main, would come together in hall or inn, there to exchange tales of adventure and hatch fresh schemes to the undoing of the Dons. On coming back to earth again this day-dreaming club man may assure himself of his modernity by a long-distance telephone call, or by getting linked up through the club electrophone to his favourite comedian on the halls.

NEW LONDON COUNTY HALL.

THE Establishment Committee of the London County Council report as follows:—

1. The Council on April 14, 1908, authorised us to proceed with the preliminary arrangements for the erection of so much of the new County Hall as will cover the Belvedere Road site, excluding the area occupied by Holloway Brothers (London), Ltd., the intention being not to proceed with the portion of the building to be erected on that area until such time as the growth of the Council's staff made it imperative to provide more accommodation. Before that date (April 1908) the freehold of the company's premises had been acquired from the Ecclesiastical Commissioners, and under the resolution No. 12 of July 23, 1907, an agreement had been entered into with the company for the acquisition of their leasehold and trade interests. This agreement provided, *inter alia*, that the Council, after purchasing the premises, should grant the company a lease for twenty-one years, terminable by two years' notice at the Council's option at the end of seven years, and at the option of either party after ten or fourteen years. We reported on November 26, 1912, that the number of the staff at the central offices at that time already exceeded the number which could be accommodated in the portion of the new building on the site, excluding the area occupied by the company, and that it has therefore become necessary for preliminary steps to be taken in order that the erection of the portion of the new building on the area occupied by the company might be proceeded with in due course, and the Council on December 17-18, 1912, decided to give notice of its intention to exercise its option to determine on December 25, 1914, the lease granted by it to the company.

We have now had under consideration the question of the arrangements to be made for proceeding with the construction of the portion—namely, section D—of the new building to be erected on the site of the company's premises. With the view of expediting the erection of this portion of the building we have been in communication with the company on the question of obtaining possession at an earlier date than December 25, 1914, of part of their premises, in order that the construction of the river wall extension may be put in hand forthwith. As the result of negotiations we have provisionally arranged that the company shall give possession on August 1, 1914, of the river frontage portion of their premises, together with access thereto from Belvedere Road, and that the Council shall allow them to continue in occupation of the middle portion and the Belvedere Road frontage portion of their premises until May 1, 1915, and June 24, 1915, respectively. The three portions above referred to of the company's premises have approximate areas of 15,500, 25,750, and 12,100 square feet, and are shown by red, blue, and green colours respectively on the plan (Registered No. 3724) which will be laid on the table. A rebate in rent will be allowed to the company as possession of each portion of their premises is given, and the net financial result of the arrangement will be to reduce by about £370 the amount which the Council would, in the ordinary course, receive from the company for rent in respect of the premises. The Council is also to pay the cost of putting in a main which may be necessary for the purpose of supplying electricity to the company's workshops. The cost of this work will be small. Under the arrangement outlined above, which we are advised is reasonable, it will be possible to commence the construction of the river wall extension five months earlier than was anticipated, and as the construction of the raft foundation cannot be begun until the erection of the wall is far advanced, the date of the commencement of that work, and consequently of the commencement of the building work, will be brought forward.

We propose that there shall be issued forthwith an advertisement inviting tenders for the construction of the river wall extension. We have decided that the form of contract for this work shall provide for its completion within a period of nine months, and that a bonus at the rate of £250 a week shall be given in respect of the completion of the work in less than the contract time, while liquidated damages at the rate of £100 a week will be provided for in respect of non-completion within that time. We are advised that it is inexpedient at present to publish the amount of the estimate in respect of this work, and the Finance Committee have agreed that the necessary estimate shall be submitted to the Council after tenders have been received. It is essential that tenders should be invited at once in order to secure that the work may be begun on August 1, 1914.

The estimates of the cost of the wall extension, the raft foundation, and the substructure and superstructure of this portion of the building, including furniture, the provision of boundary rails, architects' and quantity surveyors' fees and supervision, amount to £320,270. It must be pointed out, however, that these estimates are only approximate, it being impracticable in the absence of bills of quantities to prepare close estimates of the cost of a work of such magnitude. In addition, certain expenditure, which at present it is not possible to estimate, will be necessary in respect of the provision of accommodation for the staff of the tramways department who are at present housed in adjoining premises formerly occupied by the works department in Belvedere Road, and who will be displaced owing to the fact that a portion, approximately a quarter of an acre in area, of the site of these premises will be required, primarily for the purpose of affording proper light to the north frontage of the new County Hall. The area in question will also be used for the formation of a road between Belvedere Road and the new embankment.

As regards the cost of this portion of the site, a sum of approximately £95,000 has already been paid, and further sums amounting to £53,267 are, under the agreement approved on July 23, 1907, payable to Holloway Brothers (London), Ltd., on December 25, 1914. In addition the Council has, under the agreement, to pay a sum to be agreed in respect of the company's machinery and fixed plant. It has now been arranged that this sum, when ascertained, shall be payable when possession is obtained of the whole premises (June 24, 1915). Provision for the expenditure in respect of property was made in the estimate (No. 4470) of £600,000 approved on April 18, 1905, and in the capital estimates (vote No. 8) for 1914-15.

We attach great importance to the work being pressed on with all despatch, and with this object in view we advise the suspension of standing order No. 98, which prescribes that the Council shall not vote on a recommendation or proposal involving expenditure on capital account exceeding £5,000 until seven days after the report containing it shall have been laid before the Council.

RATES AND TAXES FROM A BUSINESS MAN'S POINT OF VIEW.—I.

By H. G. Chancellor, M.P.

One of the questions most vital to the business community is the method by which the revenue of the country is raised. This really affects them more than the amount of that revenue, though that, too, is very important.

That public revenue is necessary goes without saying. In the early stages of a country's development, with a scattered population, the common needs are few and inexpensive. With each family a unit, almost self-contained, producing and consuming its own foodstuffs, clothing, buildings, &c., these needs are practically restricted to two—common defence, *i.e.* security from foreign foes, and justice and order, *i.e.* security from domestic foes.

But with growth of population comes intercommunication and commerce, division of labour and industry, aggregation in hamlets and villages, then in urban communities.

The trail of the settler develops into the bridle path, then the land, then the high road.

The village street develops into the main thoroughfare, and growing commerce demands greater facilities, pressing into its service all the discovered and available resources of steam and electricity.

Every step in development, every increase in population, discloses fresh common needs, involving larger common or public expenditure, which must be met by a larger public revenue. That revenue has to be raised from the whole community.

The form it takes is for the most part taxes for national purposes and rates, *i.e.* local taxes, for local purposes.

Now, the nation or locality with a large expenditure is generally better off than the one with a small expenditure. The town prospers which spends heavily on public improvements and amenities, and thus attracts population for residence or business.

The unenterprising community which jogs along with the old facilities that were good enough for past generations becomes comparatively derelict.

Mr. Chamberlain, who, whatever views are held of him as a politician, must command admiration as a municipal statesman, is said to have won his elections to the Town Council on the cry "Vote for Chamberlain and high rates." No one can doubt that the people of Birmingham are more prosperous than they would have been had the great and costly improvements he initiated never been carried out. High rates, burdensome though they appear, are not necessarily an evil. They may be nothing but a profitable investment, provided they are wisely expended on proper objects.

The life of a community is something quite other than and distinct from the sum of the individual lives of those who form it, though the individual cannot cut himself off from it, and is dependent on it for the completion of his own life.

The farmer or cottager is adequately supplied with water from his own well and light from his own lantern. The town dweller needs a common supply of water and public lighting of his streets. The rural resident can use his house refuse to manure the ground. The sanitary needs of the urban dweller can only be met by a drainage and sewerage system. Otherwise he will be subject to epidemic diseases that will jeopardise his health and decimate the population. The millions spent in the great main drainage system of London is paid for out of rates that to the individual citizen seem oppressive. But he would be far worse off without it.

London has had no plague since 1665. She had many before. Public expenditure, therefore, is absolutely essential to the life of the community. And high public expenditure may be, and often is, more beneficial than low. Indeed, the latter may easily be a wasteful and extravagant form of saving, whilst the former may be an economical and profitable form of investment, resulting in better conditions of life and health and even of material prosperity for every individual living under it.

Without great public spending, both national and local, London would never have become the world's metropolis, and many huge and profitable London businesses would never have come into existence. It is futile, therefore, for the business man to protest against the spending of money by the public authorities. He should confine his criticism to the purposes to which it is applied and the methods by which it is raised.

These methods as they affect business form the subject of this paper.

There are certain principles which should govern every method of raising public revenue.

1. It should be just as between citizens.
2. The charge should be proportioned to services rendered and benefits received.
3. It should as far as possible avoid confiscation, *i.e.* depriving individual citizens of the fruits of their individual industry.
4. It should not hamper, penalise, or discourage enterprise and business, except in forms recognised as injurious to the community.
5. It should not increase the cost of living.
6. It should be difficult to evade and easy to collect.

How far do our present methods of raising revenue conform to these principles?

The national revenue for the financial year ending March 1913 amounted to £188,802,000. Of this amount, £34,049,000 was non-tax revenue, over 29 millions being contributed by the Post Office.

Of the taxes, £71,485,000 was raised from Customs and Excise, and of the balance, £82,672,000, property and income-tax contributed nearly 45 millions, estate duties 25¼ millions, stamps 10 millions, inhabited house duty 2 millions, the old land tax and the new land value duties over 1 million.

The revenue of local authorities, which in the last thirty years has trebled, amounted in England and Wales, apart from loans, to 143 millions, raised as follows: Rates, over 68 millions; Government grants, nearly 22 millions; undertakings, *e.g.* gas, water, trams, &c., nearly 40 millions; and other sources, including fees, fines, licences, tolls, dues, &c., nearly 14 millions.

Now, nearly all these forms of revenue raising violate one or more of the principles laid down. But this discussion is confined to their effect upon business.

To the non-tax and non-rate revenue, that derived from great national institutions like the Post Office, and municipal undertakings like trams and water, with occasional exceptions, every one of them applies. Those exceptions are generally due to the extravagant prices paid for the monopolies taken over, as in the case of the London water companies, whose undertakings could have been replaced for less than half the amount paid for them. The result is that, with interest and sinking fund on about 26 millions of "water" added to the real capital sunk in the undertaking, London's water supply costs rather more than before. Purchased at a fair price it would have cost less. Even with the handicap under which it works, it has paid London to take it over, for now uncertainty of supply and occasional water famines are rendered practically impossible by the centralised management of a public trust, which ought, however, to be an elected body directly responsible to those whom it serves.

But, generally speaking, public supply of services monopolistic in character have contributed enormously to the progress and advantage of business.

Of the Post Office it may be said that modern methods of business would be impossible without it. It is just as between all sections of the community. It charges for the services rendered at exactly the same rate to the millionaire as to the peasant. It confiscates no man's property. It facilitates every legitimate and useful form of enterprise. It has greatly decreased cost of correspondence, and its revenue is collected automatically and cannot be evaded. The same can be said of most revenue-earning public monopolies. Generally speaking, they have resulted in decreased cost and increased facilities to the advantage of the whole business community, except to the limited number who, obtaining control of the supply of public needs, worked the monopoly so as to extract the largest profit at the smallest cost. That is what the railways are doing now, and the cry for nationalising them is rising from business men who distrust and even abhor what is called municipal trading. No one stands to gain more than the business man by the extension of the principle of making all monopolies public, and this is a fruitful method of easing his other burdens, whilst making more fruitful his capacity and effort.

(*To be continued.*)

THE INCORPORATED CHURCH BUILDING SOCIETY.

THE annual general court of the above Society was held yesterday (Thursday) afternoon.

According to the annual report, the past year has been financially a successful one, for the total receipts during 1913 were £9,199 16*s.* 7*d.*, as against £6,880 15*s.* 5*d.* for the previous twelve months. Practically all this increase, however, was due to that necessarily uncertain source—legacies. The list of subscribers includes the names, we are told, of fifty-one architects, which fact is regarded as a professional acceptance of the architectural value of the Society.

The past history of the Society shows that it has been instrumental in aiding in the erection of no less than 2,731 additional new churches, and in assisting in rebuilding, enlarging, or otherwise improving the accommodation in 6,893 other churches or consecrated chapels-of-ease. By these means more than two million additional seats have been secured, far the greater part of which are for the free use of the parishioners according to law. The actual amount of money used in making grants towards the objects named has reached £950,456.

The Committee have pleasure in reporting a still further increase in the number and amount of the funds held on trust by the Society for the repair of churches; the number is now 412, and the amount has reached £115,430 16*s.* Consols, besides £15,673 5*s.* 2*d.* invested in other securities. A few of these funds consist of money raised towards building or enlarging churches.

During last year grants were made towards building twenty-seven new churches, rebuilding four churches, and enlarging or reseating sixty-three churches.

Mr. Frank L. Pearson, F.R.I.B.A., in speaking at yesterday's court, pointed out that an examination of this Society's early records shows that the meeting that day was of unusual interest because it is actually the centenary of the beginning of the movement that resulted in the foundation of this Society a few years later.

It was on May 4, 1814, that Mr. Bowdler addressed his letter to Bishop Howley with the object of drawing public attention to the spiritual destitution of the poorer districts of our great towns, and to rouse the conscience of Churchpeople to the great need for building churches and chapels.

In spite of early discouragements, the movement grew and prospered.

By the help of this Society and kindred organisations large numbers of churches were built. In London especially great efforts were made to overtake the neglect of a previous generation, and during the episcopate of Bishop Blomfield some 200 churches were erected in the diocese.

Unfortunately, evangelical enthusiasm was in advance of architectural knowledge. Gothic architecture was the fashion, and what Gothic! Plaster pillars and mouldings meagre in construction, contemptible in their fittings—the biggest show at the least cost; many of these buildings still remain a warning for future generations.

Happily, better things were in store. The influence of the Oxford movement and of writers like Pugin and Ruskin made itself felt in the region of architecture, and a new generation of architects arose with great artistic gifts and high ideals, whose creations remain one of the chief glories of the nineteenth century.

But the Oxford movement and the Gothic revival are no longer the forces they were. The objects for the attainment of which they strove have been largely realised. We must seek elsewhere the moving impulse of the present century. There is little doubt that both in Church and State it will be in the direction of internal organisation.

At the present moment one of the most obvious signs of this spirit is to be found in the demand for the subdivision of the old dioceses, with their huge areas and populations and their reduction to such proportion as can satisfactorily be overseen by one individual.

There are various other directions, too, in which this characteristic of the time is making itself felt. But admirable though it may be, it is well to remember that in our endeavour to attain the practical we must be careful not to lose sight of the ideal.

Our Society has nothing to do with the building of cathedrals, but, in passing, I venture to express a hope that new dioceses will aim at something more ambitious than parish churches for their cathedrals.

But with regard to the building of new parish churches, which it is a chief aim of this Society to encourage, this work is becoming more and more the care of central authorities and less the result of private enterprise. Now, the central authority aims at economy, and, while it is easy to sympathise with the very natural desire to make money go as far as possible by limiting the amount to be spent on each building, it will surely be a fatal mistake to lose sight of the high ideals which are the legacy of the last generation. For "where there is no vision the people perish." Even in Mediæval days, large towns were split up into numerous parishes with small, inexpensive churches, as may be seen to this day. But alongside of these, or, rather, in their centre, was the cathedral or the great monastic or municipal church, its stately form dominating the city and leading men's minds out of and above the common rut of daily life.

I would urge, then, that a diocese, in drawing up its scheme for church building, should provide that at convenient centres (one, at least, in every rural deanery) there shall be one church on the grand scale, which, in addition to forming the ecclesiastical centre of the district, shall be not only to those that build but to succeeding generations a witness and an inspiration.

When I speak of churches on a grand scale, I must not be understood to mean costly buildings with much carving and a wealth of detail. Though when funds admit such enrichments may be desirable, it is to dignified and lofty proportion, ample floor area, and general breadth of design that we must look for the church that will "bring men to their knees."

I well remember some years ago going into Westminster Cathedral before its completion while some scaffolding was still standing. There were no fittings, no decorative features anywhere; the absence of detail was remarkable. All was bare brick. But one could not fail to be made immediately sensible of its great solemnity and fitness for high uses.

It has been my privilege in recent years to be associated professionally in certain alterations and additions to the cathedral of Perth.

The church was built by the late Mr. Butterfield somewhat early in the career of that remarkable artist, and at a time when the Church in Scotland would have experienced even greater difficulty in raising money for church building than it does at the present time.

Here there was clearly little money to spend, so detail was sacrificed to lofty and dignified proportions, which gave a distinction to the interior and which could not fail to impress the worshipper.

I am not, of course, asking that every parish shall contemplate the erection of a church on the cathedral scale, but only use these examples to emphasise the all-important fact that it is dignity, harmony, and sincerity that go to make a fine building.

These qualities are independent of style and period, as they are of richness and ornament. They may be found in the great cathedral and equally in the simple village church.

ART IN LONDON.

The Work of Sir Philip Burne-Jones, Bart., at the Dowdeswell Galleries.

His father's son is not, as we think, in the present case a chip of the old block—not artistically, bien entendu. But then the late Burne-Jones was something—or rather someone—of special note in the kingdom of Art; and it is the relationship of these two that enforces a comparison, where otherwise none would be set up. Not that the son has not good work and even clever work on view, but there is not much of it. For if we say that "The Garden, Wilsford Manor," "An Unpainted Masterpiece," "Bare ruined choirs where late the sweet birds sang," "Lady Tree," and the portraits of Mr. Richard Ward, Lady Diana Manners, and Sir Edward Carson are worthy work, we have mentioned the best, though we might have added three or four more of the portraits to the list. We consider that portraiture suffers in effect when it is on an intermediate scale; life-size (or nearly so) and miniature are alone really satisfactory presentments, except where the subject forms but a portion of the interest conveyed in the picture. This, indeed, might be Sir Philip's excuse or explanation; for his portrait-studies are of the nature of inventory pictures, where each object is as fully detailed as though an auctioneer had been at work preparing a schedule. Lady Diana's portrait, however, where she is shown decked out as the Prado Infanta, is not underscaled, and is a very clever piece of work throughout. And trying to forget scale, we must commend the virile work in the portraits of Sir Edward Carson, Sir Walter Gilbey, and Mr. Ward; and the lights and shadows in the portrait-picture of Lord Rayleigh are also praiseworthy.

Sir Philip's Venetian studies do not satisfy us; he should learn (if he does not already know) the value of half-closing the eyes in depicting what lies before our vision; his industry in individualising tiles and copper sheeting on roofs is not recompensed by any artistic advantage, far otherwise. But this faculty of individualising is one which is very pronounced throughout the exhibition.

We can fully commend "An Unpainted Masterpiece" for its excellent colour, grouping, and chiaroscuro; it is fully suggestive of a tale to be told, though we think it does not tell the tale purporting to be conveyed; this would be better effected were we shown the front view of the bare canvas.

We will not enlarge upon the "Valley of dry bones"; suffice it to express our wonder at the emerald sky and our satisfaction in knowing at last just how many bones Ezekiel was confronted with in the famous valley.

At the Dudley Galleries.

When half the exhibits in a total of seventy-three are passed under review before we are forced to make a mental note that the first really unsatisfactory sketch confronts us, it is evident that the show is one worthy of close attention. This is the case in regard to works by the late Mr. Thomas R. Macquoid, R.I., whose studies in black and white, sepia, and water-colours we saw adorning the walls of the Dudley Galleries in Piccadilly.

The range of country traversed by the artist extends through the countries of Western Europe, and our selection of the best exhibits proves a fairly impartial distribution amongst these countries, though we regret to have to exclude England from the category; moreover, Mr. Macquoid's "Horsenden, Bucks," and "Part of Long Gallery, Hatfield," are two of the few that we appreciated least.

He possessed a charming style of landscaping, and showed a knowledgeable selection of "subject." One of the best we regarded as "Cologne" (71), better even than the very effective "Vitré Castle" (20). "Davos Dörfli" is notable for the well-considered values; and, slight as is the subject, "Street Lamp, Manderscheid," arrests the attention forcefully in its black-and-white delicacy, showing pendant foliage enwrapping the iron bracket of "la lanterne." A study of woodcarving in the Rathhaus, Luneburg, is most realistic, and rendered with a mass and faithfulness of detail truly charming. "La ferme des moines, Normandy," though painstaking, lacks in vigour, and two Caudebec sketches proved to be indifferent in execution. "At Freiburg" is a dainty little study with the foreground fountain filling up the picture, and "Principal Street, Berne," is a companion to this, with the "distance" well indicated. "Las Huelgas, Spain," is correct and virile architectural sketching, and the costume and fruit studies are deserving of great praise. Indeed, the latter is applicable to the exhibition as a whole, and it is one which we should have been sorry to miss.

The Society of Graver-Painters in Colour.

This Society is, perhaps, not yet as well known as its members would desire; but, seeing that the present exhibition at No. 25 Bedford Street, Strand, is only the fifth of those annual functions, time is on the side of the Society. Of the thirty-one Members and Associates only nineteen are here represented, and a third of the work is contributed by two only of this number, so that the distribution is very unequal. Mr. Woolliscroft Rhead, in his ten exhibits, shows very varied subjects, mostly metal-process work. "Youth and Age" and "Orchids" are sufficiently striking, giving good colour effects in a quiet key. "The Ten Virgins," by-the-by, seem to be but eight, but perhaps Mr. Rhead has his reasons; "The Mermaid" is more decorative than picturesque, and "Portia" is very unrealistic. Mr. E. A. Verpilleux also has ten exhibits of very different character and quality to the foregoing; "St. Paul's (interior)" shows a disintegrated technique and a quality of colour which in combination fail to suggest to us the cathedral which we have seen under so many aspects on so many occasions. The same quality of disintegration is apparent also in other of his drawings, but not in "The Tower Bridge," which is treated with breadth and atmosphere and a technique suitable for wood-process work. "Edinburgh Castle" is particularly harsh and crude, but we can commend "The Cross-roads" and "Maison Mystère," the lighted windows in the latter being very deftly put in.

We think that Mr. Frederick Marriott is the best representative for the Society; "Archway at Moret," "Moonrise," and two Falaise sketches are delightful. Mr. Sydney Lee has effective work in "The Church Tower," and Miss Deane's studies would make good tile-patterns. But the notice would be incomplete without including with the highest praise Mr. Hans Franck's "White Peacock," undoubtedly the finest of his series of bird-studies.

The Modern Dutch School.

About a twelvemonth ago we visited the French Gallery in Pall Mall to inspect a selection of works by modern Dutch artists, and we welcome a further exhibition of this nature at the same locale. There are two pictures of outstanding merit; we refer to Jacob Maris' "Near Utrecht" and Bernard de Hoog's "The Cottage Madonna." The former is an important canvas depicting a stretch of coast with its row of stunted trees and its windmills under a light sky, which the dull waters reflect; without claim to "subject" or composition, this is a notably fine picture. And Bernard de Hoog, portraying a young mother suckling her infant, has produced a work full of verve and touching in its unstudied effects. "Sunday Morning" and "The Gossips," two more of the eight exhibits by this artist, are also noteworthy. J. H. van Mastenbroek, in portraying the Maas at Rotterdam, shows breadth and good massing. Of his six exhibits, the only other we wish to specify is the "View at Rotterdam," which makes a pretty little piece of colour. The same quality of prettiness of colour is noticeable in the work of M. Klinkenberg, but it is accompanied by an effect of insipidity throughout. J. Scherrewitz is commendable in "Awaiting the Fishing Boats," a very masterly production indeed; but in "Changing Pastures, Autumn," there is a regrettable lack of focus and a generally anæmic appearance; and "Dutch Pasturage," though showing good texture, is unsatisfactory as regards the modelling of the kine. M. Wilm. Steelink has a couple of delightful pieces in "Near Scheyenzeel, Holland," and "On the Hills, Nunspeet," superior to his other works on exhibition. It is altogether a collection fully as interesting as its predecessor of a twelvemonth past, saving in the one respect that Josef Israels is naturally unrepresented.

Ichiryusai Hiroshige's Colour-engravings.

Not long since there was an exhibition of Japanese colour-prints at the Victoria and Albert Museum, wherein the work of Ando Tokitaro (professionally known as Hiroshigé) formed an important section. The Fine Art Society, in securing such a large number of this famous Japanese artist's works to form a one-man show, lays the public under a debt of gratitude. The prints which most appeal to ourselves are those dealing with bird life; herein we find Japanese art at its best—herein and also in purely decorative design and colouring. Hiroshigé's flower studies are likewise worthy of close attention.

But as a rule the portrayal of the human figure and the effects of perspective are pronouncedly poor: neither Celestial nor denizen of the Land of the Rising Sun looks so sloppy, so boneless, as customarily represented in Far-Eastern pictures. In No. 7, one of "The Hundred Views of Yedo," the geisha girl shows morphism and a swing, such as would call for no notice in Western art; the colouring in this print is pleasingly harmonious. The bird study, No. 14, is curious, as only the bird's beak is in evidence. In No. 25, "Twenty-eight Views of the Moon," it is worth while noticing the action given to the leaves torn from the branches by the force of the wind. As a rule, Hiroshigé was unsuccessful in portraying rain. No. 28, Omi Hakkei Series, the rain looks like a heavily draped curtain, and a similar effect is observable in No. 33, Toto Meisho Series. It is satisfactory to record exceptional success in this respect in No. 38, Yedo Kinko Hakkei Series. So, too, with the snow, which is apt to be too much like a sack in appearance, though the snow scene in Toto Meisho Series No. 85 is most effective. We must refer to No. 32, "Uchiwa-ye," as a rare instance of Japanese attention to the properties of perspective.

THE ARCHITECTURE OF THE GARDEN CITY.*

The greatness of the architecture of the past was due mainly to the lavish use of materials and the autocratic power of the higher classes over labour. The cities of the Roman and Greek Empire were built upon the disregard for the pariah, and frequently with the distinct purpose of adding dignity to brute power. In this connection, Colonel Plunket's admission that Pompeii and smaller cities are now revealing to us some of the most intricate details of their buildings and their relation to the domestic and social life of the people, shows conclusively that the workers, whether slaves or freedmen, were not provided for in the building schemes of these cities, but that the controlling classes were living in the comfort and luxury consistent with their period.

This method of city building has continued to exist in a decreasingly accentuated form to the present day. With the overthrow of autocratic government and the development of the spirit of democracy, changes have taken place in the methods of government and in the methods of building cities. The "Garden City" movement is the newest expression of democracy in community building, and points to a new era in architecture, both from the point of view of economic cost and from that of human utility.

In olden times, the providing of accommodations for the wealthy but limited members of the aristocracy and its favourites was a comparatively simple problem. Modern standards of life and the demand for that comfort which formerly constituted the erstwhile privileges of the few—now considered not only the privilege but the right of all—place the problem of providing housing accommodations upon an entirely new plane. This change in the social and economic conditions of the civilised world would appear to impose upon the architectural profession the obligation to create a new architecture expressive of this modern spirit, practicable under our modern systems of government, consistent with modern ideas of community building, meeting the requirements of health, comfort, and moral safety, and in harmony with the economic factors of cost under which the work must be done.

Considered from this point of view, modern architecture must face: first, the essentially human requirements of plan and design; secondly, economic limitations in the use of material and labour; and, thirdly, simplicity of line in keeping with the spirit of democracy. The two-storey row of one-family houses that one sees so much of in Philadelphia, Baltimore, and Washington is the expression of this spirit of democracy—an expression which is still in process of formation. In these houses we see not only what had been done to meet modern requirements by a levelling downward of all individuality and æsthetic aspiration, but, above all, one notes the absence of the master hand that is necessary for the moulding of inanimate and simple materials into a work of art. The utilitarian boldness and the complete absence of individuality through which democracy can evolve to a higher degree of efficiency make the sensitive mind of the artist shudder at democracy, as expressed in the homes of the people.

I believe, however, that we are going through a period of adjustment; that art is coming closer to the life of all the people; and that the spirit of Millet, as expressed in "The Man with the Hoe," will soar to greater heights, not by dignified simplicity of human life and human wants, but by simplifying the dignity of human values, and making possible the free play of personality.

In the building of homes this task is difficult, because of its multiplicity of aspects, and the dependency upon social and, especially, economic conditions.

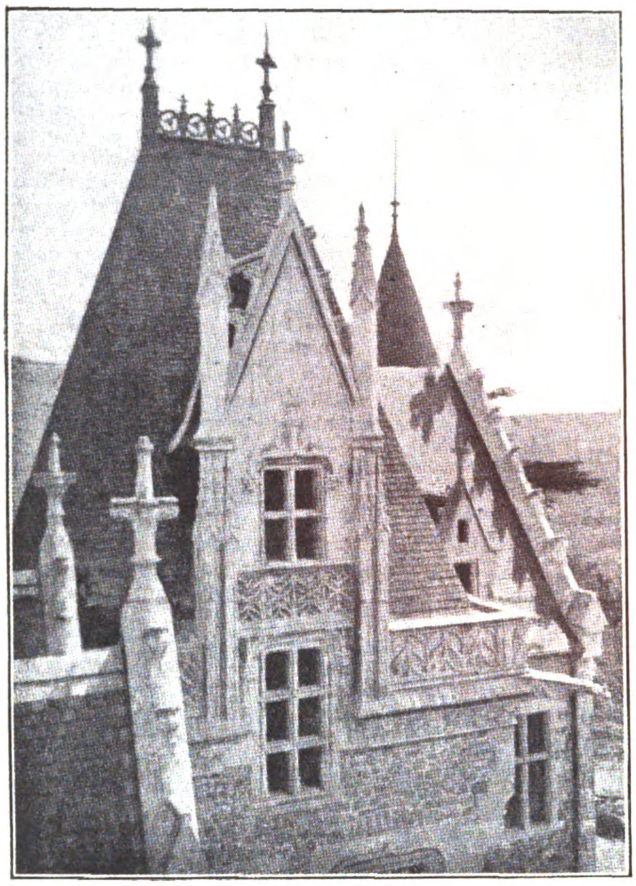
In order to meet the great need for a modern architecture permeated with the spirit of democracy and in keeping with the standard of life and aspiration of the people, architecture must become more socialised. Design and size should be subject to the analysis derived from a knowledge of conditions as they are, and a careful study of minimum standards, as they are possible under the modern economic systems, should be the foundation of all home building. If the prevailing needs of the modern wage-earner's family can be met most adequately by a three-, four-, or five-room home, it is imperative that the design be so adapted as to give that ample elasticity and variety to the various types as will make them amenable to adjustment of grade, character of occupancy, materials, and other factors; and bring the best structures within the reach of the man for whom the home is intended. A design which is intended for one type of occupant, to find its best use in another type, is an architectural as well as a social failure, and a large share of our housing problem is caused by maladjustment of purpose in home-building. A lack of interest on the part of architects, due largely to economic reasons and to wholesale speculative building, has operated to prevent architects from turning their attention to the problem of simple, inexpensive houses, and they are hardly a factor at present to be reckoned with in the building of ordinary homes.

That this has proven detrimental to the architectural progress of this age, and that it must be counted as a distinct social loss from the point of view of the homes of the bulk of our people, is generally conceded. The financial loss to the profession itself, due to the lack of understanding of social requirements and economic fitness, can hardly be overestimated.

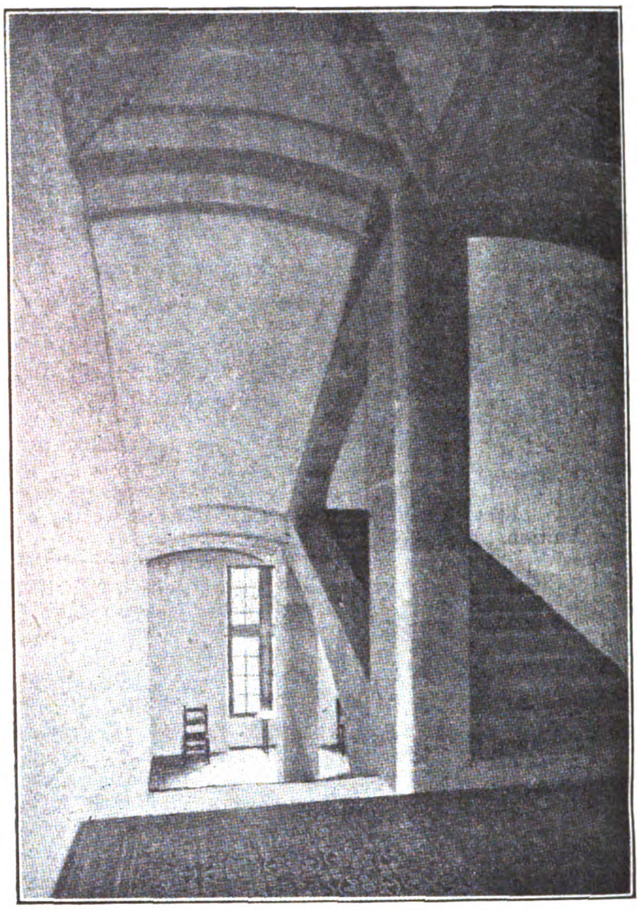
The garden-city movement in England, Germany, France, and in its cruder forms in this country, strives to co-ordinate economic limitations, simplicity of requirements, and beauty of line. In how far this movement has succeeded in setting the pace cannot be accurately estimated at this time. It is true, however, that the garden-city idea, as an ideal of democratic community-building, has grown into an imposing movement, which finds adherents in both the capitalistic and the labour classes. It typifies the ideal of an efficient democracy, and only needs the adjustment of economic legislation and the application of common-sense principles to the factors of cost, such as land, materials, labour, and taxation, for its further development. In this respect the garden-city idea has endeavoured to meet the limitations of cost, either by the investment of philanthropic money, which made a fair return to the investor unnecessary, or by the more practical method of co-operation and co-partnership in building, which makes possible purchase of land and materials under the most favourable terms, and reduces the non-creative investment on the part of the ultimate owner to a minimum.

It is not my purpose to go into details of the co-operative

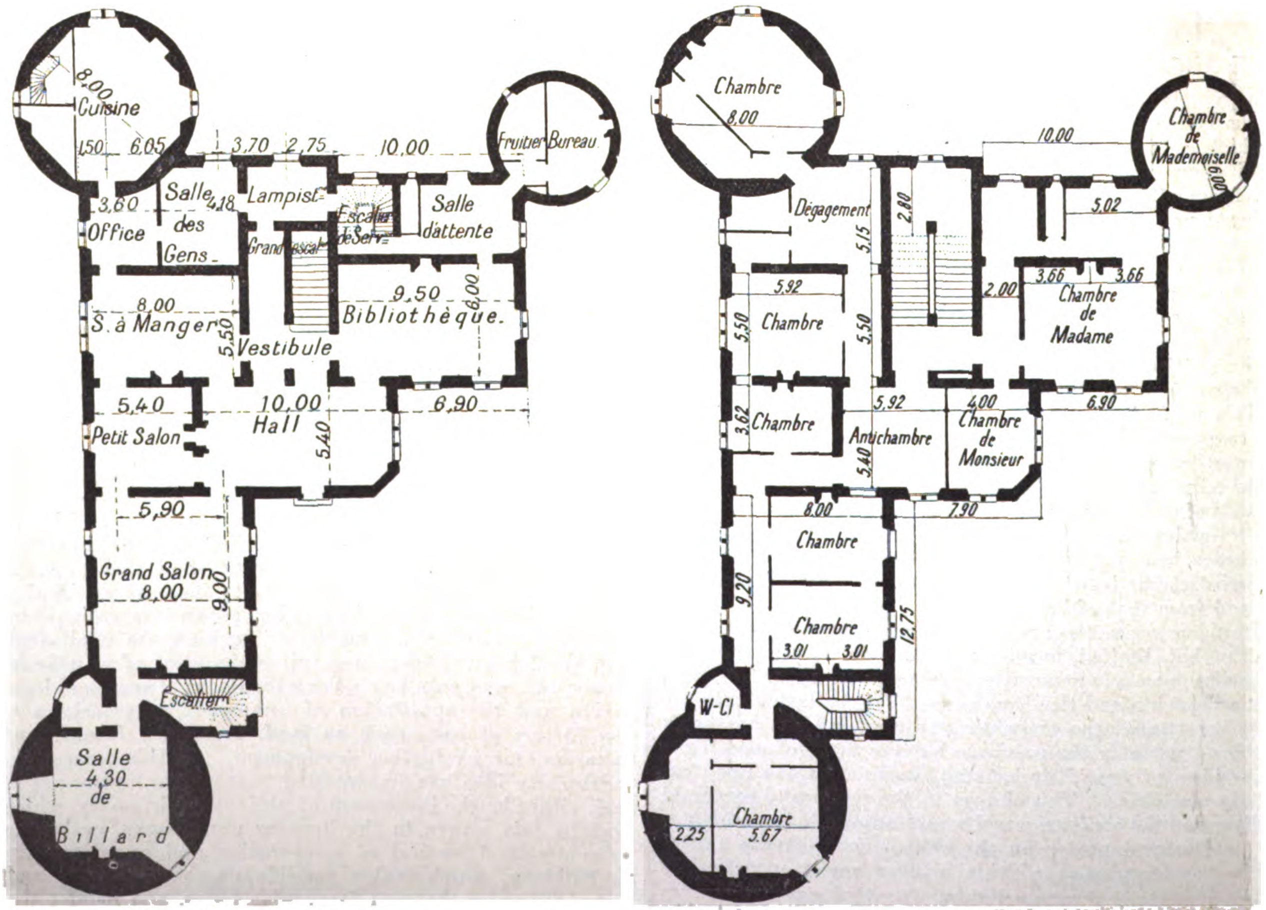
*** Abstract of an address delivered before the School of Architecture of the University of Pennsylvania, Philadelphia, Pa., by Dr. Aronovici. (From the Journal of the *American Institute of Architects*.)**



CHATEAU DU PIN.—DETAIL.



CHATEAU DU PIN.—A STAIRCASE.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FIRST FLOOR.

[From *La Construction Moderne*.

CHATEAU DU PIN (CORRÈZE).—M. Henri L. C. Geay, Architect

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◆ The Font ◆ Drawn on spot. Sept. 1st 13
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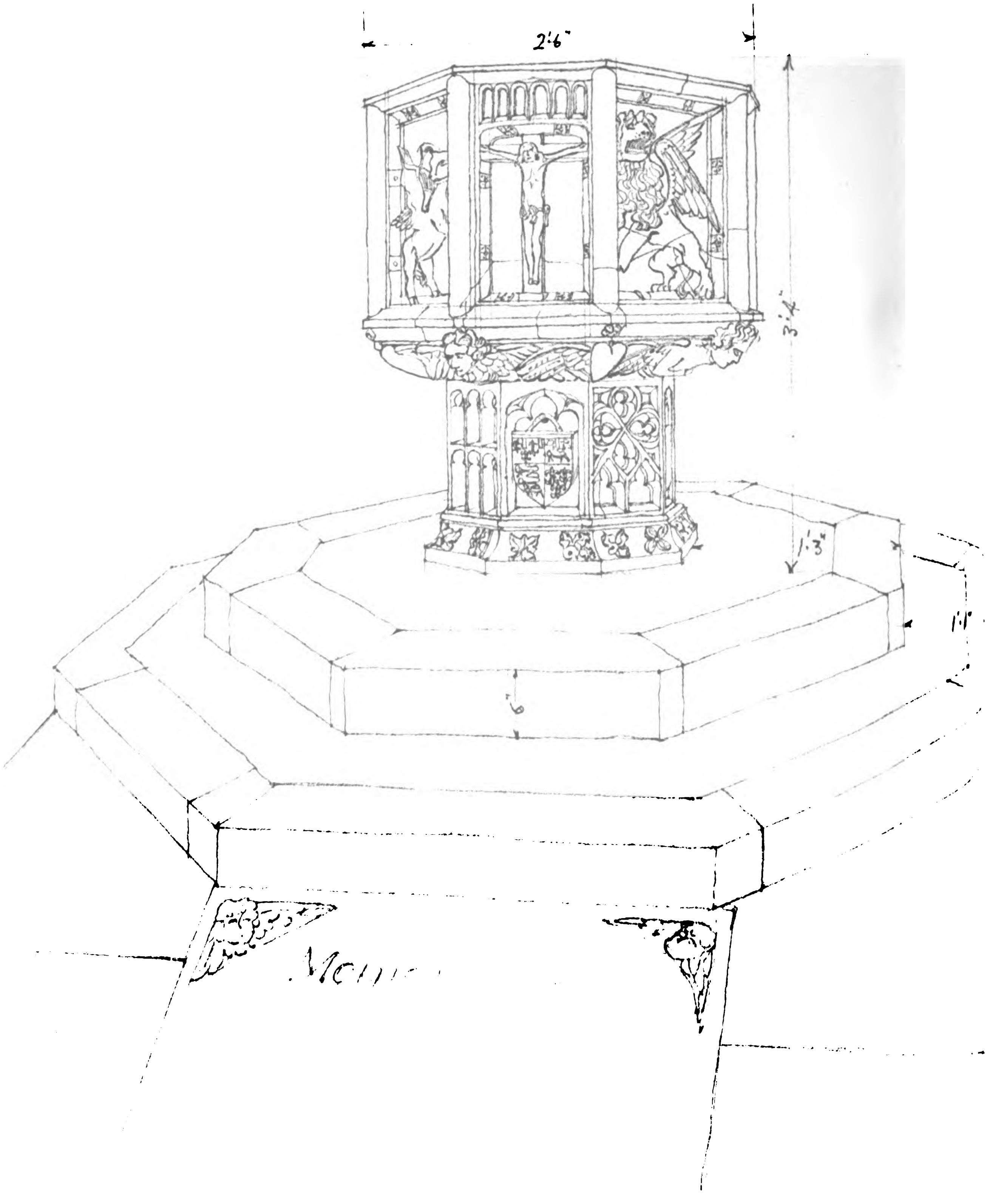
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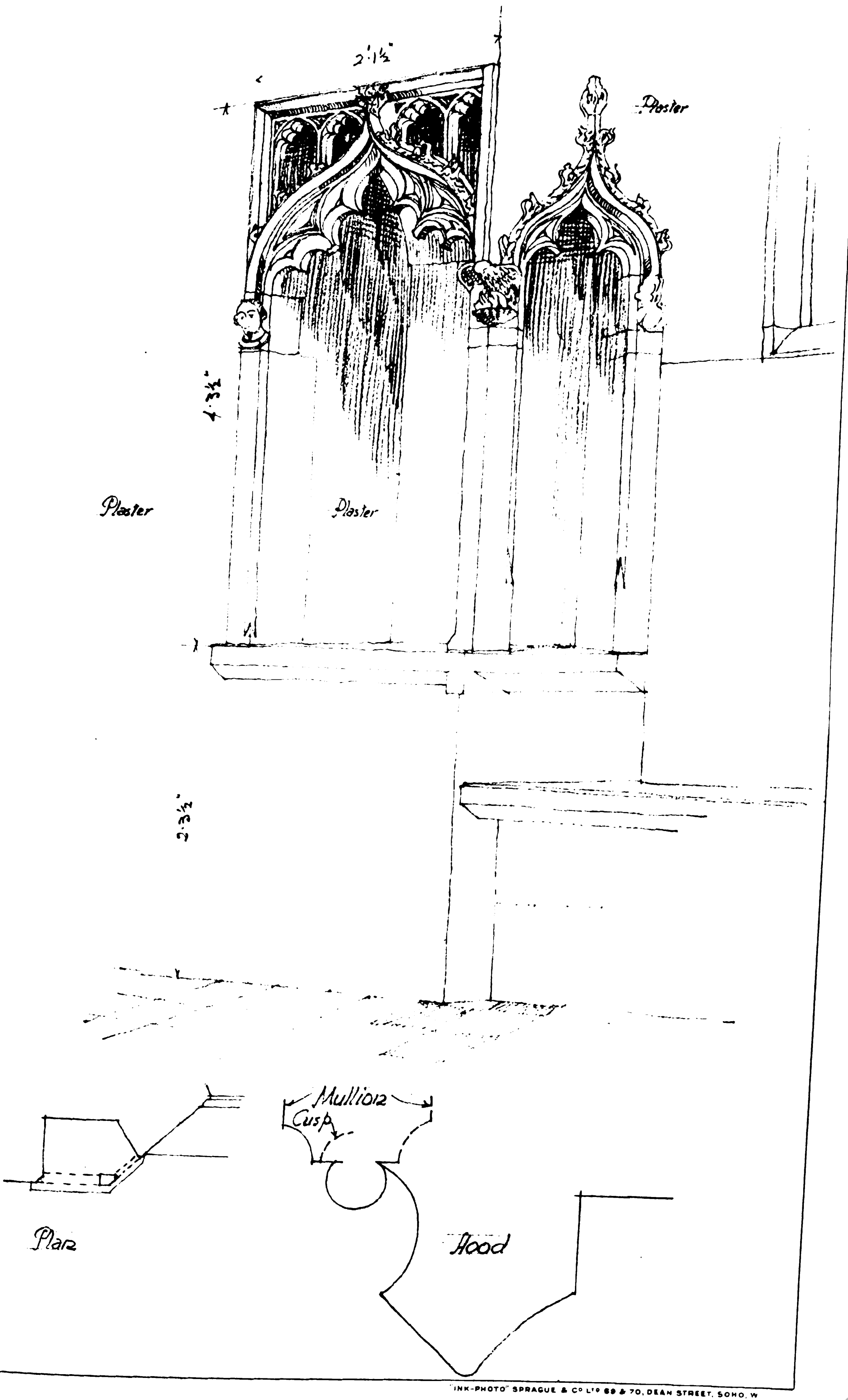
◆ The Piscina ◆ Drawn on spot ◆ A.St.J.H. Sept. 1st 1913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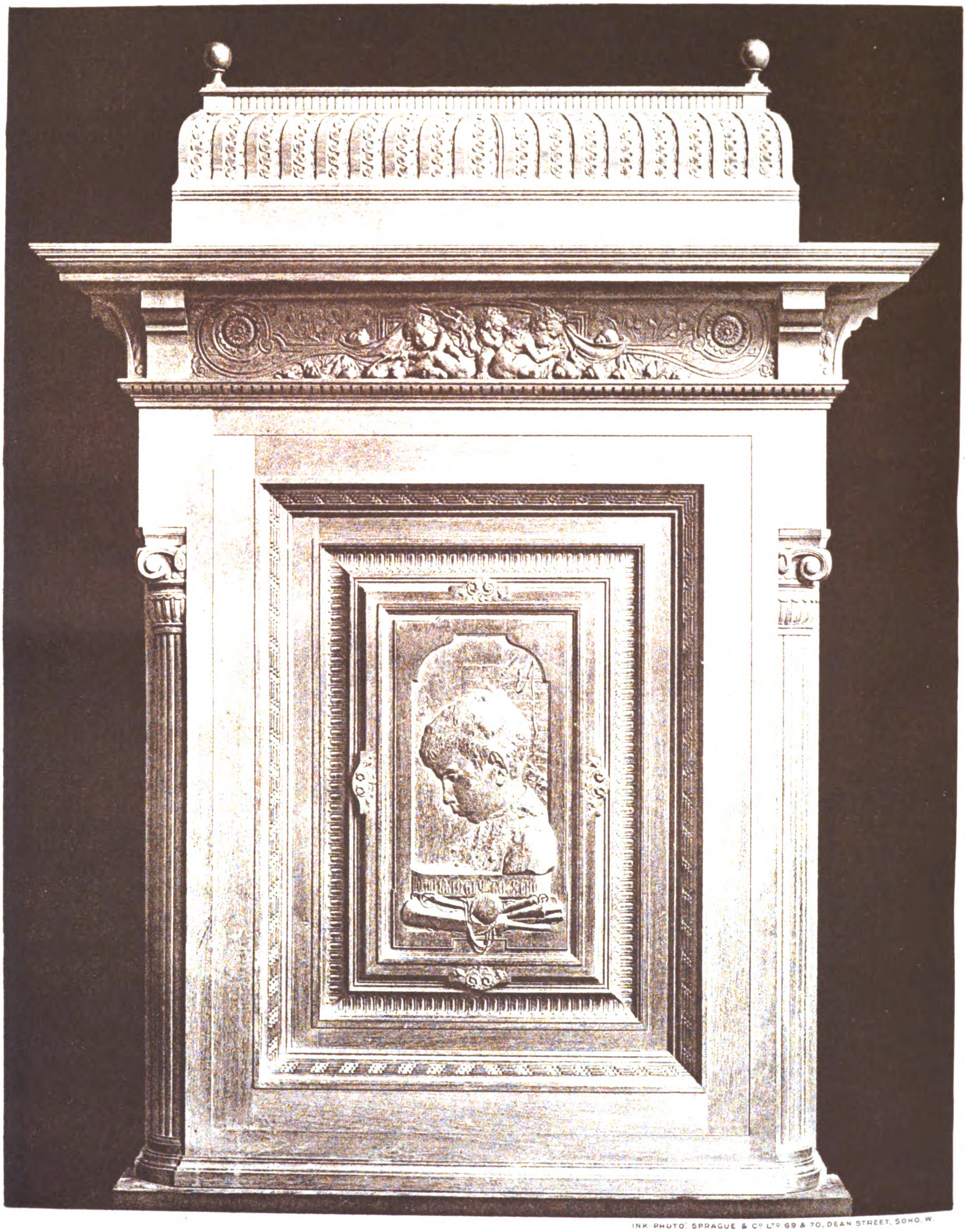

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UPPER FRONT OF A CABINET IN MAHOGANY.

By Mr. MARK ROGERS, R.B.S

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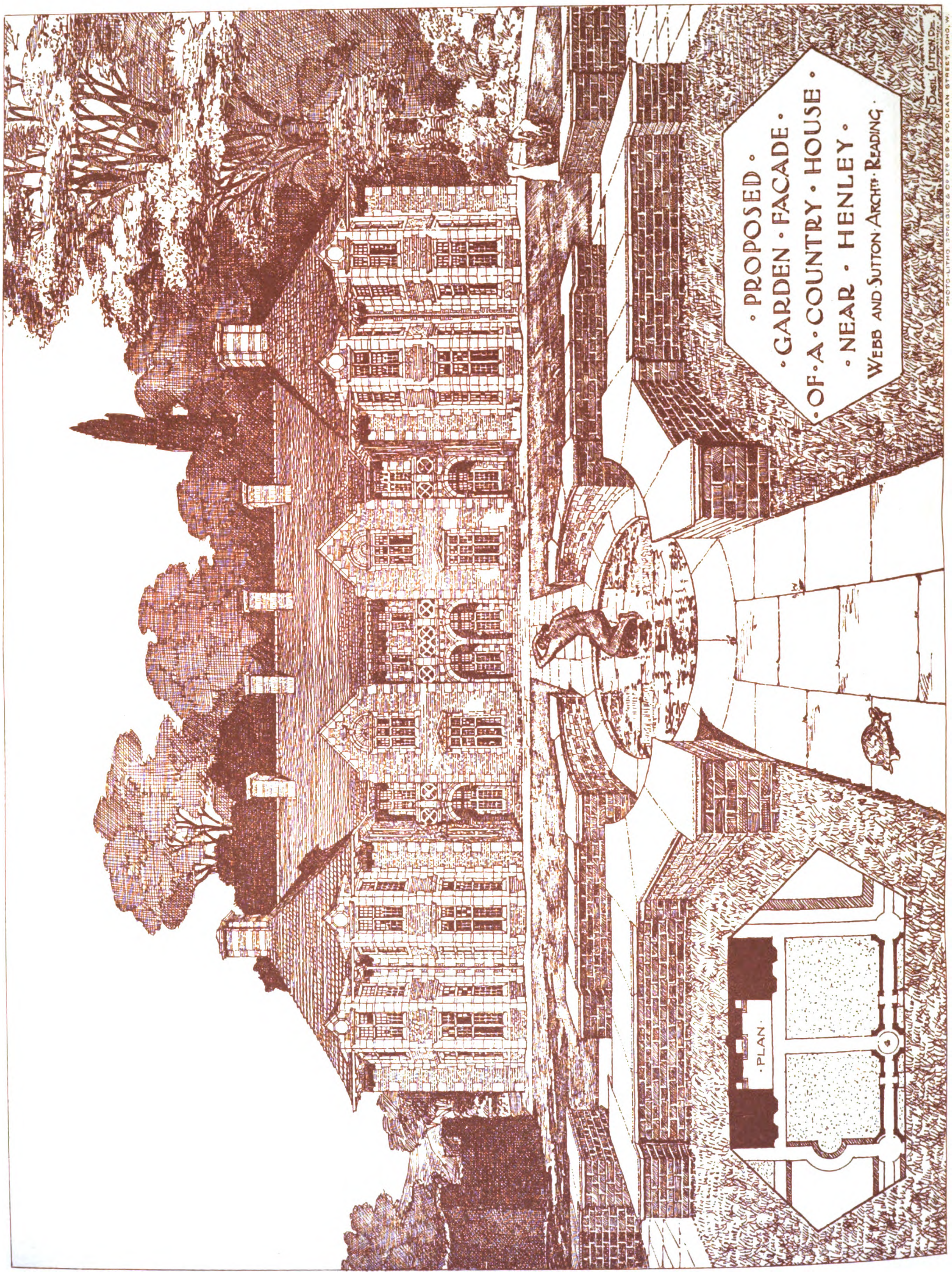
PROPOSED
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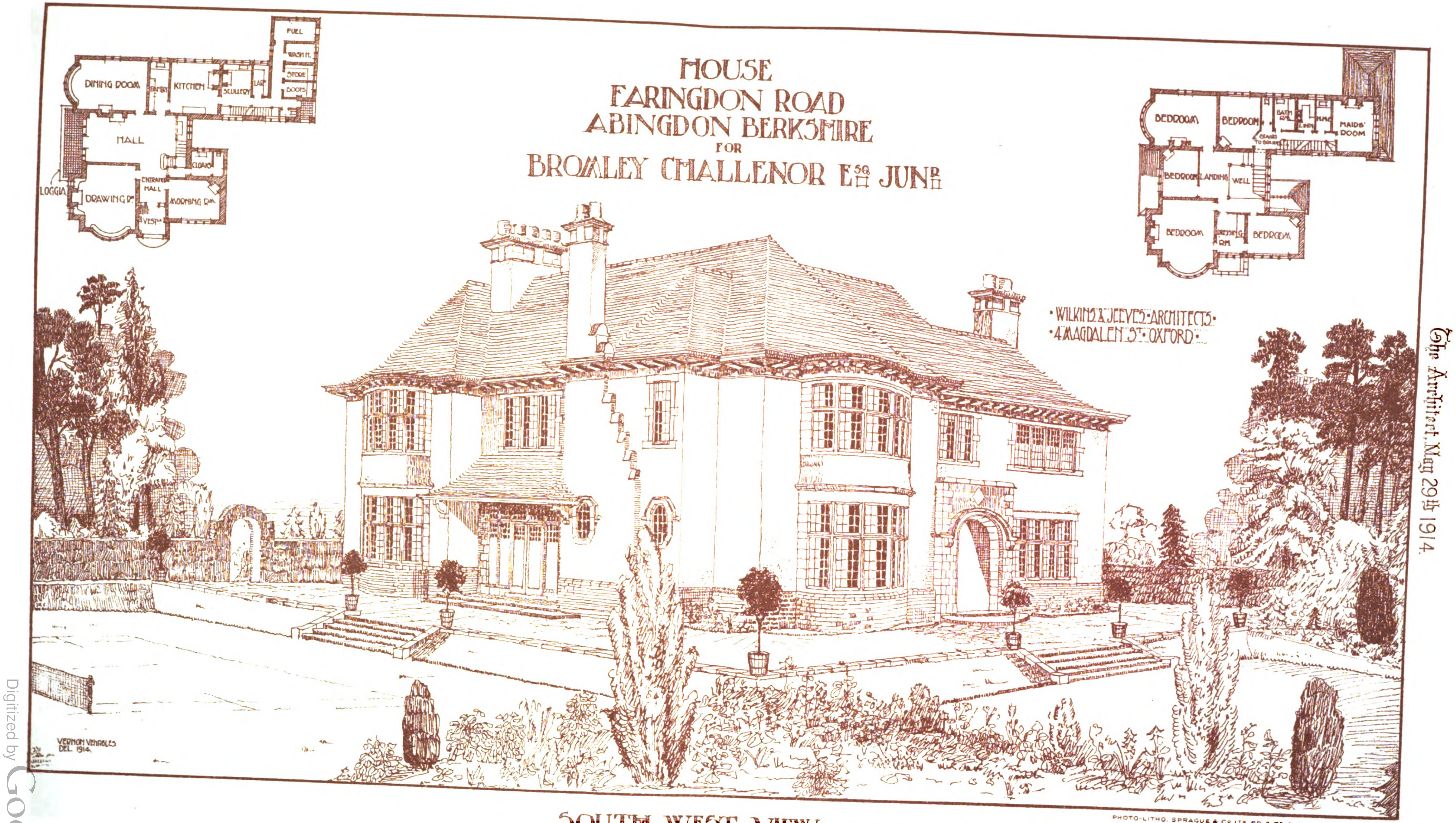
HOUSE FARINGDON ROAD ABINGDON BERKSHIRE FOR BROMLEY CHALLENOR Esq. JUNr.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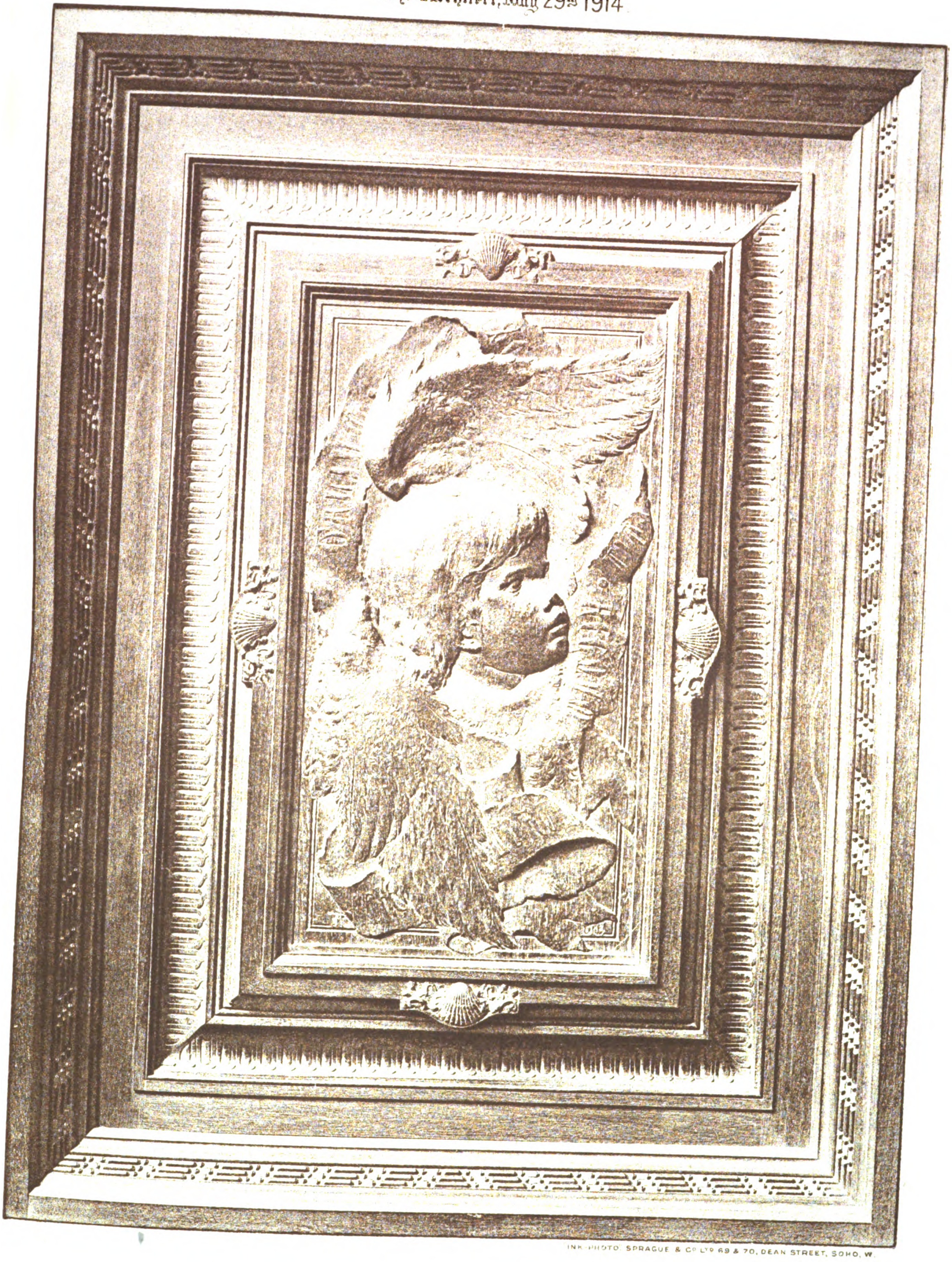

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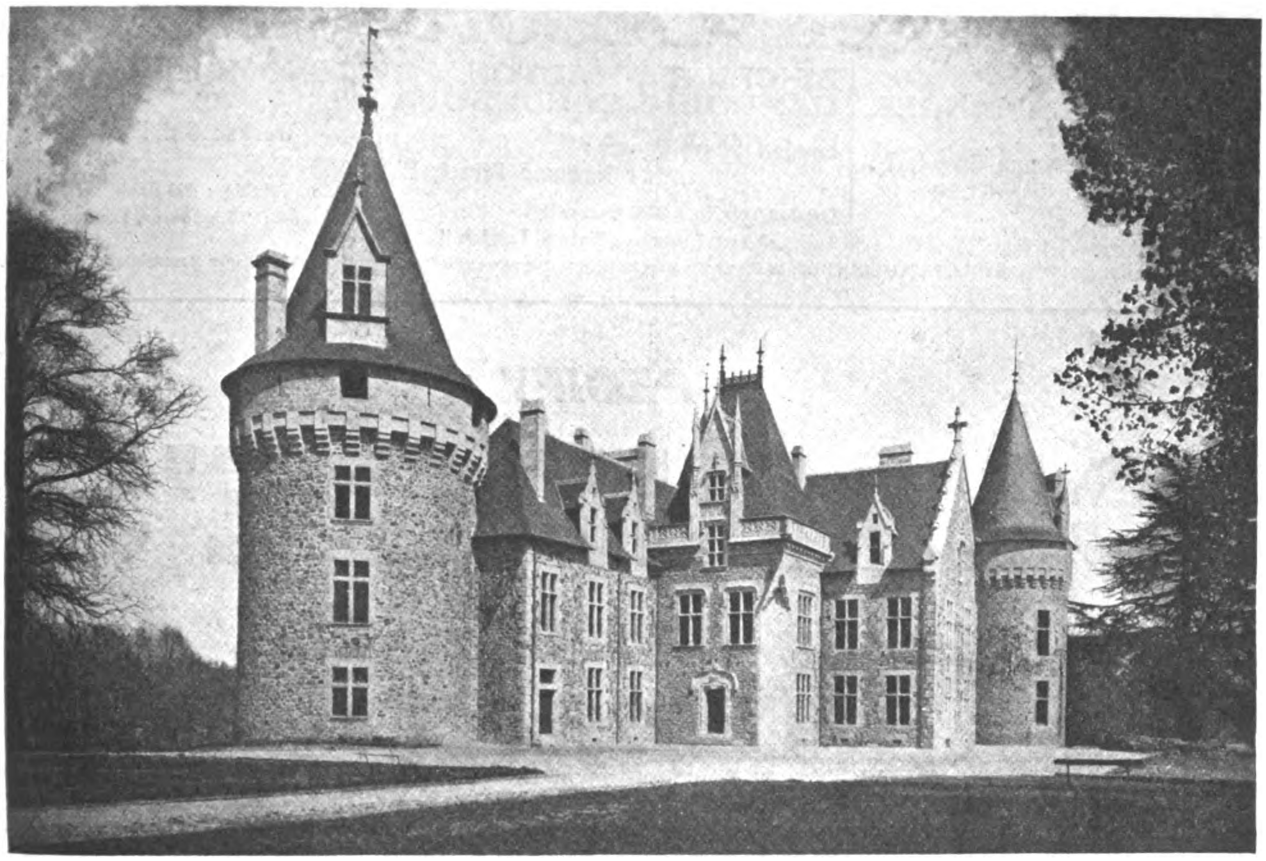
Centre Panel for the Door of a Mahogany Cabinet,

By Mr. MARK ROGERS, R.B.S.

MODERN EUROPEAN ARCHITECTURE.

FRANCE.



[From *La Construction Moderne*.

CHATEAU DU PIN (CORRÈZE).—M. Henri L. C. Geay, Architect.

or co-partnership methods of the garden city, nor can I at this time go into the details of cost as a determining factor in architecture. All that can be done is to consider the details of some of the English and German garden cities, and in a general way point out the tendencies that are most apparent and their relationship to the modern ideals of home- and community-building and the influence of scholastic architecture.

As one goes through the model villages and garden cities of Port Sunlight, Letchworth, Liverpool Garden Suburbs, Hellerau, Essen, and the many other model or pseudo-model communities of the Continent, two important facts impress themselves upon the mind: first, that these communities have unity due to their architecture being social rather than individual; and, second, that, in striving to create attractive conditions, a leisure-class architectural design has generally been applied to wage-earning class homes.

From the point of view of the first fact, it must be admitted that the Garden City Model Village or Garden Suburb offer great opportunity for architectural originality, and for the application of architectural principles to whole communities. The control of the community elements, such as street-design, vegetation, and standard heights of buildings, offers the architect the opportunity to make every aspect of his art count to best advantage, both in the individual structures and in the ensemble which uniformly controlled grouping of buildings and comparative freedom in land use render possible.

With this advantage of control of units goes, however, a need for adjustment to community standards, and a respect for the spirit of the people, as well as their social and economic advantages and limitations, which should find an adequate adjustment in the design of individual structures, as well as in the whole community scheme.

This brings us to the second fact, namely: The type of architecture applied to the buildings. Some of the structures of Port Sunlight are imitative of the types of homes occupied by the nobility or the leisure class of England. Many and various are the types of Classic architecture reproduced upon buildings in which the humble wage-earners make their homes. Where simplicity of line and directness of purpose might have given expression to certain types of buildings consistent within their use and in harmony with the taste and personality of the occupant, we find ancient art imitated and necessarily stilted by reason of limitations of funds and misconceptions of purpose.

The newer villages and cities built with money raised by the people occupying these houses, where cost is more or less consistent with the economic status of the occupant, are pointing the way toward the democratic architecture which emanates from the spirit, the needs, and the standards of the people, and gives them an economic self-reliance that the more elaborate types of buildings fail to render. The garden cities are in themselves socially an insignificant undertaking. Their great value lies in the lesson which they are teaching and will continue to teach the world, in establishing high standards consistent with our economic system, and practicable under normal social and governmental conditions.

The luxuries of the paternalistic garden cities teach us nothing, and have a tendency to distort standards, pauperise occupants, and establish a benevolent feudalism, wholly out of keeping with our democratic ideals and practical social principles of the day.

The value of the service rendered by the Garden City Movement is therefore to be found in its demonstration of the fact that, under proper restriction, adequate provisions for the control of land use, and the practical application of social science to the essentials of home-building, higher standards are made possible under normal conditions. In American terms, the conditions of a successful garden city, and the application of its principles to the whole or part of communities, may be established by the simple answer to the question, "Does it pay?"

The garden city movement must be translated into terms of return on investment, if it is to become world-wide and remain faithful to its spirit of practical democracy.

The architecture best suited for garden cities and villages still remains to be created, and the modern schools of architecture have this important task before them.

It would seem that no greater fundamental task lay before architects than that of bending all their skill, ingenuity, and genius to the problem of creating inspiring homes for the toilers of the world.

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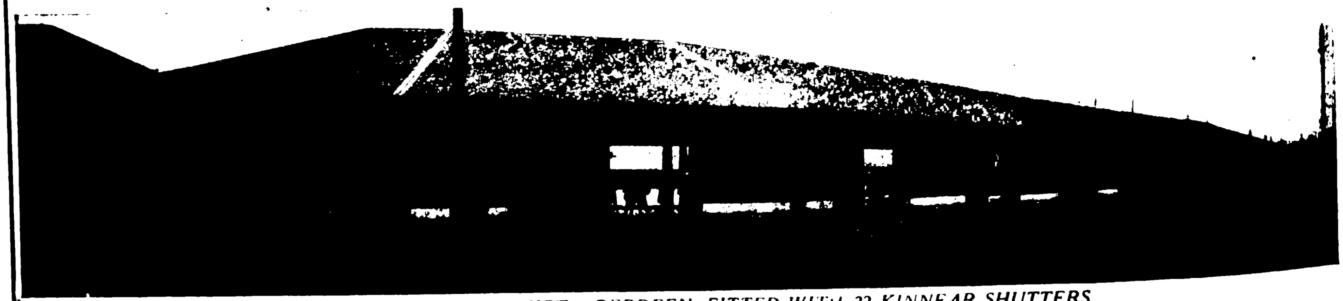

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A LIST OF WORKS PROJECTED OR COMMENCED.

(N.B.—Local Authorities, architects, and others are invited to submit full particulars for insertion in this weekly list. Where districts are not entered against names of architects and builders the address is as a rule local.)

ENGLAND.

BUCKINGHAMSHIRE.

Aylesbury.—House, Manor Road, for Mr. Gibbs.

Twenty houses, Fleet and Havelock Streets, for Mr. W. Evett.

High Wycombe.—Workhouse: infirmary alterations. Mr. T. Thurlow, architect, 25 High Street.

CORNWALL.

Beacon.—House, Condurrow Road, for Mr. Johns.

Treswithian.—House, for Mr. H. R. Rowe.

Troon.—Two houses: additions, for Mr. Trebilcock.

CUMBERLAND.

Warwick Bridge.—Hydropathic Hotel. Mr. C. D. Collinson (of Bradford), architect.

DERBYSHIRE.

Findern.—Public Elementary Council School for about eighty places.

Tideswell.—Council School (£3,000).

DEVON.

Exeter.—Buller Hall, St. Thomas. Mr. Harbottle Reed, F.R.I.B.A., architect, 12 Castle Street.

DURHAM.

Bearpark.—House, for Bearpark Coal and Coke Company, Ltd.

Carville.—"King's Arms" Inn: additions, for Messrs. J. W. Cameron & Co., Ltd.

Coxhoe.—Two houses, for Steetly Lime Company.

Marsden.—County Council School.

New Seaham.—Twenty-five houses, for Mr. R. Davison.

Shotton Colliery.—Picture Theatre, for Mr. R. Crow.

Stanley.—One hundred and fifty-six Council houses, Oxhill.

Sunderland.—Training College: additions. Mr. G. T. Brown, F.R.I.B.A., architect, 51 Fawcett Street.

Ushaw Moor.—Two houses and shops, for Mr. J. Lowery.

ESSEX.

Ilford.—W M. Church, Cranbrook Park (£7,000).

Pattiswick.—Four cottages, Blackwater, for Braintree R.D.C.

Purleigh.—Public Elementary School for 164 places. Mr. G. T. Forrest, County architect, 73 Duke Street, Chelmsford.

GLOUCESTERSHIRE.

Cheltenham.—Holy Apostles' C.E. School, Charlton Kings: alterations and enlargement. Mr. R. S. Phillips, architect, Education Committee Offices, Shire Hall.

Thornbury.—Two villas. Mr. J. Giles, architect, 14 Priory Road, Knowle.

HAMPSHIRE.

Bournemouth.—W.M. Sunday Schools, Holdenhurst Road.

HERTFORDSHIRE.

Tring.—R.C. Church, Langdon Street: presbytery.

Two houses, Beaconsfield Road, for Mr. E. Wright.

LANCASHIRE.

Blackpool.—Synagogue. Mr. R. B. Matter, architect, 34 Birley Street.

Bolton.—St. Paul's Church, Astley Bridge: Parochial Hall, Newnham Street (£5,200). Messrs. M. Robinson (A.R.I.B.A.), Son & Wheeler, architects, 24 Nelson Square.

Congregational Church, St. George's Road: Sunday School. Messrs. Ormrod, Pomeroy & Foy, R.I.B.A., architects, 21 Acresfield. Messrs. E. & S. Street, contractors, Kearsley, Farnworth.

Lancaster.—Cinematograph Theatre, Market Street, for the Lancaster Palladium, Ltd.

Liverpool.—Picturedrome, Westminster Road, for Mr. W. Gordon.

Picturedrome, Bolton and Lime Streets, for Mr. R. C. de Zouche.

Picturedrome, Hurst Street, for Mr. J. Walker.

Picture Theatre, Derby Lane, Stoneycroft, for Mr. B. M. Hanmer.

Whittle-le-Woods.—Bank and house, for the Manchester and Liverpool District Banking Company, Ltd.

LEICESTERSHIRE.

Ashby-de-la-Zouch.—Proposed Isolation Hospital for twenty-five beds (£14,000).

Barwell.—Cinema, for Mr. H. S. Cooper.

Rothley.—Wesleyan Chapel.

LINCOLNSHIRE.

Lincoln.—Bracebridge County Asylum: additions. Mr. F. Parker, architect, 7 Pump Square, Boston.

Council School, Mount Street.

Woodhall Spa.—Gentlewomen's Home, Horncastle Road (£3,000). Messrs. Scorer & Gamble, AA.R.I.B.A., architects, Bank Street Chambers, Lincoln.

MIDDLESEX.

Twickenham.—Baptist Church, The Green. Messrs. Ingall, Bridgwater & Porter, architects, 3 Temple Row West, Birmingham.

MONMOUTHSHIRE.

Bedwas.—Council Offices, Fire Station, &c. (£2,500).

Ebbw Vale.—Offices for the Ebbw Vale Company. Mr. F. J. Veall, architect, Arcade Chambers, High Street, Cardiff.

Newport.—Two houses, Wattsville. Mr. G. Stemp, architect, 32 Stow Hill.

Tredegar.—Twelve cottages, Graham's Field, Sirhowy. Mr. A. F. Webb, architect, Tredegar Chambers, Blackwood.

NORFOLK.

Swaffham.—Six Council houses.

NORTHAMPTONSHIRE.

New Duston.—Public elementary school for about seventy-five places.

Oundle.—Cottages, Rock Road, for Mr. Dyson.

Wellingborough.—Hat and Cap Factory, Victoria Grounds, for the Ideal Clothiers, Ltd.

NORTHUMBERLAND.

Cramlington.—Council stables and other buildings (£500).

Newcastle-on-Tyne. — Furniture premises, Prudhoe Street: extensions, for Messrs. H. Chapman & Co. Mr. J. J. Hill, architect, Goldsmiths' Hall, Pilgrim Street.

Mortuary, &c. Property surveyor. Messrs. S. Fenwick & Co., contractors, Northumberland Road.

North Shields.—Y.M.C.A. premises, Bedford Street. Mr. A. B. Plummer, F.R.I.B.A., architect, 13 Grey Street. Mr. H. D. Burton, contractor, 60 King Street.

SHROPSHIRE.

Ruyton-Eleven-Towns.—Meeting Hall, for the Manchester Unity of Oddfellows. Mr. W. Richards, architect, 9 Cross Hill, Shrewsbury.

SOMERSET.

Bath.—Secondary School.

Bishop Sutton.—Wesleyan Church.

Chilcompton.—Parish Hall, for C.E. Men's Society.

STAFFORDSHIRE.

Brierley Hill.—Infants' Council School for 350 places.

Chasetown.—Wesleyan Sunday School: extension (£750). Mr. H. Horton, architect.

Wolverhampton.—The "Talbot" Hotel: alterations. Mr. W. Edwards, architect, 25 Darlington Street.

Institution for the mentally deficient for 200 patients.

Theatre Royal, Bilston Street: rebuilding.

SURREY.

Croydon.—Infants' Council School (for 100 places), Beddington.

Woking.—St. John's Church: improvement (£3,000).

SUSSEX.

Patcham.—Elementary School (for 700 places), for the Brighton Education Committee (£19,250).

WARWICKSHIRE.

Bedworth.—House, Astley Lane, for Mr. Nutting.

Two houses, Earl Street, for Mr. B. Smith.

Two houses, Leicester Street, for Mr. E. Hall.

Birmingham.—Picture Theatre, corner of Winson Green Road and Wellington Street, for Mr. W. Devey.

Picture Theatre, Station Road, Short Heath, Erdington, for Mr. W. H. Brothers.

Coventry.—Public Baths, Priory Street: extension (£15,400).

The Frederick Bird Council School, Swan Lane: additional 450 places.

Foleshill.—Wesleyan Church and Schools, Foleshill Road, for Lockhurst Lane Chapel.

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Warwickshire—(*continued*).

Grendon.—Liberal Club-house. Mr. H. Jones (of Dordon), contractor.

Hall Green.—House, for Mr. W. J. Coplin.

Nuneaton.—Girls' High School: additions. Mr. H. Quick, architect, 35 Hertford Street, Coventry.

Polesworth.—House, Potter's Lane, for Mr. Barrs.

Walsgrave-on-Sowe.—Two houses, for Mr. Roy.

Yorkshire.

Barnsley.—Council School, Agnes Road: additions and alterations (£4,600).

Brighouse.—Wesleyan School for St. Paul's (£3,900).

Goole.—Twenty-three houses, Hilda Street. Messrs. Webster & Markham, builders, Marshfield Road.
Transformer Station, Mariners' Street, for the Electric Power Company.

Grassington.—Sanatorium (£30,270), for Bradford Corporation.

Harrogate.—St. Paul's Church: tower (£2,000).
Council School, Skipton Road (£3,000).

Pickering Marshes.—Elementary School (£650).

Rawmarsh.—Wesleyan Schools, High Street. Mr. W. J. Hale, F.R.I.B.A., architect, 13 St. James' Row, Sheffield.

Selby.—Museum Hall: alterations.
Thirty-nine workmen's dwellings, Fairfax Avenue (£9,400).

WALES.

Connah's Quay.—P.M. Church, High Street.

Gorseinon.—Electric Cinema, for the Gorseinon Cinema, Ltd.

Mumbles.—Two villas, for Mr. Pullen.

Porthcawl.—The "Royal Oak" Inn: alterations. Mr. D. R. Thomas, architect, The Cross, Morriston.

Ynysybwl.—The "Old Bull" Inn: alterations. Mr. E. G. Heaton (of Aberdare), architect.

SCOTLAND.

Banchory.—Hotel: enlargement, for Mr. Lewis.

Buckhaven.—Picture House. Messrs. Haxton & Walker, architects, 3 High Street, Leven.

Paisley.—South U.F. Church: halls, Stow Street, for the Trustees.
Starch Works, Abercorn Street: additions for Messrs. W. Polson & Co.

IRELAND.

Belfast.—Art Gallery and Museum, Botanic Gardens. Mr. J. G. Wynne (of Edinburgh), architect (£75.000).

Limerick.—Asylum: additions and alterations (£13,500).

BRITISH PATENT SPECIFICATIONS.

Selected by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

The first date given is the date of application; the second, at the end, the date of the advertisement of the acceptance of the completed specification.

No. 13,026. June 5, 1913.—Construction of concrete floors, roofs, and the like. J. W. Moseley, of Pennine Edge, Romiley, Cheshire.—This invention relates to a floor, roof, or the like constructed of concrete or concrete and terracotta and the like, and is intended to dispense with unnecessary thickness of section in floors and secure greater safety without temporary supports when erecting same. Strong rigid steel tee bars are laid from wall to wall, wall to beam, or other support, and resting thereon, spaced as the load requires. Between the steel tee bars are moulded hollow blocks made of concrete and the like. The sides of the blocks are designed to engage with the section of the tee bars, encasing them on all sides. An important feature of the design of the block is the advantage it gives of being able to lay the blocks in position after the steel bars are fixed, as well as when fixing the blocks and bars together. The ends and sides of the blocks are buttered when fixing with cement mortar, and when set the whole forms a rigid sub-floor centreing, on which is laid concrete or concrete and asphalte and the like. The surfaces of the blocks are keyed to bond with the concrete, and they remain in and form a portion of the floor when finished. The blocks are designed to fit close up to the steel bars, to give greater rigidity to the steel and prevent undue flexibility under tension owing to their close grip on the vertical web of the tee bar through its full depth. It dispenses with the principle of beam formation, which necessitates a thick floor, and is designed to secure greater strength with lightness of section when completed. Fig. 1 is an end section showing the design of the concrete blocks and the position of the steel tee bars in relation to same. Fig. 2 is an end elevation and section showing the blocks and tee bars assembled, and the concrete floor thereon. Fig. 3 shows a side elevation of the floor, with one end resting on the wall. In fig. 1 *a* indicates the terracotta or concrete block, and *b* the steel tee bars, and illustrates the character of the sections of the block sides and how they engage with the tee bars; *e* indicates the hollow openings in the blocks. In fig. 2 the blocks are shown resting on the tee bars and fixed in position, sealed with the cement mortar buttering, marked *d*, which binds the blocks and tee bars together; *c* indicates the concrete floor. In fig. 3 a side view of the floor is shown; the blocks are marked *a*, the cement mortar end joints are indicated by *g*, and the wall on which one end rests by *f*. May 6, 1914.

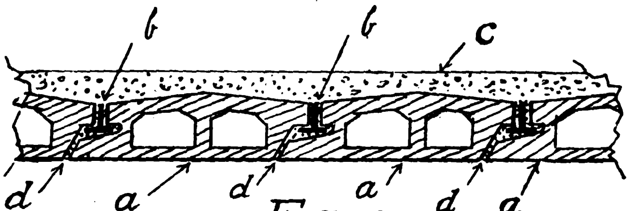

FIG. 2.

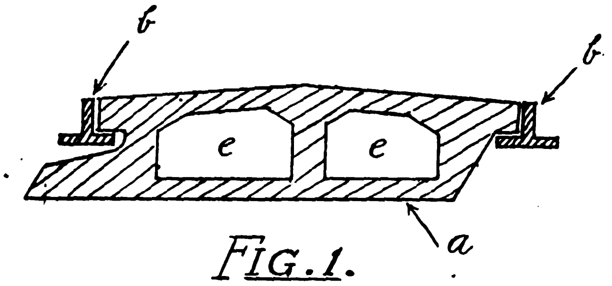

FIG. 1.

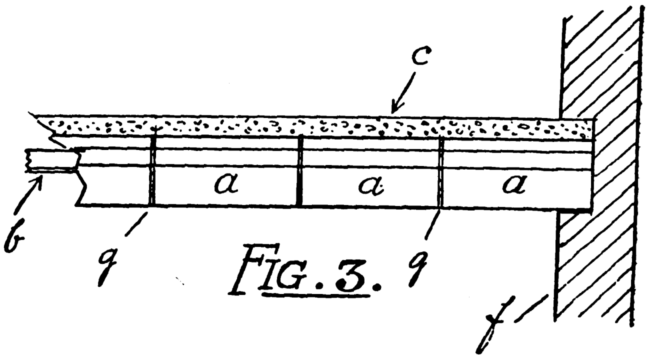

FIG. 3.

PATENT SPECIFICATIONS PUBLISHED. MAY 21, 1914.

Selected by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

No. 7,458. March 29, 1913.—J. M. Rutter, Farnham Road, Guildford, Surrey. Boiler for domestic and such like purposes.

10,198. April 30, 1913.—Ernst Wiart, 48 rue des Moulineaux, Suresnes (Seine), France. Drying of wood and other substances.

10,493. May 5, 1913.—H. A. H. Moore, 26 Fairlawn Grove, Chiswick Park, W. Process for waterproofing and colouring bricks, tiles, earthenware, and the like.

10,496. May 5, 1913.—George Hodges, Holly Galvanising Works, Pearson Street, Wolverhampton. Combined dust bin and cinder sifter.

13,026. June 5, 1913.—J. W. Moseley, Pennine Edge, Romiley, Cheshire. Construction of concrete floors, roofs, and the like.

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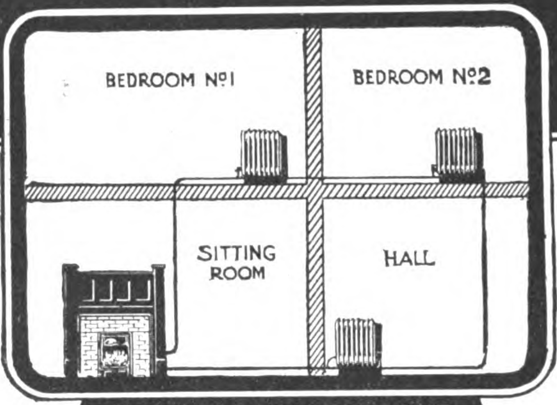
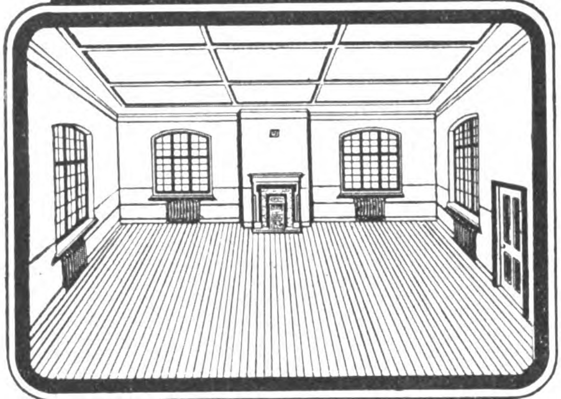


WARMING TWO BEDROOMS AND THE HALL FROM THE SITTING-ROOM FIRE.



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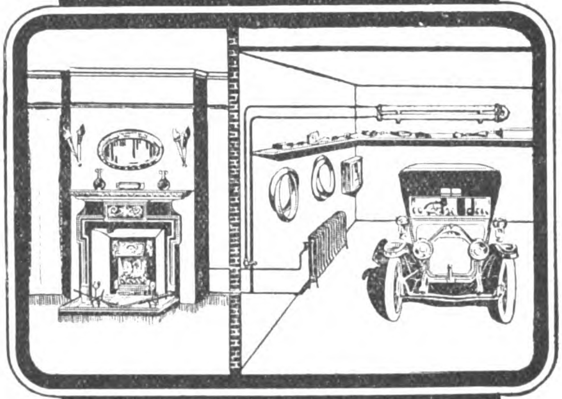

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11,025. May 9, 1913.—J. A. A. Nystrom, 24 Norrtullsgatan, Stockholm. Hollow building blocks.

13,784. June 14, 1913.—G. E. P. Gabriel, 4 and 5 A. B. Row, Birmingham. Runners for hanging doors, gates, and the like.

13,956. June 17, 1913.—Samuel Acton, Arpley Road, Warrington, Lancs. Domestic hot-water supply system and apparatus therefor.

15,438. July 4, 1913.—George Anderson & Co. (1905), Ltd., and A. G. Grice, all of Carnoustie, Forfar. Band saws for cutting stone and the like.

19,830. Sept. 2, 1913.—John Shanks, Tubal Works, Barrhead, Renfrewshire. Supply tanks or cisterns for flushing water closets.

21,400. Sept. 23, 1913.—G. G. Brodie & A. B. Coleman, both of Eagle Foundry, Catherine Street, Aston, Birmingham. Ovens of kitchen or cooking ranges and other ovens.

21,547. Sept. 24, 1913.—Dated under International Convention, Oct. 8, 1912. F. M. Leavitt, Smithtown, Suffolk, N.Y., U.S.A. Purification of water, sewage, and other liquids.

22,483. Oct. 6, 1913.—Dated under International Convention July 16, 1913. P. F. A. Mauroy, 63 rue Clovis, Rheims, Marne, France. Puttyless glazing.

22,795. Oct. 9, 1913.—Chas. Tomkinson and J. T. Williams, 21 Dansie Street, Liverpool. Supporting temporary platforms or centering to carry concrete floors.

23,840. Oct. 21, 1913.—Dated under International Convention Oct. 21, 1912. Karl Schonlau, Richen, near Basle, Switzerland. Manufacture of wall or ceiling coverings.

27,698. Dec. 2, 1913.—A. C. Aglioubz, Onward Buildings, 207 Deansgate, Manchester, and G. H. Hawkins, 3 Bedford Street, Reddish, Manchester. Composition for application to iron for the purpose of acting as a preservative.

1,141. Jan. 15, 1914.—H. F. A. Heuschkel, Hillerod, Denmark. Portable column for decorative purposes.

1,155. Jan. 15, 1914.—Dated under International Convention Jan. 20, 1913. Alfred Maschke, 87 Rue St. Bernard, Brussels. Roof coverings.

12,233. May 18, 1910.—E. M. Davidson, 34 West Thirty-third Street, Manhattan, N.Y., U.S.A. Compounds for and processes of extinguishing fires.

1,576. Jan. 20, 1913.—Dated under International Convention March 6, 1912. Jean Cuggia, Fils, 2 rue de la Paix, Nice, architect. Hot water and central heat supply plants worked by the kitchen range.

15,866. July 9, 1913.—E. W. Barry, 5 Bridge Street, Swansea. Combined parallel ruler and angle measurer.

26,296. Nov. 17, 1913.—The American Rolling Mill Co., Middletown, Butler, Ohio, U.S.A. Sheet metal culvert.

Any of the above specifications may be obtained from J. D. Roots & Co.

Correspondence

[The Editor will not be responsible for the opinions expressed by Correspondents.]

The Late Alderman Thompson and Housing Reform.

SIR,—All housing reformers are mourning the loss of Alderman Thompson, whose tragically sudden death has come as a great shock to his many friends and co-workers. Only last week he attended a meeting of the Executive Committee of the National Land and Home League at the House of Commons, and in a forcible and eloquent speech moved the following resolution:—

"That this League earnestly requests the Government to consider the possibility of including in their proposals for land and housing reform the giving of a grant in aid of those housing schemes carried out by local authorities to meet the needs of certain classes, men and women, who cannot under any probable scheme of increased wages pay an economic rent, especially in rural districts and in connection with the rehousing of those dispossessed by closing orders and clearance schemes; and the League suggests that efforts should be made to give effect to such proposed grant in connection with the consideration of the Unionist Housing Bill, which has three times passed its second reading in the House of Commons, and might be modified in such a way as to secure common agreement."

A couple of hours before the news reached me of Alderman Thompson's death I received a long letter from him asking me to help him to get together a committee of members of Parliament, who, though belonging to different political parties, would work together in order to forward the housing policy embodied in the above resolution. Alderman Thompson asked me to send copies of the resolution to the editors of the principal daily papers and the weekly Press, and this I now do, hoping that you may be able to find space in your columns for it.

It behoves those of us who had the privilege of being associated with Alderman Thompson to see that the work to which he devoted his life is carried on with unfaltering determination.—Yours faithfully,

MARJORY PEASE.

Hon. Secretary National Land and Home League.

May 21, 1914.

The Dome of St. Paul's Cathedral.

SIR,—It is now seven years ago that you published my letter "The Present State of St. Paul's Cathedral." In that letter I suggested the reconstruction of the outer shell of the dome in pumice concrete. I have for some years now made experiments with this material, and find it exceedingly strong, light, fire and weatherproof. The present lead and timber outer dome of St. Paul's Cathedral is of enormous weight, and has caused the cracks in the great piers supporting the dome. It will be found that some of the blocks of stone used in the piers were not laid on their bed, but placed on their grain, which accounts for the cracks. Stone, being in layers, should always, if possible, be laid on its bed. The enormous weight of the sham outer dome of St. Paul's could easily be removed and replaced, as I say above, by pumice concrete construction. This system has been employed in great cathedrals on the Continent hundreds of years older than St. Paul's, and in no single case have shown weakness in their domes and cuttings and arches. Pumice combined with a good cement such as Portland makes an exceedingly strong, light, and fireproof material. There should be no difficulty found in reconstructing this, the most graceful dome in the world, in the above-mentioned materials, and thus relieve the walls and foundation of the enormous weight which the base has to bear. The outlay would not be great, and a considerable sum would be realised by the sale of the old lead and timber, &c., of the present outer dome. As I said in my letter of seven years ago, the cause of the western and southern fronts parting from the main building is that St. Paul's Cathedral is erected on Ludgate Hill (on a clay soil), with a considerable fall on the west to Ludgate Circus, where in the olden days the Fleet river entered the Thames. The southern elevation faces the River Thames, where there is also a considerable fall. However, the foundations of the cathedral should be underpinned. The enormous weight of the outer dome should be removed. This is the greatest danger to St. Paul's Cathedral. In my humble opinion, if the above suggestions were carried out we should hear no more of the dangers to this beautiful building (the masterpiece of Sir Christopher Wren).—I am, Sir, yours obediently,

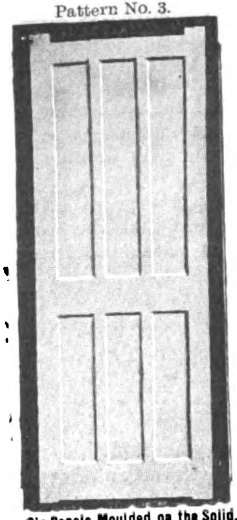
HENRY H. B. SANG,
Architecte-Decorateur.

THE Glasgow Dean of Guild Court last week granted a lining to the Corporation of Glasgow to erect buildings as an extension of the present Municipal Buildings in George Street, John Street, and Cochrane Street. The foundation-stone is to be laid by King George on Tuesday, July 7. Messrs. Watson & Salmond are the architects for the extension, the estimated cost of which is over £100,000.

ACCORDING to the city architect of Toronto, that city will experience this year an activity in building construction which will break the records of all previous years. It is anticipated that the value of new buildings which will be erected in Toronto during the current year will reach a total of $28,000,000. The highest record was $27,500,000 in 1912.

THE Lincoln Guardians on Tuesday last decided to abandon the idea of building a new infirmary on the site purchased for that purpose, and to adopt plans prepared by their architect for an infirmary on Carline Road, estimated to cost £16,000. If the Local Government Board veto the plans they will fall back on the Burton Road site. It is said the new arrangement will effect a saving of £8,000 to £10,000, and £1,000 a year in administration, as compared with the other scheme.

Pattern No. 3.



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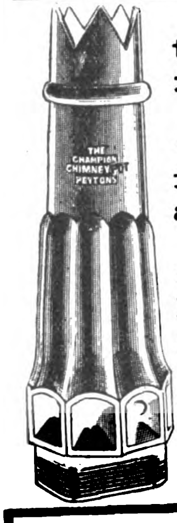

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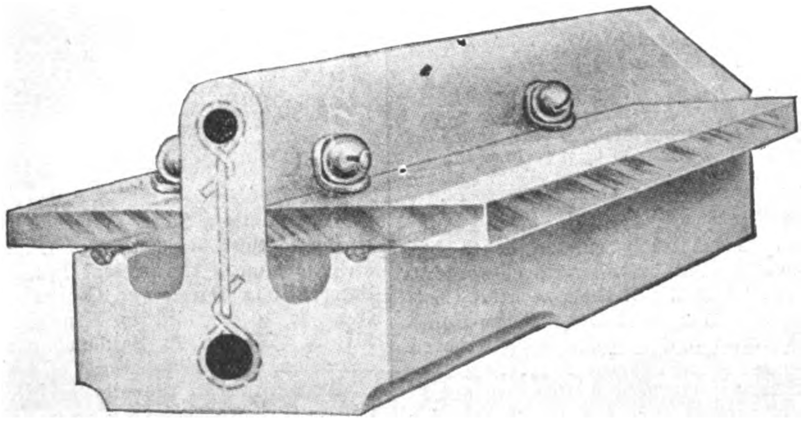

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THE ARCHITECT

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FORTHCOMING EVENTS.

Friday, June 5.

Municipal and County Engineers, Institution of (Scottish Section), Dunfermline: 1. Mr. R. Unwin, "A Town Planning Scheme: its Effects on Housing and Architecture." 2. Mr. A. H. Campbell, "Early Examples of Town Planning in the City of Edinburgh." 3. Mr. J. L. Jack, "Town Planning from a Lawyer's Point of View." 4. Mr. W. L. Gibson, "The Advantages of Steam Tractor Haulage over Team Labour for Road Metal," at 2 P.M.

Saturday, June 6.

Royal Institution: Course of lectures entitled "Studies in Expression in Art. Lecture 1, Origin and Development," by Mr. S. Goetze, at 3 P.M.

Monday, June 8.

Royal Institute of British Architects: Business General Meeting and Adjourned Special General Meeting.

Carpenters' Company: Exhibition of Works in Wood and Wood Carving opens.

Wednesday, June 10.

Institute of Sanitary Engineers: Visit to Messrs. Walkers, Parker & Co.'s lead-smelting works, Lambeth, S.E., at 2.30 P.M.

Thursday, June 11.

Society of Architects: Ordinary meeting at 6.30 P.M.

ARCHITECTURE AT THE ROYAL ACADEMY.—III.

Resuming our consideration of the ecclesiastical work in the Architectural Room of the Royal Academy, we note a design for the "Proposed Church of St. Francis, Dollis Hill," by Mr. Maurice E. Webb, which is shown in plan, section, and elevation, but being skied, it is difficult to determine whether the motif, which is unquestionably Italian, with a distinctive campanile, is based on Romanesque or Early Renaissance detail. While not perhaps entirely a "cheap church," this is evidently of suburban character, where the funds are more limited than the accommodation required. There is no doubt about the style, in whichever sense we use that much-abused word, of the design by Mr. Matthew Honan for "Proposed Church and Presbytery" for the Right Rev. the Lord Abbot of Ampleforth, O.S.B., which is shown by both interior and exterior views. Broad and dignified, severe almost to austerity in the internal treatment, with intersected barrel vaulting of the Rhenish manner and plain, semicircular arches, we have externally, and dividing the church from the presbytery, a campanile of distinctly Italian flavour. Stone, brick, and tile are the materials, but their true colour values are not evident, as all are reduced by the draughtsman to a harmonious grey. This is a very fine and noble design, which we may hope will proceed from the stage of proposal to that of actuality.

Repose and dignity are the qualities that appear to have been studiously avoided in the "Lady Lever Memorial: Christ Church, Port Sunlight," designed by Messrs. W. & S. Owen, the west front of which is shown to possess a large and very elaborate Perpendicular window with an advanced triple-arched porch, loaded to death with pinnacles and tabernacles. Very different is the "Church of St. Cuthbert, Grimscar, Huddersfield," by Messrs. E. B. Hoare & M. Wheeler, whose long straight lines and broad wall treatment give a great sense of repose. The plan shows a wide nave and processional aisles, and indicates a broad and dignified interior. A raised chancel and morning chapel afford room at the east end for vestries or church-room below, which further go to a massing-up effect. In his "New Church, Redcar," of which an exterior view from the west is shown, Mr. Cecil G. Hare has adopted a lofty nave with low aisles, a double west window and tall bell-cot as his means of obtaining effect without undue expense. The interior has a low nave arcade with high clerestory, a pointed barrel vault with tie beams decorated in colour shown in a very pretty water-colour drawing.

Mr. John T. Lee illustrates his "Church of St. Michael, Golder's Green," by a large scale interior view of the chancel and one bay of the nave, thus showing the rood beam, the elaborate pulpit, and reredos with painted decoration. In his "Competitive Design for St. Mary's Church, Harrogate," Mr. Walter H. Brierley has been inspired by Selby Abbey. A somewhat unusual feature is the projection of the morning chapel on the south side, eastward of the chancel, the reason of which is not quite apparent without a plan. The tower is at the south-west angle. A severe treatment of Romanesque character is shown in Mr. E. Stanley Hall's design for "St. Cuthbert's Church, Copnor, Portsmouth, from the North-east." The position of the tower is somewhat unusual to the south of the chancel arch, and its design is rather more original than pleasing. In Mr. William A. Pite's "St. James's Church, Alperton," there seems to be a straining after effect in a cheap church built of red tile and yellow brick, and we cannot wonder that the drawing has been skied.

Mr. Walter Tapper is represented by his "St. Stephen's Church, Grimsby," of which both exterior and interior views are shown. The interior is very effectively treated with simple arches on square piers. A double arcade divides the nave from the north aisle, which is practically a morning chapel. The double arcade is joined by internal buttresses. The south aisle is processional only. A screen with loft and a hanging rood divides the nave from chancel. The exterior view shows the east end with a high unbroken wall below the window, producing the effect of breadth that we are accustomed to expect from Mr. Tapper. Mr. Gerald Cogswell's design for "Proposed New Church, Felixstowe," has a roof spanning processional aisles as well as nave, which is lighted from the aisle windows without clerestory—an attempt at cheapness, the meanness of which is marked by tower-like western quasi-transepts. Apparently the materials are rough-cast walls with stone dressings and red-tile roofs.

A drawing of "St. Pancras Church, Leyden," by Mr. T. Raffles Davison, is presumably a design in which the author has successfully endeavoured to give a Dutch character and yet shows originality. A quite homely south-country feeling is evinced in Mr. H. Reginald Poulter's design for "St. Augustine's Church, Addlestone, Surrey," the building being kept low with a squat square tower over the crossing. "St. John's Church, Oxted," by Messrs. J. O. Scott & Son, does not look like a southern-country church. A fidgety design is made to look even worse than it would be in execution by a fidgety drawing in pen and ink, which degrades the technique and devices of black-and-white drawing to the level of mannerisms. Mr. Horace F. Castle's "Design for a Church vaulted and domed in the Renaissance manner" strikes us as being the production of a student from the Royal College of Art. It is shown in a large drawing of geometrical elevation and section, coloured and completed with the internal decoration of pictures, ornament and gilding that is the especial penchant of the South Kensington Academy.

Amongst the designs for church fittings we may notice Mr. Granville E. S. Streatfeild's "Panelling in Chancel, Loxton Church, Somerset," shown in geometrical shaded elevations, very elaborate, but restless in its exuberance of Perpendicular detail. Mr. Herbert A. Welch's design for "Lectern, St. Jude-on-the-Hill, N.W.," is raised considerably above the floor level with quite a flight of steps. The detail is a freely treated version of Renaissance manner, showing pleasing original thought. Mr. William S. Weatherley has adopted elaborate Perpendicular detail in his triptych and other items in "St. Botolph's Church, Boston: the Chapel-altar, Altar-piece, and Screens," which although elaborate, has not passed the bounds of reason. The "New Reredos: St. Barnabas, Tunbridge Wells," by Mr. Percy M. Andrews, is another example of the use of very elaborate—indeed we may justly say, in this case, florid—Perpendicular detail. In contrast therewith we have a charmingly simple triptych treatment in "Design for New Reredos: Dodbroke Church, Devonshire," by Messrs. Rogers, Bone & Coles, albeit the design is shown in a somewhat sketchy drawing.

"THE ARCHITECT" STUDENTS' SKETCHING AND MEASURING CLUB.

THE subject of a gate pier is one that we considered to be of practical value to architectural students, as in many of the old examples there is to be found evidence of careful study of proportion as well as originality of treatment in a feature which in essence is utilitarian. We are glad to find that there has been a good response to our invitation.

"Y ddraig goch" has selected an excellent example from Drayton Hall, Northants. The drawing is good, but the plan through the pier should show the projection—or is it a sinking? the drawing does not tell us which—on the face. The whole effect of the design might be marred in execution by too great or too little depth in this detail, and these are the fine points that require study. There is no indication on the drawing of the material of the pier, which is a serious omission.

"Harley" has chosen a pier from West Wickham Court, built of brick, with stone cap and base, and surmounted by heraldic crests. The design is not of the happiest, either in the form of cap or the treatment of the heraldic insignia, and "Harley's" drawing needs more practice.

"N" has found his subject at 6 Coney Street, York. Like much of the Renaissance work in York, the detail suffers from coarseness, but the main intention of the design is good. The drawing is good, but the pier is surely not a monolith, as the absence of joint lines would indicate. The connection of piers with the steps between them is clumsy.

The well-known brick piers on the west side of Lincoln's Inn Fields form the subject of "Plato's" drawing, and are well rendered.

"Shinio" has made a very good study of gate piers from Malpas Church, Cheshire, which are excellent in design from the harmony between the pier itself and the urn above. By a notable treatment of the pier-cap this is made part of the support of the urn, thus avoiding a too common error of disconnecting pier and finial by a too insistent capping.

We award prizes of one guinea each to "Plato" and "Shinio."

NOTES AND COMMENTS.

THE ignorance of the general public as to the relations between architects and quantity surveyors, or, as they are called in Scotland, measurers, is well shown by a discussion that took place at a recent meeting of the Glasgow Corporation on a letter from Mr. C. J. Maclean, secretary of the Glasgow Institute of Architects, directing attention to the practice not uncommonly followed by public authorities when promoting a building scheme of making the appointment of a measurer or surveyor independently of, and in some cases prior to, that of the architect. The letter urged that where the services of a measurer were required the selection of such should be left with the architect. One worthy councillor suggested that the Institute was a trade union of architects, another that it was absurd that the architects should be consulted before a measurer was appointed, thus showing how ignorant he is of the fact that the tenders for a building are often increased by 5 to 10 per cent. if the quantity surveyor is one who is unacquainted with the usual practice of the architect from whose drawings he has to take off the quantities. Spite an often-expressed opinion, based on the custom of an architect's remuneration being based on a percentage on the cost, his anxiety is usually to keep down the expense in unprofitable matters, and a quantity surveyor who is in sympathy with the architect's methods is a great assistance to this end.

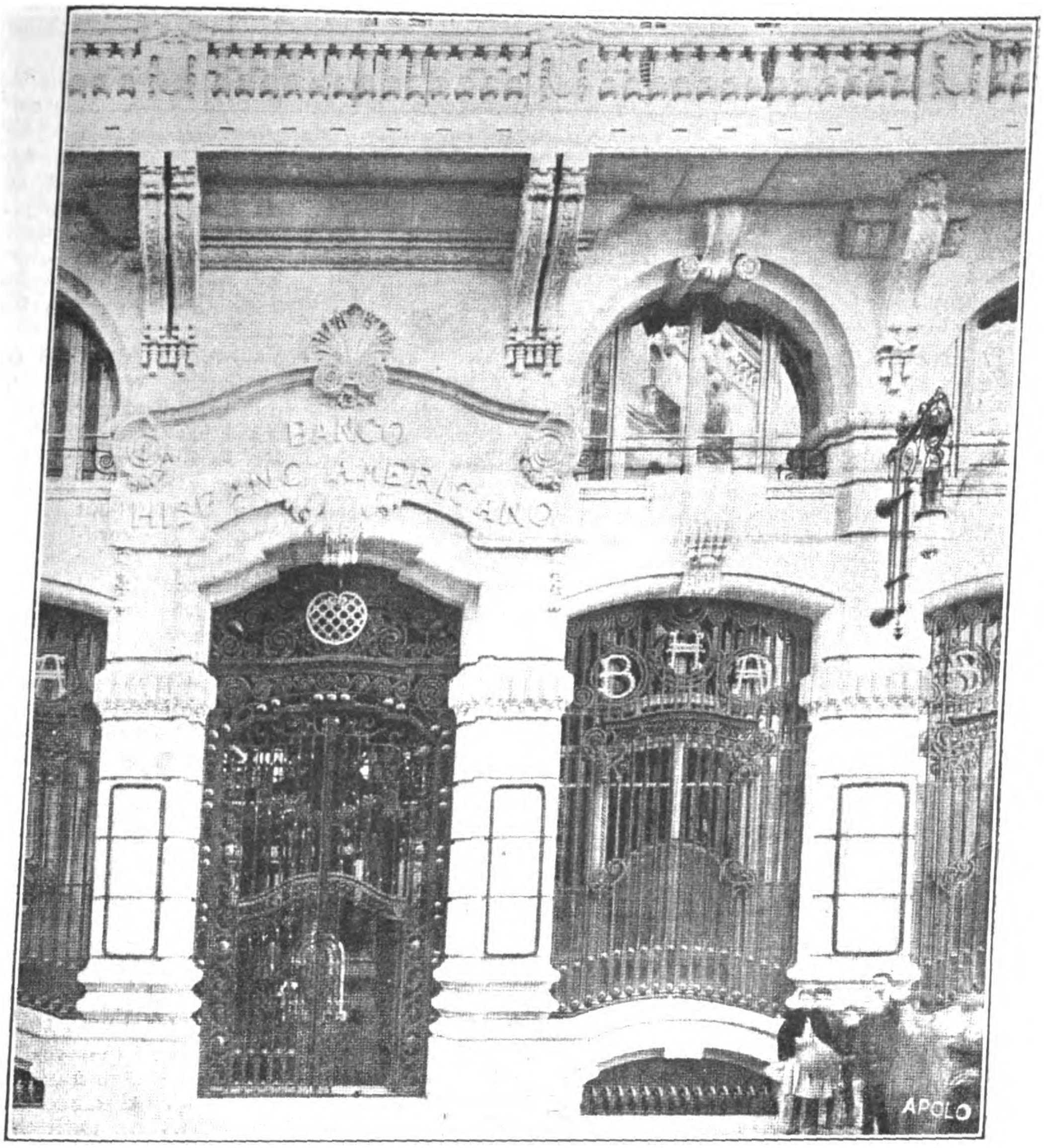
Coventry is remarkable for two things, its wealth of architectural antiquities of the highest value and its recent development as a prosperous manufacturing centre. Unhappily the two are often incompatible, and ancient monuments suffer from an increase of a town's financial prosperity. Therefore we are glad to learn that a meeting has been held to consider a proposal to form a society on the lines of the Stratford-on-Avon Guild, to purchase those antiquities of the city which are not under the care of the Corporation, and to influence, where possible, the artistic development of Coventry. An address was given by Mr. F. Wellstood, secretary, and one of the founders of the Stratford Guild, on the work of that body. Miss Dormer Harris said modern Coventry was an accomplished fact; its growth into a mighty commercial city seemed inevitable, and the thing was to preserve what remained of the ancient city. She could conceive no better way of doing this than by a co-operative campaign on the lines of the Guild of Stratford. She would like to see Palace Yard turned into a civic museum. It was decided to form a society, and to make the subscription low, so as to bring into membership a large number of citizens.

The existence of a true analogy between architecture and music has often been predicated, and Mr. C. H. Moody, of Ripon, in a paper on "Music and Architecture," before the members of the Yorkshire section of the Incorporated Society of Musicians at the Church Institute, Leeds, on Saturday, suggested that an analogy existed between music and all the sister arts in some measure, and that there was more than a modicum of truth in the dictum of the "man in the street" that architecture was frozen music. Both architecture and music must possess form and design and organic harmony, and many of the world's noblest buildings seemed to him to express in their grace, or dignity, or symmetry, just what the best music expressed. On the other hand, some of our twentieth-century music bore an uncommon analogy to the Tower of Babel.

The remarkable collection of public buildings which adorns the Cathays Park at Cardiff emphasises the meanness and constriction of what should be some of its principal thoroughfares, and Mr. Edwin Seward, F.R.I.B.A., has made a very sensible and practical, as well as æsthetically admirable suggestion in connection with the proposed widening of Duke Street, which he would restrict within lesser limits than have been mooted

MODERN EUROPEAN ARCHITECTURE.

SPAIN.



[From *Arquitectura y Construccion*.

SPANISH-AMERICAN BANK, BARCELONA. DETAIL OF FACADE.—Don MIGUEL MADORELL BIUS, Architect.

and supplement by the formation of two squares, the one where Castle Street and Duke Street meet High Street, the other where St. John's Square meets Queen Street.

It is to be regretted that it is not possible to always save an interesting old architectural monument by turning it into a museum, as has been done with the Thorpe Prebend House in High St. Agnesgate, Ripon, which has been formally opened as a museum for the city. Rich in historical associations, Ripon is fortunate in becoming the possessor of yet another link with the past, for the oak-lined, oak-beamed, and low-ceilinged old house which now provides shelter for many interesting and valuable museum objects fully accords with the traditions of earlier times.

The Thorpe Prebend House was one of the seven Prebend Houses used by Prebendaries of Ripon. The Prebends were named Thorpe, Stanwick, Studley, Gyvendale, Munckton, Sharowe, and Nunwick. They are believed to have been founded by Archbishop Ealdred between 1060 and 1069, and take their names from the places where their principal possessions lay. The whole of the properties belonging to the Prebend of Thorpe are stated in an Inquisition in 1609 to have been lately sold to a Mr. George Dawson, and were then worth £60 per annum. It is probable that the mansion house was in a ruinous state, and that Mr. Dawson erected the present house on its site, as on the night of April 14, 1617, he entertained James I. there. The description of the house, given in the report of the Inquisition in 1609, is "The Mansion House which did belong to the said Prebend in Rippon did adjoyn to the street called Betherom Bank in Rippon, near unto the water of Skell." The necessary alterations have been carried out under the direction of Mr. John Bilson, F.S.A., F.R.I.B.A.

A claim which, up to the present, has been unsuccessful, is being made by Irish antiquarians for a treatment at the hands of the Government more nearly approaching to that accorded to England, Scotland, and Wales, as the importance of Irish antiquities demands, and in a paper read by Professor R. A. Macalister, F.S.A., to the Royal Irish Academy it was stated that it is estimated that there are 1,567 ancient structures to the square mile in Ireland, as against 1,326 in England, 559 in Scotland, and 1,421 in Wales. These antiquities are of the highest scientific importance. Except a small number vested in the Board of Works and in County Councils, nothing is being done to protect these monuments, and nothing at all to record them, which latter is the more important work of the two. Royal Commissions have been established in England, Scotland, and Wales for the purpose of making lists of ancient structures in the three countries, but nothing of the sort has been done in Ireland. The Government spends £29,763 on the ancient monuments of Great Britain, and only £1,286 on those of Ireland. If these sums were justly proportioned the amount allotted for this important work in Ireland would be £15,964. The reason given by the Government for the refusal to appoint a Commission was, first, the pending changes in the government of Ireland, and, secondly, the provisions made under the Land Acts for the preservation of such monuments. In regard to the first reason, it was only stating a truism that there would be no funds for such purpose under the Government of Ireland Bill, unless such money was specially set apart by the Central Government. The provisions of the Land Act were useless for the proper preservation of the ancient monuments, to say nothing of the task of recording them, which was an equally important work from the antiquarian's point of view.

INTERNATIONAL FIRE SERVICE.

THE International Fire Service Council is holding an executive meeting in London on June 15, 16 and 17, at the invitation of the British Fire Prevention Committee, when the principal items under consideration will include the preparation of an International Fire Dictionary—*i.e.*, a dictionary of fire technical terms in three languages—and the arrangements for a Conference on certain fire-service and fire-preventive subjects to be held at Copenhagen in 1915.

The meeting is to be presided over by Commandant Meier, Chief Officer of the Amsterdam Fire Brigade, the Vice-Presidents being Major Westphalen, of Hamburg, and Mr. Edwin O. Sachs, of London.

The opportunity will be taken to show the foreign visitors various improvements that have taken place in London both on the fire-service and fire-preventive side, and they will also be suitably entertained.

PRIVATE ARCHITECTS *v.* PUBLIC OFFICIALS.

QUITE a miniature battle has been raging at the Holborn Borough Council in connection with a proposal to erect workmen's dwellings on a cleared site in the borough. Under the scheme as originally submitted to the Council by the Housing of the Working Classes Committee, who till recently have had the matter in hand, the preparation of the plans for the new buildings was entrusted to the Borough Surveyor, Mr. Spurrell. This course met with vigorous opposition from the architectural element on the Council, and Mr. C. FitzRoy Doll, an ex-Mayor of the borough, and himself a well-known London architect, contended that only qualified architects should be employed by municipal authorities. This contention, said Mr. Doll, was borne out by numerous resolutions passed by conferences of architects in London.

As a result of the sharp difference of opinion surrounding Mr. Spurrell's appointment as architect, the Council was induced a few weeks back to refer the whole question of the erection of the buildings to the Works Committee, the personnel of which is alleged to include the whole of the building and architectural talent on the Council.

The matter culminated last week in the presentation of a report by the Housing of the Working Classes Committee, recommending the Council to quash its former resolution and restore to them the handling of the scheme. In the course of an acrimonious discussion on this report it was again pointed out that the Borough Surveyor was not an architect. His plans for the new buildings were the subject of much hostile criticism, and by innuendo—if not in positive terms—it was clearly implied that he should not be entrusted with the work. For the opposite camp it was asserted that the objection to the Borough Surveyor's appointment was purely the outcome of professional jealousy, and that to now withdraw the work from his purview would amount almost to professional insult.

The position was finally compromised by an agreement to appoint a hybrid committee, consisting of members of the two committees involved in equal numbers, to consider the whole matter. Whether or not Mr. Spurrell's plans will be finally abandoned is purely a matter of conjecture, but in the interim a very nice point of professional etiquette is in the balance, and we shall await with interest the result of the committee's deliberations.

COMPETITION NEWS.

BATLEY.—The Education Committee have decided to invite local architects to submit designs for the erection of a school of the pavilion type, to be T-shaped on plans, and to have six class-rooms for forty scholars each, a central hall, &c. The cost is not to exceed £3,000.

CHESTER.—The date for sending in designs for the proposed workmen's dwellings is to-morrow, June 6.

DURHAM.—In connection with the scheme for the provision of a workmen's institute at Sacriston, at a cost of about £4,000, the plans of Mr. J W. Hays, of Wingate, have been placed first in the architectural competition.

LIVERPOOL.—The plans of Messrs. Briggs, Wolstenholme & Thornely, of Liverpool and Blackburn, have been placed first in a limited competition for the erection of a home to accommodate forty nurses in connection with the Stanley Hospital, Liverpool.

LONDON.—The design submitted by Mr. H. Austen Hall, F.R.I.B.A., Gray's Inn Square, W.C., for the proposed central offices to be erected in Rosebery Avenue for the Metropolitan Water Board has been placed first in the limited competition. Mr. E. Guy Dawber, F.R.I.B.A., the assessor, in his report states: "The author of this design submits a compact and well-thought-out scheme, economically planned and arranged. The corridors and entrances are direct; there is no wasted space, each department being kept distinct and self-contained. The elevations have been broadly treated, are simple, yet dignified in character, and in my opinion the whole scheme is the best submitted in the competition. Messrs. Stoner & Sons, quantity surveyors, of London, have checked the cubic contents, which are approximately correct, but they are inclined to think a somewhat sanguine view has been taken of the cost, though this will greatly depend upon the character of the building as executed." Mr. Guy Dawber advises the Board that, with care, buildings can be erected to the selected design at a cost of about £90,000. The six architects invited to compete were Messrs. Brown & Barrow, Mr. Edwin Cooper, Mr. H. O. Ellis, Mr. E. T. Hall, Mr. H. T. Hare, and Messrs. Warwick & Hall.

ILLUSTRATIONS.

NEW OFFICES, COPTHALL COURT, LONDON, E.C.

THESE offices are the property of the Worshipful Company of Armourers and Brasiers, and were erected under the joint superintendence of the late Mr. Alexander Graham, F.S.A., and Mr. T. A. Pole, A.R.I.B.A., until the death of Mr. Graham, the work being finally completed by Mr. Pole. Some difficulty was experienced in the matter of foundations by reason of the bed of the old Walbrook passing through part of the site, and it was found expedient to carry down concrete piles to a fair depth. Another problem was presented by the propinquity of the neighbouring buildings and the necessity for non-interference with their enjoyment of light. This trouble was got over, after considerable care in the choice of the most suitable material, by using Burmantofts Marmo as a facing. Marmo had not up till then been employed on a large scale in London. But the experiment proved such a success that it has since been specified for several important London works, including Lyons' new hotel in Piccadilly. The building is of seven storeys, exclusive of the sub-basement, and was designed with a view to the requirements of stockbrokers. The various floors are divided into sets of offices, so arranged that a tenant may have one room or a suite. The work of erection was carried through by Messrs. John Greenwood, Ltd., the general contractors, with commendable despatch, considering the restricted character and comparative inaccessibility of the site.

Among the various sub-contractors were the following: Heating, James Gray, Ltd.; lifts, R. Waygood & Co., Ltd; tiling and floor pavings, Carter & Co., Ltd.; Burmantofts Marmo, the Leeds Fireclay Co., Ltd.; electric lighting, Elkins & Co.; paving lights and fireproof glazing, Hayward Bros. & Eckstein, Ltd.

AYLSHAM CHURCH, NORFOLK.
TUTTINGTON CHURCH, NORFOLK.

ONLY the lower part of the rood screen in Aylsham Church now remains, a detail drawing of which we give. Tuttington Church (St. Peter and St. Paul) is of Perpendicular date, with the exception of a Norman tower, and contains many quaintly carved bench ends, of which our illustration shows an example.

WREN'S CHURCH INTERIORS: THEIR DESIGN, EQUIPMENT AND DECORATION.

By H. DUNCAN HENDRY.

CHAPTER IV

FITTINGS.

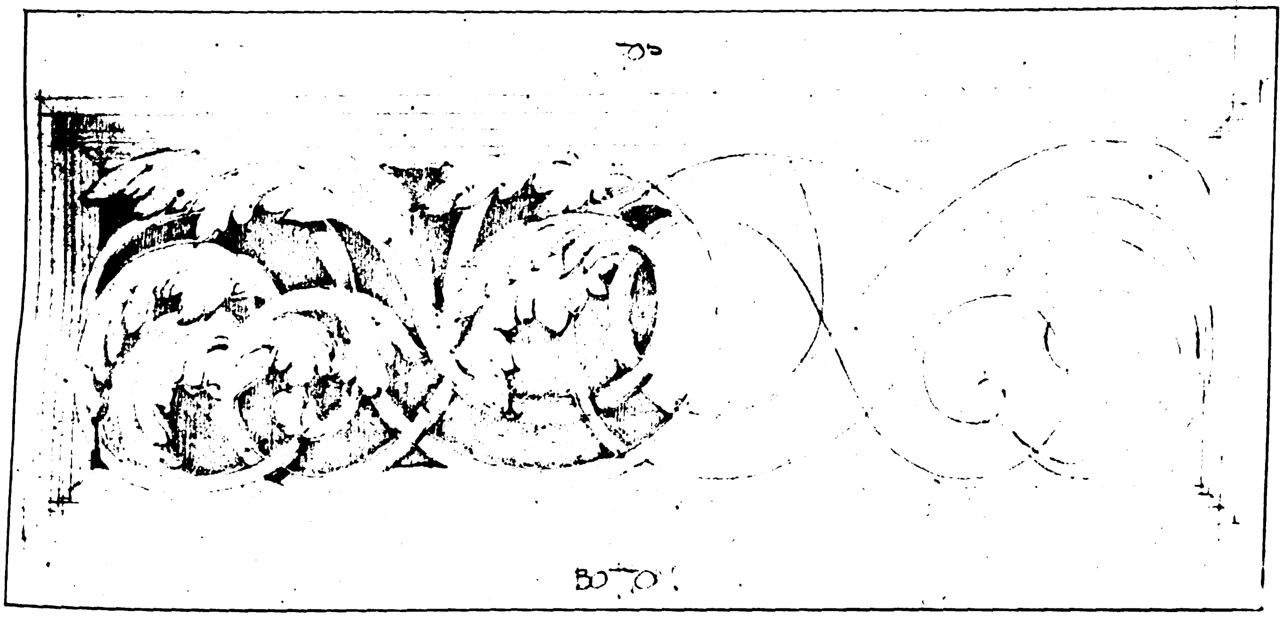
PULPITS AND SOUNDING BOARDS.—PEWS.—FONTS AND FONT COVERS.—ORGANS.—ALTAR PIECES.—ALTAR RAILS.—SWORD RESTS AND LAMPS.

THIS chapter is devoted to a subject which forms an integral part of the design of Wren's churches, and without which, in many cases, they would be shorn of their chief interest.

Not the least interesting and striking of these features are the pulpits. These are invariably hexagonal on plan, and ascended by a circular stair with moulded handrails and the typical spiral balusters.

The side panels of the pulpit are richly carved with festoons of flowers and cherubs' heads, sometimes enclosing a circular or oval panel. To those who may be disposed to think such decoration irreverent, it should be remembered that to work so severely scientific as Wren's, garlands and pouting cherubs give relief, and also that whereas the Gothic builders relaxed their efforts in grotesques, the Renaissance preferred the dimpled limbs of little children and a riotous profusion of naturalistic forms in fruit and flowers.

A beautiful example of pulpit design is that of St. Mildred's, Bread Street, of which an illustration is given.



ST. MARY ABCHURCH.—DETAIL OF PIERCED PANEL TO CHURCHWARDENS' PEW.

A reference to this example draws attention to a feature not yet touched upon, and that is the sounding board. This beautiful fitting has been removed from many of the churches (usually for no apparent reason), but where it does exist, as in the church of St. Mildred's, it forms a most delightful feature of the interior.

These sounding boards always follow the plan of the pulpit—*i.e.*, they are usually hexagonal. Support to them is provided by the column of the pulpit at the back and by a wrought-iron stay from the adjoining wall. The soffites of the sounding boards are usually panelled and occasionally veneered with different coloured woods.

The cornices are often lightened by a circular or triangular pediment form, as in the case of St. Mary Abchurch. In St. Stephen's, Wallbrook, the circular pediment is concave in elevation, an unusual and not too pleasing treatment, despite the brilliancy of the carving.

In St. Mildred's, it will be seen, the cornice is broken forward in a circular sweep on each of the six sides, over a winged cherub's head.

But little can be said of the pews in the City churches, as, in almost every instance, the original fittings have been removed and new ones placed in their stead, the usually hideous design of which makes the loss of the old ones doubly deplorable.

There are one or two instances, however, where the original pews remain, though even in these they have been somewhat cut down.

In St. Mildred's, however, a church for the preservation of which the antiquarian must be devoutly thankful, we find an instance of the pews being left as they were originally.

They are enclosed all round, and are almost pens, in fact, with doors giving access to them from the nave and aisles. They are about five feet in height (it must be remembered that the pulpits were much higher formerly than is now the case), and are panelled in two unequal heighths.

Wren himself was averse to pews at all, and gave expression, in a letter published in his son's "Parentalia," to his preference for benches. It may be presumed, however, that there were two substantial reasons why the enclosed pew was adopted ; one, that it would give a certain additional comfort and immunity from draught to the occupant, and the other that it provided a ready source of income to the church. Although it is seldom that these pews were anything but of the plainest form (and incidentally terribly uncomfortable), there was a pew, usually at the back of the church, upon which a little ornament was sometimes lavished. This was the churchwardens' pew.

For purposes of added dignity, and possibly for extra supervision, it was raised a step higher than the rest of the church, and had a general air of greater comfort.

The chief feature was the pierced work which generally decorated the front panels. These were often executed in leaf work, and the illustration which depicts one from St. Mary Abchurch will convey some idea of the treatment of these panels.

It may not be amiss to refer here to a unique feature of these City churches. We refer to the sword rests which occasionally adorn the pews. One of these, as a rule, specially marks the corporation pew, where the sword rest also serves the purpose of mace holder and is decorated with the City arms.

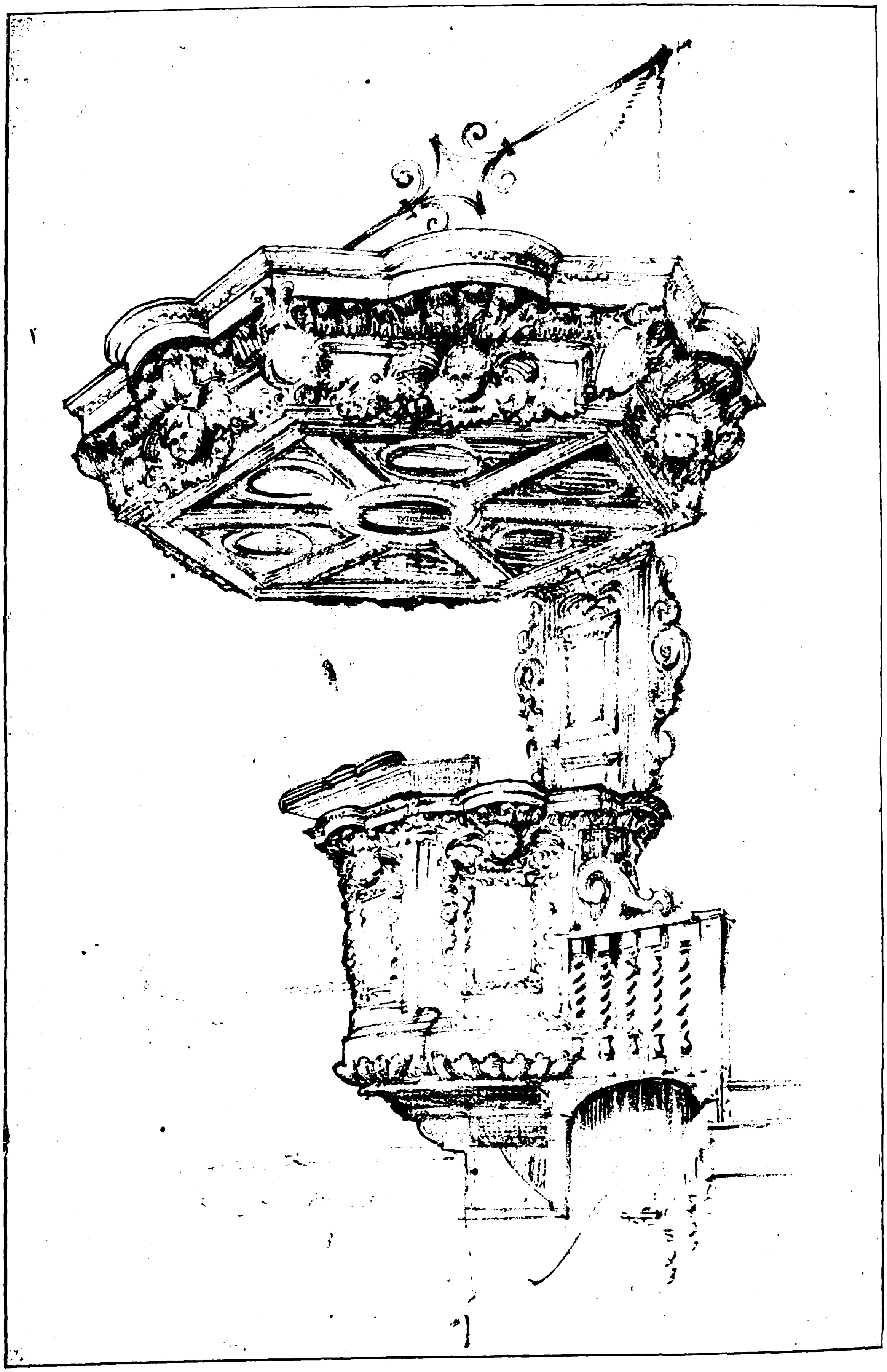
They are of wrought-iron, richly gilded, and vary considerably in design from a simple iron standard, bearing the shield of the pewholder, to the most elaborate scroll and leafwork. The illustration here shows a typical example. It is taken from the church of All Hallows, which, although anterior to Wren, has many fittings, both of wood and iron, that are undoubtedly contemporary with him.

A feature which generally attracts attention in the City churches is the font, for in nearly every case the white marble, with its exquisite carving and the no less beautiful oak cover, often suspended by a chain from the ceiling, forms a most striking and interesting object.

These fonts are usually of the baluster and vase form, standing on an octagonal step standing about four or five inches above the general floor level. The bowl is often most richly carved with the orthodox cherubim, fruit, &c., but occasionally carving of a more elaborate nature is introduced, as is the case in St. James's, Piccadilly. In this example the sculpture is attributed, with more than usual authority, to Grinling Gibbons. The font is nearly 5 ft. high, and the bowl 1 ft. 10 in. in diameter.

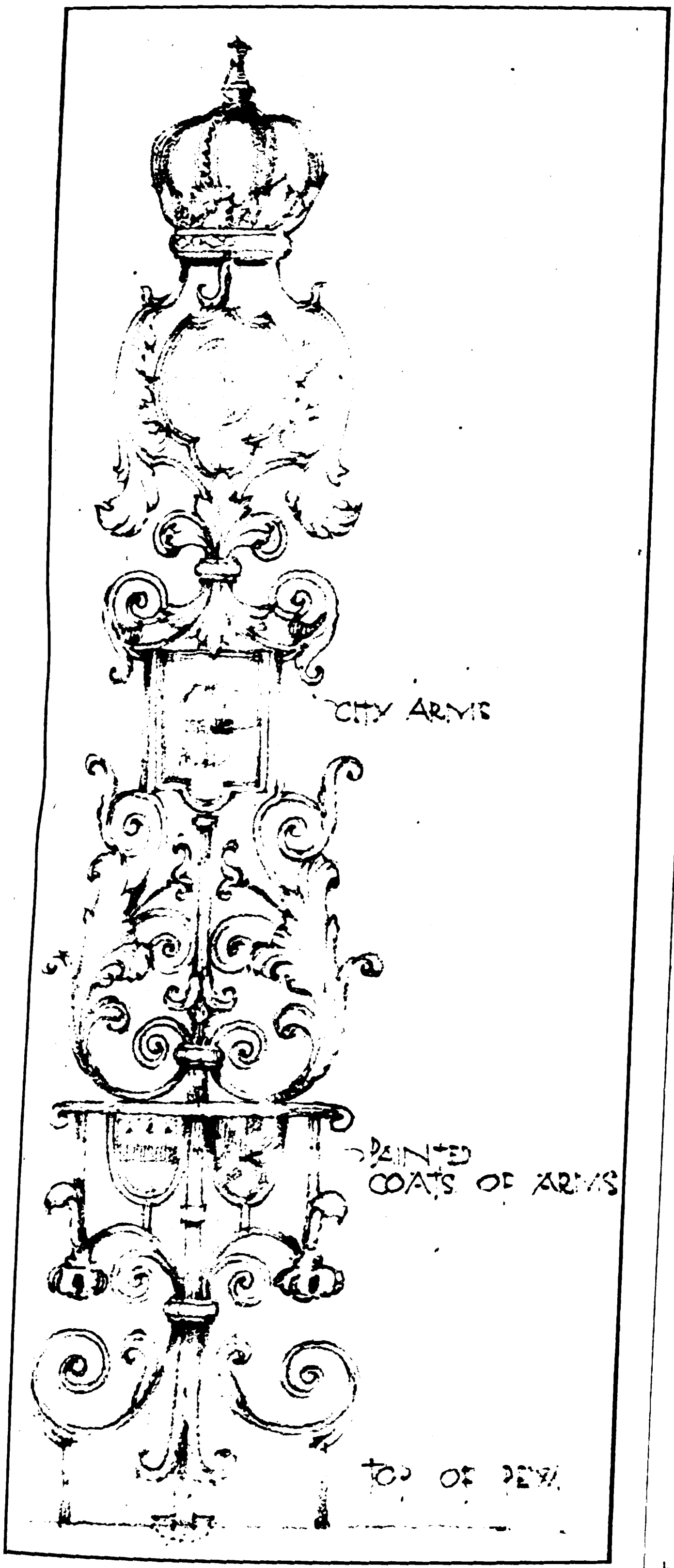
The shaft represents the tree of life with the serpent twining round it, and offering the forbidden fruit to Eve, who, with Adam, stands beneath. These figures are 18 in. high. On the bowl are bas-reliefs of the Baptism of our Lord, the Baptising of the Treasurer Candace by St. Philip the Deacon, and the Ark of Noah, with the dove bearing the olive branch.

Much more typical examples, however, are those in the



ST. MILDRED'S, BREAD STREET.—PULPIT AND SOUNDING BOARD.

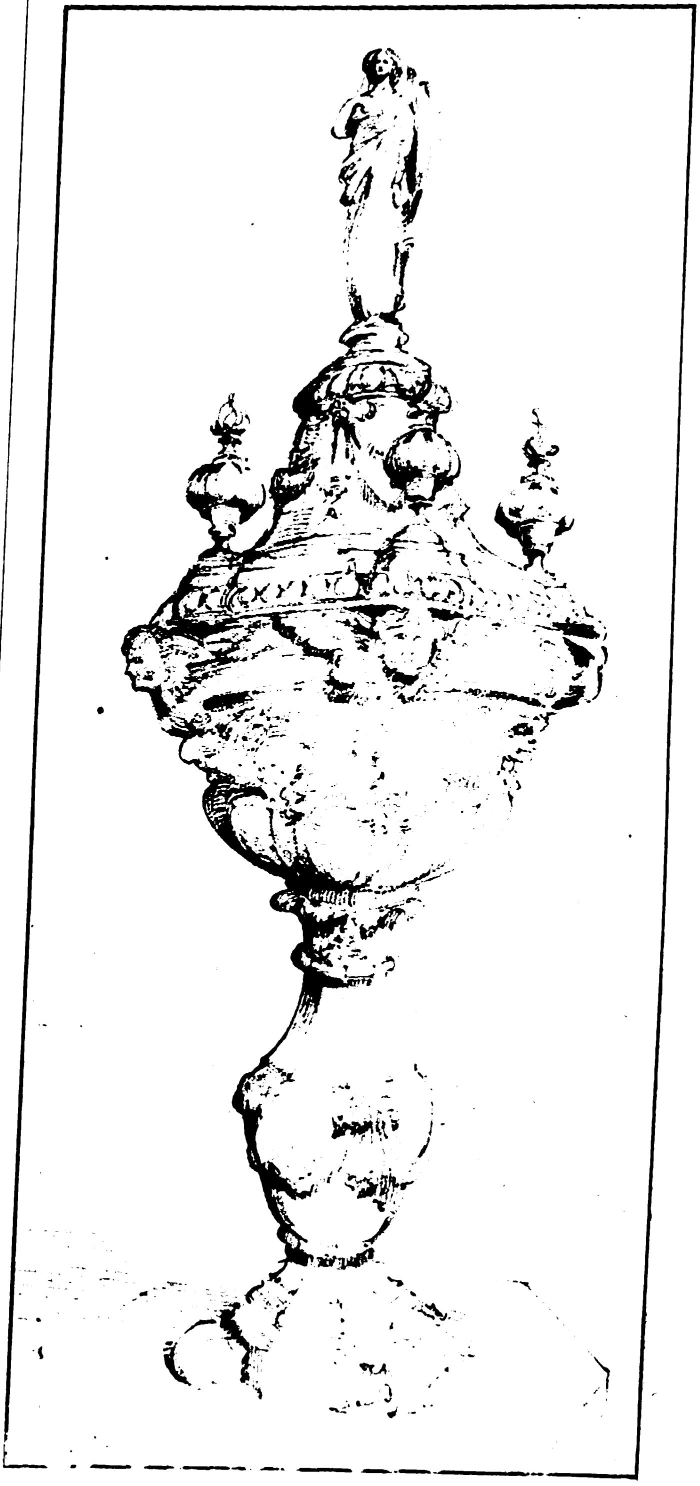
churches of Christ Church, Newgate Street, and St. Stephen's, Wallbrook. They are of the usual baluster form, richly adorned with carved acanthus leaves, festoons of flowers and fruit, and winged cherubim. They are both exquisitely proportioned, that of St. Stephen's probably showing more refinement. In the case of the covers, however, although St. Stephen's has much the richest example, that of Christ Church seems the happier design. It is a beautifully balanced composition, the finials over the heads of the cherubim on the font being a very successful innovation.



ALL HALLOWS BARKING.--SWORD REST.

We may now turn our attention to the organs and organ cases.

Organ design reached a very high stage during the eighteenth and nineteenth centuries, and from many famous names in this particular branch of industry one might mention Father Smith, Renatus, Harris, Glyn, and Parker and Jordan, the last-named being the inventor of the swell organ. Organ building, however, is probably of more interest to the musician than to the architect, and, with the latter, the organ case will no doubt engage his attention more, though this seems a branch of design curiously neglected by the architect. A cursory examination of some of the beautiful examples in Wren's churches should be sufficiently convincing to show what can be done in this direction. Two particularly fine examples are to be seen in St. Lawrence Jewry (forming the central feature of that magnificent west end) and St. Clement Danes.



CHRIST CHURCH, NEWGATE STREET.—THE FONT.

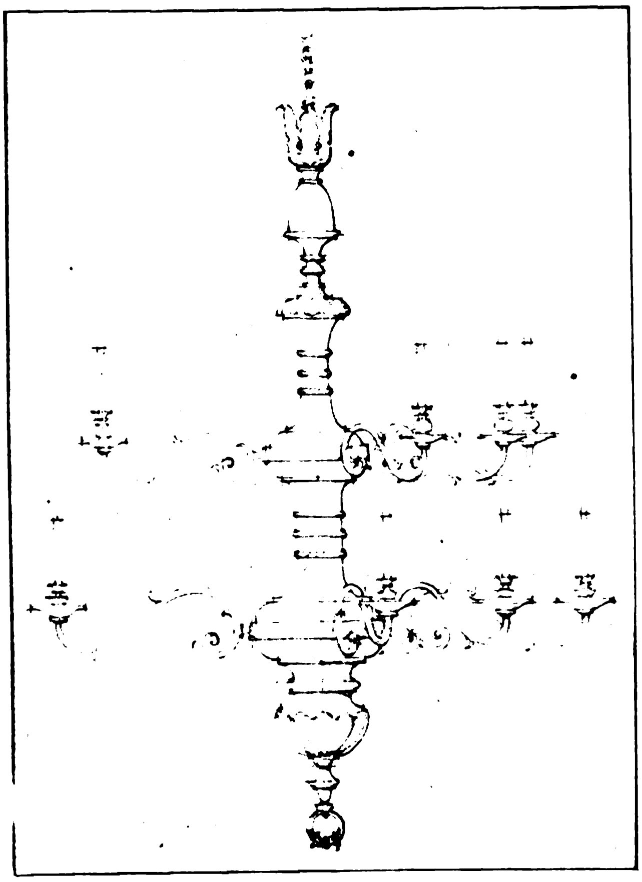
The last structural fitting which we may touch upon, and in some respects the most important, is the altar piece.

With no clearly marked chancel, and seldom any distinctive apse, the altar piece was, as often as not, placed against the wall, under the east window. Being thus placed, it had not the advantage of position enjoyed by a chancel. Consequently a good deal of thought and care had to be bestowed upon it to give the dignity and importance necessary. In some instances the work is not an unqualified success, but in the majority of cases it reaches a very high standard of design. A description of the altar piece of St. Stephen's, Wallbrook, will suffice to give a general idea of the design of many of the other examples.

It is enclosed by two columns of the Corinthian order, with their usual entablature, and above the cornice are the arms of Queen Anne, enclosed by a pediment. The inner panels contain the Ten Commandments between the paintings of Moses and Aaron, and the outer ones stating the Creed and the Lord's Prayer. The whole design is richly ornamented with cherubim and festoons, much of which is heavily gilded.

The design of these altar pieces vary, of course, in every case, but it will be found that they generally embrace some composition of the orders. St. Mary Abchurch has a most charming example with fluted Corinthian columns, rich entablature, and broken pediments. The chief beauty of the altar piece, or, indeed, of the whole church, lies in the exquisite carving by Grinling Gibbons, which adorns the former. Though it conveys the impression somewhat of being "pinned up," the execution is so brilliant, and the general arrangement so light and graceful, that he would be hard to please indeed who could not admire it.

St. James's, Piccadilly, affords another striking design, being particularly notable for having a white marble enclosure; the marble scrolls to the panels, unfortunately, have been replaced by bronze. The wood used by Grinling Gibbons, in some further remarkable carving, is lime, the reredos being of cedar.



ST. NICHOLAS COLE ABBEY. DETAIL OF BRASS CHANDELIER.

Mention should perhaps be made of the rails which enclose the altar. These are usually of the spiral baluster form, so much favoured by Wren and so reminiscent of his domestic work. A good example of this type is to be seen in St. Margaret's, Lothbury.

We may perhaps fittingly draw this chapter to a close with a reference to the brass chandeliers which were a feature of the original interiors. Very few of these are now left, their places being taken by numerous aggressive Birmingham "Gothic" gas fittings. Occasionally one finds the original fittings still hanging, and fine examples may be seen in the churches of St. Mildred's, Bread Street, and St. Nicholas Cole Abbey. They consist of a heavy brass centrepiece, with from six to twelve holders branching gracefully from the same. The whole is suspended from the ceiling by a strong chain or rod.

There are still one or two minor fittings occasionally met with in these old churches, such as almsboxes and bread racks, but these, though interesting from an historical point of view, have practically no claim on the practical attention of the architect.

CHAPTER V.

Decoration and Conclusion.

Before drawing this article to a close, it would be as well to make some slight reference to the surface decoration of Wren's churches. The difficulty, however, lies in the fact that in scarcely any example can we trace the architect's original scheme of decoration in its entirety.

Too often we find a clash of kaleidoscopic colour or a riotous use of gilt, destroying entirely that restful effect which we can conceive was Wren's aim. By diligent search, however, it is possible to deduce from isolated instances something of this treatment which exists in our imagination.

Among these isolated cases the church of St. Mildred's, Bread Street, probably supplies us with most information. In this example we see the richly modelled plasterwork left uncoloured, except for a grey colouring as a background to the pendentives; and, comparing this with some of the other examples where colour has been applied with more liberality than taste, we can imagine how much this very plainness of decoration assists the beautiful work to which it is applied. How much this simplicity was due to taste and how much to necessity it is impossible to say, but the result is very pleasant, and gives just that touch of austerity that seems the chief charm of St. Mildred's.

After this interior, it is disappointing indeed to turn to many other examples where the decoration completely ruins the effect. Instances are too numerous to mention all, but cases which recur to the mind are St. Clement Danes, the vaulted ceiling of which is painted a sickly blue colour and "enriched" with gold fleurs-de-lis; St. Martin's, Ludgate, where the columns and pilasters are finished a dreadful yellow; and St. Vedast, Foster Lane, where the prevailing note is a very aggressive brick red.

A note may be added with reference to the use of gilding in these churches. Much heartburning has been caused by the use of this material—one of the few shams Ruskin condoned.

Used sparingly, gilding may add to the enrichment of and enhance moulded plasterwork just as an excess of it most surely spoils and cheapens work to which it is applied, and it must be confessed that in many instances the use of gilding has been too lavish.

The case of St. Clement Danes is typical; the plasterwork, itself unpleasantly elaborate, is covered with gilt, and rather shabby gilt at that, and the whole effect is gaudy and bizarre.

It would seem that, if gilding must be used, it should be reserved for emphasising the important parts of the design. No exception could be taken to its use in moderation around the reredos, as it would effectually focus the attention on what is after all the centre of interest in the church.

Turning to the question of woodwork, the most notable feature is the extraordinary partiality church decorators of the last fifty years or so have had for a particularly sticky-looking brand of varnish. This unpleasant covering has been spread with strict impartiality over broad surfaces of panelling or the finest and most delicately carved foliage.

It is difficult to account for this work, as there is no need for a preservative; but, whatever the reason was, there can be no doubt about the result. It gives an unreal appearance to the wood, and it entirely destroys the crispness and virility of the carving. It is refreshing to note that in several instances steps are being taken to remove it, but much mischief has been already done, and the scraping off process does not improve the texture of the original work.

Tastes no doubt vary as to the right and proper modes of church decoration, and no good purpose would be served by a lengthy exposition of the various views held on the subject. There are those who hold that no richness or sumptuousness can be too rich or too sumptuous for a place dedicated to the worship of God, just as there are others who think that the simpler and more humble the building the more suitable it is for public worship. We are not concerned here with these niceties of opinion, but if we can learn any lesson from Wren's churches, it is the lesson of reasonableness and rationality in plan as well as in decoration.

Where the funds at his disposal would permit we find Wren used them to the best advantage; he spent money on ornament, but it was never spent aimlessly or unintelligently; his ornament was always subservient to proportion and harmony of parts, and, for this reason alone, it is easy to understand why, when he was compelled to exercise economy, the effect of plainness and baldness is always relieved by the masterly planning and just proportion of the various parts.

It is a happy sign that the architects of several important churches of recent date have grasped these simple principles and have broken away from the cast-iron Gothic principles of design which have choked and stifled English church design for the last fifty years or more.

Sir Christopher Wren has earned a well-merited distinction in the annals of architecture, principally, of course, for his wonderful work at St. Paul's, and also in a smaller measure for his beautiful collection of spires and towers in London; but in these quiet simple interiors he is still supreme, albeit a more intimate and humble note is struck. It is the difference between a simple ballad and a brilliant concert.

A LONDON BUILDER ON SANITARY OFFICIALS.*

By GUY B. GRAVE.

IN preparing this paper my object was to bring before the notice of my fellow-members (particularly those interested in the execution of drainage and sanitary work as applied to private-house property) some of the difficulties which arise in connection with this class of work owing to the lack of uniformity of practice adopted by sanitary departments of some of our Metropolitan Borough Councils.

The divergent views held by medical officers of health and sanitary officers as to their legal powers under the various Acts of Parliament, &c., now in force, in my opinion sometimes cause a serious hindrance to the expeditious carrying out of work one may have in hand.

I believe that the first serious attempt at legislation in respect to sanitation and drainage, as applied to house property generally, is the "Metropolis Management Act, 1855," which gave great powers to the bodies who had to administer it. By the "Public Health (London) Act, 1891," still greater powers were given. Upon the passing of the "London Government Act, 1899," the now existing "Borough Councils" came into being. To these new bodies were transferred, I believe, all the powers relating to sanitation possessed by the Vestries and District Boards which previously held the field. Then, also in 1899, the "Metropolis Amendment Act" conferred upon the London County Council the power to make by-laws in connection with the construction, re-construction, or alteration of pipes and drains communicating with sewers, or the traps and apparatus connected thereto, together with plans and notices relating to the foregoing. This last Act was followed in 1901 and 1903 by the by-laws now well known to all who have anything to do with drainage and sanitation in the County of London.

The "Metropolis Management Act, 1855," was, I should say, a much-needed measure. From what I have heard and read, the sanitary condition of London previous to this Act was deplorable. Those of us who have come upon life's stage since that date have repeatedly encountered glaring instances of insanitary fittings and almost prehistoric drainage within the London district, these conditions being by no means confined to poor-class property. How much worse, therefore, must things have been prior to this date! This Act was the only guide to the officials for a great number of years, and, as may be supposed, many and various were the ideas which prevailed amongst sanitary officers as to the best method of draining a town house and fixing w.c.'s, baths, sinks, &c.

The most important attempt at legislation was the by-laws of 1901 and 1903, made by the London County Council, and adopted generally by the various Borough Councils. The by-laws of 1901 aimed at installing a more general and uniform method of laying drains and fixing pipes and fittings. Those of 1903 dealt with the question of applications, deposit of plans, and urgency.

Twelve years have passed and still uniformity has not been achieved, although something has been done towards that end; and a great and wonderful improvement in the sanitary condition of house property has resulted.

I have always held the opinion that these by-laws were made for the amplification of the Act of 1885 under Section 202; and, as I have before stated, their chief aim was uniformity of practice. But instead of the sanitary inspector taking these by-laws as his guide and authority, what have I experienced? I have been told by a sanitary inspector that his department had taken counsel's opinion, and held the view that their powers went beyond these regulations—they merely represented the least they could ask for—whilst another official has to my knowledge seriously expressed the opinion that he could demand that a silver soilpipe should be fixed if he deemed it necessary, giving as his authority Section 76 of the 1855 Act.

And now for a few personal experiences as to how the by-laws are sometimes administered. It has been seriously suggested that a gravelled path is a paved surface, and as such must be drained by means of a trapped gulley and a drain constructed in all respects as one intended to convey soil and contaminated matter. Enlarging upon this subject, I was staggered when I learnt that the paths surrounding a garden may not be drained by means of four-inch earthenware pipes jointed with cement and with trapless gullies connected thereto at intervals, the whole discharging above the water-seal of a gulley which took the surface water of a small area and was properly connected to a manhole. No, the aforesaid gullies must all be trapped, and the head of the garden drain must be ventilated by means of an up-cast shaft exactly as in the construction of a soil drain. The above matters came up in regard to work being executed in one of the Metropolitan boroughs. In another borough the exact opposite has been held; and, not only so, but the feet of rainwater pipes were connected to earthenware shoes, which were branched into a drain emptying above the water-seal of a trap; in this case no ventilating pipe was even suggested.

While speaking of draining paved spaces I should like to describe one case which came under my notice. A small area of about 3 feet by 1 foot outside a window had a paved surface. This area was more than covered by a projecting landing beneath the window immediately above. I was told by both the chief and the district sanitary inspectors that I must drain this area notwithstanding the fact that the refuse in the area—consisting of leaves and dust—was bone-dry, in spite of some recent very rainy weather. To do so would have meant laying about 24 feet run of drain averaging about 4 feet deep. I collected the refuse in the presence of witnesses, told the chief inspector I had done so, pointed out to him the absurdity of his request, hinted at possible danger to health due to the evaporation of the contents of the gulley, which would then form a ventilating opening to the drain immediately beneath a window, and asked him what new regulations had been passed since a similar area was left undrained in 1903. When he suggested that his committee would probably take some steps to enforce the work he had suggested, I asked him to waive all unnecessary preliminaries and let me have the summons at once. I never received it.

I was upon one occasion a good deal annoyed, but at the same time much amused, by a request made to me by an inspector regarding the by-law relating to concrete under drain pipes. I ought to tell you that the inspector was acting for a colleague who was away upon his holiday. The drain was of four-inch stoneware outside the house, and laid upon 6 inches of cement concrete, 18 inches in width, and properly benched up half its diameter. The water test had been applied, and all was ready for filling in when the official made his request, this being that, in order to comply with the by-laws we should embed the drain pipes in concrete, so that they would be covered with a layer of this material equal in thickness to not less than half the diameter of the pipe. The inspector was quite serious, and told me that this question was now receiving the consideration of sanitary inspectors. But he added, of course, if the medical officer was satisfied with the hitherto accepted meaning of the by-law he had nothing more to say. I hardly need say that the medical officer was satisfied.

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* **Abstract of a Paper entitled "A London Builder's Experiences with Sanitary Officials in the Metropolis," read before the Institute of Sanitary Engineers, at Caxton Hall, Westminster, on May 11.**

I have been up against it also with respect to bath and lavatory waste pipes, and here, as in many other instances, I contend that sanitary officials can do their work and see that by-laws and regulations are enforced without being arbitrary, unreasonable, and arrogant. I was, during 1911, entrusted with the drainage and sanitary work at a house, and in due time prepared a plan and sent it in duplicate to the medical officer, together with applications and particulars. After consultation with an inspector on the premises one or two modifications were made. Upon his next visit to the job a length of two-inch rainwater pipe had been temporarily placed in a position where it was to be fixed as a bath and lavatory waste-pipe, and, acting upon my instructions, the foreman of the job called the inspector's attention to the pipe as being the kind I was fixing. "That won't do," said the inspector; "it must be of heavy L.C.C. pipe." (In my particulars I had specified two-inch cast-iron pipe of weight and quality known as "rainwater," and to be jointed with red lead.) The by-laws are, in my opinion, very clear on this matter. In Clause 10, 1901, we read that "every pipe in such building for carrying waste water from every lavatory or sink (not being a slop-sink or urinal constructed or adapted to be used for receiving any solid or liquid excremental filth) to a sewer, to be constructed of lead, iron, or stoneware." Here one has the choice of three materials; nothing is said as to sizes and weights. At least, such was my contention; but my friends the officials argued otherwise, their idea being that they alone decided what material may be used. I asked by what by-law they considered they were given the power, and was told they went, beyond the by-laws, to the Act of 1855, which gave them that power. Needless to say, I attempted to argue the matter with the inspector, and finally told him that I intended to fix the rainwater pipe as a waste pipe and did so, after having suffered a good deal of delay in the progress of the work. The approval of my plan and details with the pipe as fixed ultimately came along.

At a later period—last year, in fact—this waste pipe again became a bone of contention. My client wished to have a sink fixed in the room above the bath, and I informed the medical officer that I was doing this, detailing that it would be trapped and ventilated and connected to the existing light iron waste pipe. Then the fun commenced. In acknowledging my letter, the medical officer told me that I must deposit the necessary plan and forms for the committee to consider before proceeding with the work. This was on July 5. I was told upon the telephone next day that the chief inspector said it would be necessary to connect the sink to a heavy iron waste pipe. I reminded this official that the existing pipe was fixed and passed by him in 1911; he replied it was fixed whilst the Council was in recess. I did not retaliate, as I might have done by asking why the responsible officials then connived at a contravention of the by-laws? I then sent plans and particulars, and wrote at length to the medical officer of health telling him I could not agree to the chief inspector's request as to a heavy pipe being substituted for the existing sound pipe, and asked that as it was a matter of urgency he should, without prejudice, have the fixing of the sink and its connections examined, leaving the matter of the pipe to be settled later, when the opinion of the committee was known, adding we should feel obliged, and it would be interesting to know under what Act and Section the heavy pipe was asked for. I received a lengthy reply telling me that there was little doubt that I knew the answers to all the questions I had asked, but chapter and verse were given--viz.: "The statute and section governing the composition, material, form, and workmanship of drains and their branches is the 'Metropolis Management Act, 1855,' Section 76, which gives the sanitary authority the right to determine the description of the pipe." The remainder of the letter is very interesting, and I give it in full: "I would like to emphasise in this matter the fact that you have not been asked officially to substitute one pipe for another at all. I understand that the substitution of a heavy pipe for a light one was suggested to you by the senior sanitary inspector; and he was right, because it would have been better workmanship and more in conformity with the by-laws in force in this borough. The people, however, who determine this matter are the committee before whom your plans come; they decide upon your plans and application, but they cannot decide upon an urgency notice, only upon the plans as demanded by the by-laws. I think it possible—nay, even probable—that they will pass the plan that you have just submitted, but should they do so I consider it would be an unfair statement to make that because they pass a plan with light iron pipes in one case it should be construed as a precedent and used against them at any future time."

Next I was informed that my application had not been approved by the Public Health Committee on the ground that the waste pipe was shown to be of light iron, and I was invited to call at the office and amend my plan and application. The sink had already been fixed and the job completed seven days previously, but no one had been to examine the work. I did not accept the invitation, and on October 4 I received the news that my "application had been approved by the Council."

I could go on and tell you of other cases. One where after notice had been served to abate a drainage nuisance plans and particulars of reconstruction were sent in, but a small amendment being suggested to which the builder disagreed, he was informed that if he did not comply and get on with the work the urgency notice he had sent would be ignored, and no inspection would be made until the statutory fifteen days had elapsed—this, in spite of the fact that the work was being done wholly and solely through the serving of their notice to abate the nuisance.

No doubt many of you have experienced similar difficulties, and we shall continue to do so while the officials arrogate to themselves powers which I for one contend they do not possess. This statement is, I venture to say, fully borne out by what I have previously said with regard to the bath waste pipe Here an inspector made a certain request; it was backed up by the medical officer and Public Health Committee, all of whom ignored the by-laws entirely, and in doing so exceeded their legal powers, as was proved by their not enforcing their demand.

I have heard it said by a builder of repute that in one district he approaches the Public Health Department with trepidation every time he has a job in their borough, feeling sure that whatever plan and method he submits will meet with adverse criticism, accompanied by harassing and overbearing suggestions.

Surely it would be better to allow a small voluntary work of improvement to be made to a house, such as replacing a defective or out-of-date w.c. apparatus with one of better construction, than to place an embargo upon such work owing to the fear that if this particular w.c. is fixed an entire system of new drainage may result from the action taken by the authorities. I am not by any means advocating the retention of insanitary fittings and unsound drainage, but most of us, I take it, agree that the opposite view, when carried to an extreme, as it sometimes is, is unreasonable, vexatious, and arbitrary. I do not quarrel with sanitary officials demanding that the by-laws should be complied with, but what I do object to is the attitude of bluff which some of them adopt in the enforcement, where they can, of regulations and practices in force in their particular borough not always in accordance with the by-laws.

BOYS IN THE LONDON BUILDING TRADE.

A paper has been issued by the London County Council containing a report by Mr. J. C. Small, organiser of Trade Schools for Boys, on "The Training and Employment of Boys in the Building Trades in London." Mr. Small's report was considered by the Higher Education Sub-Committee of the Council in June 1912. At that time it had been possible to prepare the memorandum on the Census returns of 1911 through the courtesy of the officials of the Census Office. The particulars were confidential and proved of great value to the committee in dealing with the questions arising. The general Census returns of occupations for persons in England and Wales have now been published, and it is thought desirable to make the report public in the form in which it was presented to the committee. The report is a long one. We give below such extracts as deal with the subject in a general way, and which are but little affected by the lapse of two years since they were written.

A number of proposals having been submitted to the Council relating to this matter, it was considered desirable to report on these together, as the questions arising are closely interconnected. It was also thought that any recommendations put forward should secure a possibility of the problems likely to arise in the future being dealt with in a fairly comprehensive manner without serious overlapping as regards distribution of schools in the Metropolitan area. The proposals calling for settlement were:—

1. The apprenticeship scheme of the Institute of Builders, submitted on February 7, 1911.
2. The report of the London Association of Master Decorators, submitted on December 20, 1911.
3. The proposals for the reorganisation of the building department in the Northern Polytechnic, submitted on March 11, 1911.
4. The proposed scheme for a building trades school at Hammersmith.
5. The suggested formation of consultative committees in connection with the building trades.

The whole subject of apprenticeship and training for the building trades has received much consideration from time to time, but it cannot be said that any material advance in the adoption of systematic methods of employment and training of boys, whether as apprentices, learners, or improvers, has been made in the last twenty years. The underlying motives which have stimulated inquiries and brought out new schemes, whether by masters, workmen, or educational authority, have undoubtedly been the realisation of the unsatisfactory policy of drift as it affected the London boy and the desire for a regular supply of well-trained and competent workers in each branch of the trade.

The spirit of unrest in the building trades, created by the adoption of new methods of construction, the utilisation of new materials, and the increasing use of highly specialised machinery, has been accentuated during the past few years by the severe depression following a period of great prosperity and abundant employment. The seasonal variations of this industry from month to month must not be confounded with the periodic variations occurring over a number of years, and following, with a certain fairly definite lag, the course of national and local prosperity. The culmination of these causes in a year of acute depression such as 1907, when the percentage of unemployed trade unionists in London building trades reached in one month 13.7 per cent., and never fell below 5.4 per cent. in any month, is bound to produce a reluctance on the part of those connected with the industry to recommend anyone to enter it as a means of livelihood, and incidentally to produce a marked effect on the efforts made to provide technical instruction for the workers, which is traceable in both teachers and students when the immediate industrial horizon is heavily overcast.

The search for other work and the calls upon charitable organisations by workers in the building trades are, in consequence of the regularly occurring annual seasonal depressions, likely to be more noticeable than in any other occupation, and the figures given show how largely the building trades bulk in the applications for assistance received by the Central (Unemployed) Body for London.

Inquiry has been made from different sources as to the number of apprentices employed, but it is not possible to arrive at even an approximate figure, and those most intimately connected with the trade are quite unable to supply any kind of numerical statistics.

Mr. F. Oldman, in a report dated 1895 on apprenticeship in the London building trades, stated that the number of recruits entering as apprentices was very small indeed, his inquiry having revealed only eighty apprentices among a total of 12,000 men, including labourers. The Apprentices' Institution proposed about the same year died from lack of support.

Four years later a special sub-committee of the Technical Education Board reported that the technical institutes did not afford an avenue by which a boy could enter a trade, but only provided an amelioration of his condition when he was already in it, and failed as a means of recruiting the trade in London. This committee noted a general tendency to discontinue the employment of boys in any capacity.

In the section on "Building Trades" in "Life and Labour of the People in London" (1903), the following summing up is given by Mr. Charles Booth:—

It seems probable that for some time to come the large majority of masons, bricklayers, carpenters, and joiners, and probably plasterers, who work in London will be found to have received their early training in the country. But with increasing facilities for technical instruction, and increasing willingness of parents to put their sons into some manual trade, the proportion trained in London in some fashion will probably tend to increase, and the future method of their trade instruction is well worth consideration. Of systematic training in a single shop, such as would be ensured to an indentured apprentice, well placed, there will probably be but little, for the apprenticeship system would seem to be not only dormant, but dead.

The character of London work, the great amount of division of labour made possible by the extent of the London market, the unwillingness of the London employer to incur the trouble and responsibility of apprentices, the prejudice that is widely spread among artisans in favour of the more casual system of learning as improvers, with the freedom that is thus secured to move from shop to shop, as well as the power, to those smart enough, to earn early in life more than the nominal apprentice's wage, the constant training and improvement in intelligence of the ordinary labourer and the consequent impossibility of restricting admission to the trade to those duly apprenticed—all these reasons militate against the revival of any general system of apprenticeship in the building trade of London.

The most recent inquiry was conducted by Mr. Ernest Aves for the Juvenile Advisory Committee of the Board of Trade in February and March 1911. During the whole or part of this period four investigators were engaged in the work, and over 400 employers of all grades were seen. The inquiry was conducted primarily with reference to juvenile labour in connection with the building trades.

The following general conclusions are worthy of note:—

1. The building trades are free, on the whole, from the competition of products introduced from external sources of supply, and thus to a great extent from external competition in any form.
2. They form the largest group of industries in London, and are connected with the supply, whether in the form of dwelling or business accommodation, of that which ranks among the primary requirements of life, in connection with which, moreover, partly through legislation and municipal administration and partly through more general causes, the demand is tending constantly to change and rise.
3. Most of the separate occupations demand a considerable amount of skill, while those that rank as skilled at all require, at least in their highest branches, much skill, and thus for their mastery thorough training.
4. As a group, the occupations rank among those which are the more highly organised, and in which, speaking generally, recognised and relatively favourable conditions as regards wages and hours of labour prevail.

These considerations make, roughly, for the economic strength, and thus for the advantageousness of this group of occupations. There are, however, other considerations which tell in the opposite direction, and among these the following may be mentioned:—

1. Employment in some branches of the trade is apt to be unusually precarious, owing largely to a normal seasonal irregularity in the aggregate demand, and also to the rapidity which the amount of work in hand by the individual employer, be he master builder or specialist, tends to change in volume. It is thus an occupation in which special vigilance is apt to be required to secure continuous employment.
2. Although rarely in any sudden and unusual degree, building occupations are, nevertheless, in some cases liable to displacement by the use of new material in construction, by the fresh uses to which old materials are put or by fresh combinations adopted, by machinery, and by changes in fashion.
3. Over wide areas in the county of London building extension has finished, and with it much of that particular kind of demand which is peculiar to a young and expanding centre of population.
4. The great activity and prosperity of the building trades during the closing years of the last century, culminating in 1900, when the number of operatives in the building trades rapidly increased, has been followed by a period of comparative slackness, if not of positive depression, during which it has been difficult for the new members of the trade to be satisfactorily absorbed, and during which, therefore, there has been an unusually small number of openings for fresh learners.
5. A large supply of provincially trained labour is apt to be available at any time when London conditions create fresh openings.
6. The kind of labour that the London building trades require, largely because of the quick work and the specialised skill that are demanded in the metropolis, tends to make it difficult for the London boy to start in most of them.

It is clear that an accurate balancing up of the relative advantages of the building trades as an avenue of employment for boys is not possible. The factors involved are too many and too complex, and any particular generalisation must be subject to exceptions.

The following particulars which are relevant to the question of apprenticeships are quoted:—

Periods of Probation.—When boys are occasionally taken on from the outside with a view to apprenticeship or even definitely as learners from the outset, there is generally a period of trial, ranging from a fortnight to three months, the most usual being one month. An informal period of probation is, under existing conditions, much more frequent, boys being often employed on indefinite non-technical work for a year or so to begin with, those who by their behaviour have then proved themselves "likely" boys being sometimes selected for actual craft-training at the bench or in the yard. Throughout every branch of the trade formal apprenticeship is the exception.

Premium.—Premiums range from nothing to £50. (£75 and £100 are paid in some cases.) The larger amounts may be accompanied by special training and the assumption of a special responsibility for the boy, but without any guarantee that this will follow, are mainly paid to the firms of good standing that are willing to take one or more apprentices, and by custom have put their premium at a high figure. In such cases an asset of value in after life is, however, generally obtained, a genuine apprenticeship passed under certain firms being an initial guarantee of competency.

The higher rates are rarely paid by parents themselves, and whatever the scale of payments adopted it is generally lower in the case of boys who are the sons of employees of the apprenticing firm.

It is probable that the scale of premiums, when these are paid at all, is somewhat inflated owing to the funds and endowments available in London for apprenticeship purposes, and it appears to be not infrequently the case that boys who are inmates of charitable institutions of one kind or another obtain an advantage as regards the chance of being apprenticed that is sometimes disheartening to parents who have brought their own children up.

Other things being equal, the entry of the boy into any branch of the building trades is likely to be most difficult in those parts of London where working room is most valuable, as in the City of London; or in firms whose work is most uniformly of the highest grade, as in the case of decorators with an exclusively West End connection.

Out of 431 returns from employers in the building trades obtained for the purposes of this inquiry and analysed, less than half included any boys. In different occupations the proportion of boys to adults varies, there being more juveniles, for instance, among joiners and plumbers than among bricklayers and masons; but London employers in the building and allied trades as a whole absorb far less than their proportionate share of boy labour. The chief and perhaps the only exception is found in the case of plumbers.

The London master builder falls into four main classes, affording a rough indication of the direction in which the opportunities required for the satisfactory learning of a trade are or are not likely to be found. The classes are as follows:—

1. The builder or contractor of good standing mainly or largely engaged on new contract work.
2. The builder of good standing mainly engaged on the work of repairs and renewals. This class will include the better grades of jobbing builders.
3. The builder or contractor mainly engaged on new work of a speculative character.
4. Small jobbing builders.

The firms most likely to be suitable for training boys will fall almost entirely in either class 1 or 2, but the firms with the largest plant, or those undertaking in some branches of the trade the highest class of work, do not for various reasons necessarily provide the best or most hopeful training grounds.

It may be pointed out that the more systematic and efficient training of a number proportionate to the calculated requirements of a trade would not weaken the competitive position of its present members, although an ill-regulated influx as has been experienced in the past would undoubtedly tend to have that effect. It must be remembered that an understocked labour market tends not infrequently to have the same weakening influence, although more gradually and in ways less easily distinguished.

The agencies engaged in apprenticing boys to suitable trades do not strongly favour entry into the building trades owing chiefly to the prospects of irregularity in ultimate employment. The National Institution of Apprenticeship during the period 1905-10 apprenticed 857 boys to different occupations; of this number 46 were put to different branches of the building trades as follows: Bricklayer, 1; builders' clerks, &c., 3; carpenters and joiners, 17; decorative designer, 1; marble masons, 11; marble polishers, 3; painter, 1; plumbers and gasfitters, 8; sign writer, 1.

The Lads' Employment Committee, in their report for 1910, state that of 1,138 lads placed since 1907 482 were known to be employed in the situations found, and of these eight were engaged in building, decorating, wall paper, and painting (three technical, two clerical, and three general).

The Apprenticeship and Skilled Employment Association placed twenty-four and twenty-two apprentices respectively in the building trades in 1910 and 1911 out of 683 and 613 in all.

The London Master Builders' Association and the Institute of Builders state that they have no figures at their disposal to estimate the number of apprentices and improvers in the London district.

It is quite clear from all the sources of information available that the number of apprentices is exceedingly small. Firms are found which have a regular system of apprenticeship, but very few apprentices.

The examination of a number of school-leaving forms shows that very few boys enter directly on leaving school into any branch of the building trades. It is also very evident that in many cases boys at fourteen are too small to secure work in any branch of the building trades.

The following figures show the numbers of boys and young persons at different ages who were employed in London in 1901:—

	Under 15.	From 15 to 20.
Building and Works of construction	721	12,539
Builders	19	274
Builders' labourers	32	666
Carpenters and joiners	224	3,610
Bricklayers	40	1,103
Bricklayers' labourers	23	845
Masons	35	472
Masons' labourers	—	74
Slaters, tilers	5	110
Plasterers	29	593
Plasterers' labourers	6	97
Paperhangers, whitewashers ...	13	233
Painters, decorators, glaziers ...	105	1,709
Plumbers	138	1,915
Gasfitters	27	509
Locksmiths, bellhangers ...	8	53
Others	17	276

The approximate total number who should be employed between the ages of fourteen and fifteen in each trade if there were a normal entry to the trade at the present school-leaving age of fourteen is 2,508. The figures show clearly that for 71.3 per cent. the trade-beginning age is higher than the school-leaving age by at least one year, and quite possibly by more.

The Board of Trade Returns to the House of Commons (1899) showed that the percentage of children in London entering building trades was: West, 4.6; north, 2.2; east, 2.6; south, 3.9, or an average of 3.3 per cent. The total number of male persons engaged in occupations in London in 1901 was 1,399,969, of whom 149,962 were engaged in building and works of construction, or 10.7 per cent. It is evident that 7.4 per cent. of the total population in London either join the building trades after some intermittent occupation, or that they are supplied by immigration.

The statistical officer estimated in 1908 that the number of actual entrants to the building trades, omitting labourers, based on the age groups 15-20 years was 2,096 annually.

A general estimate can only be made in a very approximate fashion of the number who should enter each section annually on the assumption that London supplied its own tradesmen, or that London produced such a number annually that the outflow by emigration and migration balance the immigration.

The unsatisfactory features of the building trades cannot be overlooked, and the particulars given below are set out with a view to showing this side of the case. Every consideration tends to show that the seasonal character of the trade and the fluctuations dependent upon general prosperity are unavoidable, and will continue to give an unsatisfactory character to building employment, but it does not therefore follow that it should be shunned as an avenue of employment or restricted in its possibilities of suitable and adequate training. The field of employment is very wide, and must absorb annually many workers; the better trained they are the better their ultimate prospects, and the weakest will surely suffer ultimately, not only from the competition of their own comrades, but from the competition of the well-trained and physically robust provincial men. It is hoped that boys who have had such a course of instruction as that provided at the Brixton School of Building in the day department, followed by workshop practice and supplemented by evening class instruction, will be fitted to hold their own with the best provincial trained workers.

The fifth report of the Central (Unemployed) Body for London, 1910-11, gives the following particulars of applicants registered classified as belonging to building trades:—Skilled, 4,175; unskilled, 4,150; proportion of whole number registered, 33.0.

Provision of assistance for above employed on colony works, 764; emigrated, 344; migrated, 18.

For all applicants (men) percentage provided with work in 1910-11 = 17.2, of average duration of eight to nine weeks.

Building trades: Percentage found work or emigrated = 13.5, *i.e.*, less than the average for all trades.

The greater part of the emigration (in 1911) has been to Australia (1,213), Canada (201), New Zealand (132), and South Africa (five); but it is not possible to say where the building portion of the emigrants have gone. The secretary of the Amalgamated Society of Carpenters and Joiners states that many of their members have emigrated to Australia in the past two years, and that the youngest and best craftsmen are always those selected. Work is guaranteed, but careful selection is made and five references are required. The exact amount of emigration of skilled tradesmen is, however, an indeterminate factor.

Wages in London.

	Rate per Hour 1886 d.	Rate per Hour 1912 d.
Masons	9	10½
Bricklayers	9	10½
Carpenters and joiners	9	10½
Plasterers	9	11
Plumbers	10	11
Painters	8½	8½-9
Masons' labourers	6	7
Bricklayers' labourers	6	7
Plasterers' labourers	6	7

The summer hours of labour were in each of the above trades 52½ and 50 respectively in the same years. The one exception were the plumbers, who were worked for 47 hours in 1886 and 47-50 in 1912.

The rates of pay in London are the highest of those paid in the United Kingdom; in many districts the rates paid now are less than those in force in London in 1886, but the London rates were in 1886, as now, above those paid elsewhere. While the hours of labour are not the lowest, they are lower than the average. A young journeyman's whole status and capacity is summed up to the trade by his "rate per hour," and his entry to the trade union is generally determined by his ability to earn the standard rate of wages of the district. It is little wonder, then, that London should be the Mecca of the provincial trained tradesman, that he should long for the day when his apprenticeship will be completed and he will be free to voyage to the land of promise, not only to earn higher wages, but to taste the pleasures of the city life of which he has doubtless heard much. The increased cost of living, the higher rents, the time and money spent in travelling—these things he learns later, when he is perhaps less free to move about.

The questions which are of importance are (i.) whether an adequate number of London boys enter the building trades, and (ii.) whether they have reasonable chances of learning their trade thoroughly, so as to ultimately secure a good living.

In regard to (i.) the evidence goes to show that boys are forthcoming for most vacancies offered, and that the supply of boys is adequate for the openings offered, but it seems clear that there are not sufficient openings afforded.

The opinions in regard to (ii.) vary very much, but the great majority of evidence is against the possibility of the average boy learning his trade thoroughly in London.

The need of some definite action tending to improve the prospects of the London boys pointed out so long ago as 1895 has been met in part by the provision of the building school at Brixton, and the very useful work being accomplished there tends to show the lines of future development so far as the policy of an education authority is concerned. The duty of training the skilled workers of the future is likely to fall more and more on the education authority, if the London boys are to secure their due chances of entering the building trades, but the full development of any scheme of training must necessarily depend upon the frank co-operation of employers of labour and workers with the education authority. The proposals put forward by the Master Decorators' Association in this connection seem particularly well planned, and, if carried through, will create a valuable precedent for future action.

The return showing the homes of pupils in attendance at Brixton day school for the session 1910-11 brings out the following facts:—

Total number of students	102
Number residing south of the river	90
Number residing north of the river	12

Of the twelve residing north of the river, eleven were scholarship holders and one fee-paying.

The proposals which follow are based upon the idea that three building schools are called for, and should be provided in the London area—(1) Brixton (existing), (2) Northern Polytechnic, and (3) Hammersmith. Each of these schools will have a definite area of operation, which would not interfere with the work of any one of the other schools, and would have a clearly defined population engaged in the building trades operations from which to draw its pupils.

The accommodation which is required in each case is for at least 150 pupils in the day trade schools, and each school should provide a three-year course of instruction for pupils of the general age range of 13+ to 16+. In this way each school might aim at turning out fifty students per annum, or a total of 160 per annum in all—a number which, in view of the figures quoted, viz., an actual estimated entry annually into the building trades of 2,096, can only be regarded as a very partial attempt to deal with the general problem. The school at Brixton was founded in 1908, the school at Hackney, which it is proposed should be transferred to the Northern Polytechnic, was founded in 1910, and the school at Hammersmith should be open in 1914 or 1915. It will thus be seen that the full number of students—150 per annum—will not be available until 1917 at the earliest.

In connection with these schools provision is at present made for twenty scholarships annually at Brixton, and ten scholarships annually (in building) at Hackney. It is suggested that the number at Brixton should be increased to thirty, that the ten at Hackney should be made tenable at the Northern Polytechnic, and fifteen additional scholarships granted there, and that, when the school at Hammersmith is opened, thirty scholarships annually should be allocated there.

This will bring about the total award of eighty-five scholarships in building annually after 1917 or 1918, or a total of 255 spread over the three years' course; allowing for lapsed scholarships, due to boys leaving to secure employment, and to other unavoidable reasons, it is not expected that the number actually held will generally exceed 225, or half the accommodation provided in the three schools. Half of the places will thus be available for fee-paying students, and, should the demands increase on these schools, additional numbers can be taken in without seriously altering the accommodation already available, and now suggested to be provided.

The main factors which are kept in view in making these recommendations are:—

(1) The building trades provide, and must necessarily continue to provide, one of the main avenues of employment in London.

(2) An insufficient number of boys drawn from the London population at present enter the building trades.

(3) Of the actual annual entry, many are precluded from beginning their training at a suitable age, owing to the modern conditions of work, the attitude of employers and men to beginners, and the physique required.

(4) The impossibility generally of a thorough training being secured in workshops in London is known.

(5) The desirability of at least partially bridging the gap between the school-leaving age and the trade-beginning age is generally recognised.

(6) It is the duty of the education authority to provide suitable preliminary education for definitely recognised avenues of employment.

THE Metropolitan Water Board have approved drawings prepared by the chief engineer of pumping-station buildings at Shortlands. In view of the residential character of the neighbourhood, the buildings are to be carried out with Kentish rag-stone facings, in conformity with the existing pumping-station buildings. Messrs. W. T. Farthing & Son have been instructed to take out the quantities in connection with the work.

THE TECHNIQUE OF GLASS PAINTING IN MEDIÆVAL AND RENAISSANCE TIMES.*

By JOHN A. KNOWLES.

I FEEL a certain amount of timidity in addressing you on the subject of Mediæval and Renaissance technique in glass painting, this branch of the study of old glass being an almost unexplored region; for, with the notable exception of an important paper read before this Society by Mr. Noël Heaton, which has since been freely quoted by recent writers on the art, the technical side of the subject has been more or less neglected.

It will be impossible to deal fully in the time at my disposal with the whole technique of glass painting, so I shall confine myself to three questions only: The composition of the vitreous "enamel brown," or "colour," as it is termed by glass-painters, with which the outlines, tones, and shadows in a glass-painting are produced; what was the material called "geet" mentioned in mediæval lists of materials for glass-painting; and how the black outlines and washes of brown enamel were held to the glass whilst succeeding coats of enamel were passed over them without their being washed off the glass.

There are two kinds of vitrifiable enamels used in glass-painting. The first consists of a metallic oxide, simply mixed with a powdered and easily fusible glass, or flux, as it is termed; at the heat of a glass-painter's oven, and less than what is required to melt the glass upon which the pigment is to be painted, the flux fuses, and unites the particles of oxide to the surface of the glass, just as the size in whitewash attaches the whiting to the ceiling. This kind of enamel is exclusively used in the mosaic system of glass-painting, where the colours of robes, &c., are obtained by cutting them out of glass already coloured in the manufacture. The second kind is used to obtain upon glass (for instance, white, *i.e.* colourless, glass) a colour it does not already possess. In this kind the oxide has been previously dissolved in the flux by a strong heat, so as to colour it, say, blue; but as I do not propose to deal with this side of the subject we need not go further into the composition of these coloured enamels. The first kind are nearly all opaque, and whilst some of them possess some slight colour when seen by reflected light, through obstructing the passage of light, where they have been painted on the window in a solid manner they appear black. These, then, consist of a flux and an oxide only, and it is the composition of the flux and the several oxides used at different periods which we have to consider.

The earliest recipe we have for making a vitrifiable enamel for painting glass is given in chapter xix. of the second book of the "Treatise of Theophilus." There has been much dispute as to the date of this manuscript, but authorities seem agreed that it is not later than the twelfth century.

The recipe is as follows: "Take copper beaten small and burn it in a small iron pipkin until it is entirely pulverised. Then take pieces of green glass (*viridis vitri*) and Greek sapphire and pound them separately between two porphyry stones. Mix the three ingredients together in the proportion of one-third powder, one-third green glass, and one-third sapphire. Pound them very carefully on the same stone with wine or urine, put them into an iron or leaden vessel, and paint the glass with the utmost care according to the strokes which are upon the board"—*i.e.*, the cartoon.

We have here three constituents—copper oxide, green glass, and a material which Theophilus calls by the name of Greek sapphire. This green glass was the flux, and was, moreover, very fusible. In chapter xxiii., where he gives instructions how to fire the glass after it is painted, he says: "Lay upon it (*i.e.*, the iron tray on which the glass is to be fired) the painted glass carefully; so that the green and sapphire glass may be laid on the outer part near the handle and on the inner part the white, yellow, and purple, which are harder and resist the fire (longer)." Again, in chapter xxx., entitled "How a broken glass vessel may be mended," he directs the operator to join the fracture with a vitrifiable enamel composed of "sapphire and green glass, which should be made to liquefy very slightly by the heat of the fire." He then directs that the fracture shall be painted with this after being ground up with water on a porphyry stone and the vessel fired in the furnace for windows.

This translation is according to that prepared by Winston and given as an appendix to his "Hints on Glass Painting," but there is evidently a mistake in translation in this last extract, it being impossible to fuse slightly and then grind the enamel in water as directed. On comparing this with the original text I find this to be the case, and that the transcriber has evidently mistaken the adjective in its contracted form for the adverb—"*levissime*" would give the correct meaning: "which should be made so as to fuse by the heat of a very gentle fire" (*flammæ levissime*); not, "which should be made to liquefy very slightly by the heat of the fire."

It would have been unnecessary to bring forward this instance (though the statement alone that the flux would fuse at the heat of the glass-painter's furnace is in itself conclusive) were it not that there are many more instances, without having to take refuge in the lost chapter which treats of lead-glass, the usual resource of those in difficulties with Theophilus, which corroborate the evidence that the green glass of Theophilus' time was of a soft nature, and therefore specially applicable to be used as a flux for glass-painting to bind the oxide to the glass surface, as it would fuse at a lower temperature than most of the glass on to which it would be painted.

One of the chief reasons why it possessed the advantage of a low point of fusion, thereby enabling it to be used as a flux, was the fact that it was in composition a lead-glass; whilst we know from the first chapter of Theophilus' treatise on glass-work that the glass upon which the enamel was to be painted was a potash-glass. This would, therefore, account for the greater fusibility of the green glass. In chapter xxxi., which treats of the manufacture of glass rings, he says: "Take ashes (*i.e.*, potash), salt, powder of copper and lead." This glass would be green. The oxide of copper produced from the time of Theophilus to the present day, "*aes ustum*," as it is called in the old recipes, was made by stratifying plates of copper with alternate layers of sulphur in a crucible. This produces the cupric oxide which gives a green colour to glass. But Eraclius (thirteenth century) is very definite in his statement that green glass was a lead-glass, and that it was used as a flux. He says: "How glass is made from lead: Take lead very good and clean, &c. . . . But if you wish it to be green, take filings of copper (*aurichalcum*) and put as much as you think fit to the glass made from lead." And in Book III., chapter viii., he says:—

"How glass is made from lead, and how it is coloured," and after describing the process of making glass with two parts of lead oxide and one of sand, and colouring it green with cupric oxide, he continues: "You may if you like mix some of this leaden glass with a grossinum of sapphire for painting on glass, adding to it one-third part of scoria of iron. And this pigment is to be ground on an iron slab." Again, in chapter xlix. of the same book he says: "I must tell you how to paint upon glass. Take a grossinum of sapphire, and the scales which are beaten off red-hot iron upon the blacksmith's anvil, and you must put one-third of this with the grossinum, and mix it with lead-glass (*i.e.*, Jewish glass) and grind it well on an iron slab, and so you will be able to paint."

The other Eraclius, commonly called pseudo-Eraclius, speaks of "*plumbeum vitrum Judaeum scilicet*," which is to be ground on a slab and used as a flux for painting on glass. And the writer of Harl. MS. 273 (c. 1300) says: "If anyone wants to paint vessels of glass, let him choose two stones of red marble between which he can crush up Roman glass" for use as a flux.

In mediæval times, up to the end of the Decorated period at any rate, much of the green glass was produced from cupric oxide, to which its characteristic cold and bright bluish tint is due. An instance where the use of this cold and bluish-green is used in contrast with the other yellow or olive-green glass will occur to many of you in the "Peter de Dene" window in the nave of York Minster.

Eraclius and the pseudo-Eraclius both call this lead-glass "Jewish glass." We know there were Jewish glass-workers in Constantinople between 531 and 565 A.D., from the account related in the "History of the Jews" of the Miracle of Our Lady saving the life of a Jewish glass-worker's child, whose inhuman father had thrown him into his glass-furnace. Moreover, Benjamin of Tudela, whose travels bear date from 1160 to 1173, states that he found hour hundred Jews resident in Tyre who were glass-workers. These references do much to strengthen the belief in a Byzantine origin for the art of glass-painting, taken in conjunction with that from the Chronicle of Leon, Bishop of Ostia, who relates how the Abbot Didier, in 1066, sent to Constantinople for workers in mosaics and glass, and that in Filiasi, who says that as early as 687 A.D. many Greek workmen went to France for the purpose of working in glass. We know from Theophilus' preface to his first book that he learned the processes of glass-making and painting in France, and it was no doubt from Greek workmen, as he is loud in praise of their work, and devotes no less than four chapters to describing how they made glass drinking-bowls, and enamelled them with coloured enamels, mosaics, and many other things; he is also particular to mention (in chapter xiii.) that they made the flux for attaching gold leaf to glass, which "melts as soon as it feels the heat of the fire," themselves. Although the flux recommended for use in stained-glass work by Theophilus and Eraclius was in general green, yet the former author mentions others for different purposes. The one for covering gold for mosaic work was colourless, as we should expect, whilst those for enamelling on earthenware were each of the particular colour of the oxide with which they were to be ground up. These enamels would all be opaque, and they were to be fired in the furnace for windows, and therefore easily fusible; and this point of the mediævals being able to make a flux of any colour, and also, I may incidentally remark, that could be fused at any given temperature, we shall refer to later in considering what "jeate" was. We have only now to consider the last of the three constituents which were to be mixed in equal proportions to compose Theophilus' enamel for glass-painting—the material he calls "Greek sapphire." Now, it is not always possible to identify a substance in a mediæval recipe by the name it is called by, as they were in the habit of calling many blue substances "sapphire" or "azure," so that we can only determine what they were from our present-day knowledge of the composition and properties of the several oxides, and so forth, with which a blue or other colour can be produced.

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* **Extracts from a Paper read before the Royal Society of Arts.**

As an instance relating closely to the subject we are considering I may cite Theophilus, who calls the substance to be mixed with the iron oxide and flux, sapphire; whilst Eraclius, who gives three recipes—two for glass-painting and one for painting on earthenware—calls it sapphire twice and azure once, which goes to emphasise the point I wish to make here, which is that azure, sapphire, &c., were names used throughout mediæval times, not to denote any particular substance with definite chemical properties, but merely something which was blue.

Many more instances of this naming of any blue paint sapphire, azure, &c., indiscriminately by ancient and mediæval writers could be brought forward. We can then only arrive at a true conclusion as to what a substance could be by our knowledge of the conditions under which it was to be used, what different pigments are actually known to have been in use from analyses of ancient paintings and recipes given in manuscripts, what substances were available to ancient and mediæval workers, and their descriptions of their derivation and behaviour in use by contemporary writers. In the first place, any pigment which is to be used for painting glass and combined with a vitreous flux, and which will not withstand the heat necessary to bring the latter into a state of fusion and so bind it to the surface of the glass, can be eliminated. This condition dispenses at once with organic compounds, such as the lakes, indigo, &c., and colours such as the blue "azure" made from the cornflower mentioned in the manuscript just quoted. Amongst the blues this reduces at once the number to two—viz., the earths and ores coloured with copper, and the semi-precious stone, lapis lazuli.

You will notice Theophilus, in his glass-painting recipe, calls the substance to be mixed with the copper oxide and flux *Greek* sapphire, and this is the only time he applies this adjective to it, whilst throughout the treatise the word "sapphire" is used as a generic term for blue-coloured glass.

It is impossible to maintain, as has been held by some, that under the name "sapphire," as used by these as well as the Greek and Latin authors, the precious stone called by that name by us moderns was intended.

Pliny, Isidore of Seville, Theophrastus, Dionysius, and many more ancient and mediæval writers mention "sapphire," and ascribe to it properties which could not be possessed by the precious stone of that name. The sapphire described by these writers was found in such large pieces that it was used for inlaid and mosaic work; it possessed medicinal properties such as we know can only be produced by a copper salt. It was ground up and used as a paint, but often faded in light, and had many other properties that the true sapphire can in no way possess.

(*To be continued.*)

RATES AND TAXES FROM A BUSINESS MAN'S POINT OF VIEW.—II.

By H. G. CHANCELLOR, M.P.

TURNING now to the tax and rate revenue, scarcely an item but affects business injuriously. Of Customs and Excise this is true only in part. The duties on portable alcohol have other than a fiscal object. Though used for revenue, they are deliberately designed to limit the sale of alcohol, and no doubt have that effect, as every increase in cost must do. But that is an advantage to business generally, as is coming to be widely recognised.

Limitation by licence and by a tax of a trade which, though legalised, prospers only at the expense of all other businesses, is in the interest of all legitimate trading. No reduction, therefore, will be asked for by any wise business man not interested financially in the trade itself.

But this cannot be said of the ten millions raised on food. Except that they are not protective in character, these taxes possess every vice that should be avoided and violate every principle laid down. Besides, the injustice and cruelty of their incidence upon the poorest, the artificial increase in price limits demand and injures trade, not only trade in the articles taxed, but in all those necessaries of life which would otherwise be the subjects of purchase by the poor, but which are now stinted or done without. The tax on sugar is also a tax on the raw material of several trades, and its reintroduction created widespread distress and drove into bankruptcy and out of business many small manufacturers. Indirect taxation favours monopoly at the expense of general business, and should be abolished in its true interests.

The same is true of most of the stamp duties. Except in so far as these are payment for services rendered, they constitute a penalty upon transactions which ought to be encouraged. There is no reason why the man who pays a debt by cheque should be taxed a penny for the privilege of doing so, or why he should be taxed in a similar way for acknowledging receipt of every such payment of the value of 40*s.* or more. Many of these duties are petty and irritating interferences with business that cannot assist it, and are only borne patiently because people have grown accustomed to them.

Of all existing taxes, with exceptions mentioned later, those most just are the death duties. On principle nothing can be said against these. They take from no person anything that ever belonged to him, but merely in handing the property of the deceased to beneficiaries retain for the State a portion of what never was theirs, and what, therefore, cannot be said to be taken from them. On the other hand, the method of raising them does hamper business. The payment of a large sum out of capital hinders expansion and may cripple a business for years. When, as in the case of land, the whole estate is kept intact, oftentimes income for years is used for payment of duty, and during that period needed expenditure is not made and needed work is left undone. This injures both local labourers and farmers and traders. If the option to pay such duty in land were made into a statutory obligation this would not take place, and land would be made available easily and at fair prices for satisfying the land hunger, repeopling the rural districts, increasing the produce of the soil, and developing a market that would help instead of hinder business.

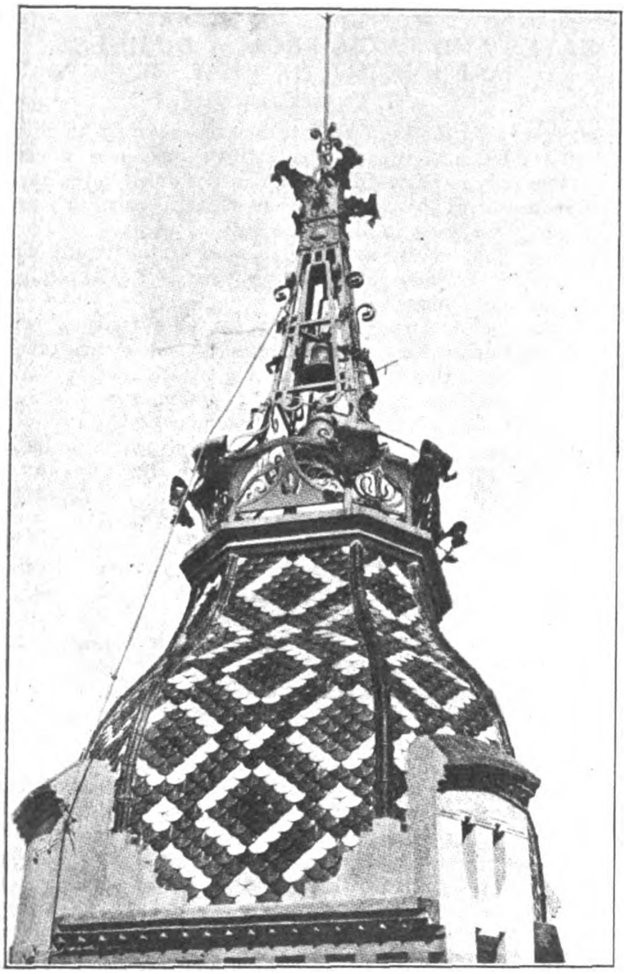
Income tax is now apparently a permanent, as it is a growing, source of revenue for the State. It is said to be based on the principle of taxing according to the ability to pay, and with that view graduation, exemption, super-tax, and differentiation between earned and unearned incomes have been adopted.

But it does nothing of the kind. Before even an approximation to equality of burden can be achieved two things are necessary:—

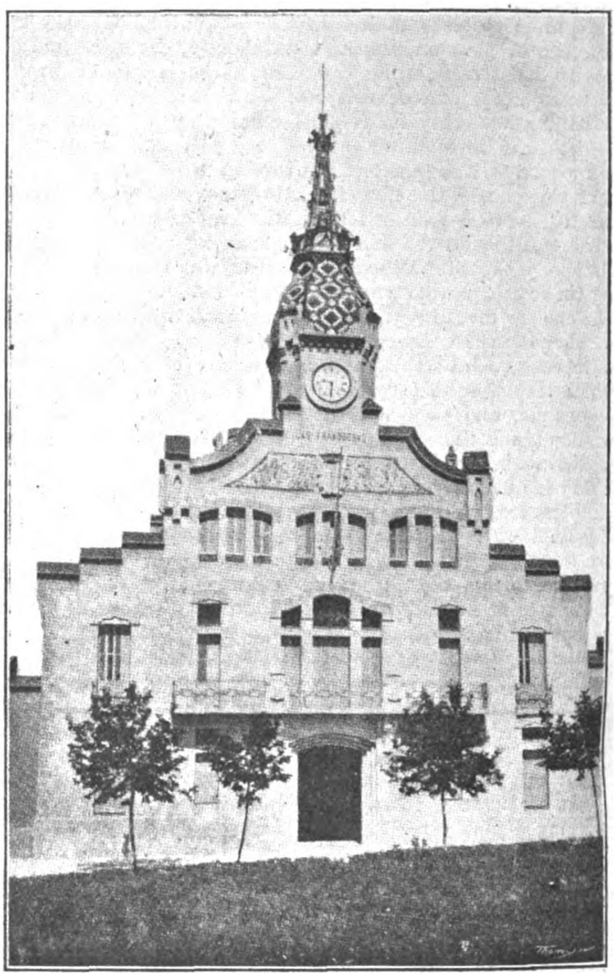
1. The ascertainment of every personal income, and
2. Taxation on its net amount.

Even then the application of the principle would be almost impossible. Take the case of two men, one with a fixed income of £1,000 a year, whether from investments or salary, the other earning the same amount in profit. The former, knowing the amount, can adjust his outgoings to meet the tax. The latter may have started his business with little or no capital. Its growth—its very existence—may depend on retaining in it as capital all profit except that necessary for an absolute minimum of household

MODERN EUROPEAN ARCHITECTURE.
SPAIN.



DETAIL OF CLOCK TOWER.



CENTRE OF FACADE.

[From *Arquitectura y Construccion.*

MUNICIPAL OFFICES AND SCHOOLS, LAS FRANQUESAS, BARCELONA.—Don ALBERTO JUAN TORNER, Architect.

expenses. The tax on his profits makes his work more difficult and risky, hampers his development, and damages his trade. There is no equality of burden here. But there is a penalising of industry and discouragement by the State of effort which in its own interest the State ought to encourage.

And if the principle is sound, why not apply it all round, and charge a scale, graduated according to income, for carrying letters or parcels? The principle of paying to the State the cost or value of services rendered by the State seems the sounder, as it is certainly the more businesslike.

Leaving until later the question of the land taxes and omitting the minor items of local revenue, the question of the house taxes—*i.e.*, the Inhabited House Duty and Rates—with their effect on business, is the most important remaining for consideration. As applied to dwellings, these burdens are imposed on the "ability to pay" principle. Houses under £20 are exempt from duty. Those above are assessed on a valuation different from and generally higher than that of the local authority. The assumption is that the size of the house is a rough measure of the income of the occupier. It would be truer to say that it was a measure of the size of his family. And growth of family does not necessarily increase income, or make taxes easier to bear. Moreover, the term itself is often a misnomer. The tradesman who lives over his shop is taxed not only on the part that forms his dwelling, but on the whole property, assessed on its value as business premises. That is an unjust discrimination against the small man in favour of his larger competitor who lives away from his business. It should be rectified by assessing separately the dwelling and the business parts, and leaving the tax only on the former.

But no occupied building, whether used for dwelling or for business, escapes rates.

In taking any house the prospective tenant naturally ascertains beforehand what is to be the total annual cost, including rent, rates, and taxes. It is natural to assume, therefore, that many a house under the exempted figure is taken by a tenant, to avoid the tax, who really needs, and would otherwise take, a larger one. The tendency is not only to cramp the family for room—a most undesirable thing in itself—but to injure the building trade by reducing the size of dwellings and the extra employment larger ones would require, and to injure in like manner all the hundred and one trades engaged in the supply of fittings and furniture.

The effect of the House Duty, however, is small compared with that of our rating system. Of all the monuments of human folly it is difficult to conceive one greater than this. That it should have been devised by a "nation of shopkeepers," or tolerated by them so long, is no tribute to their business acumen and sanity.

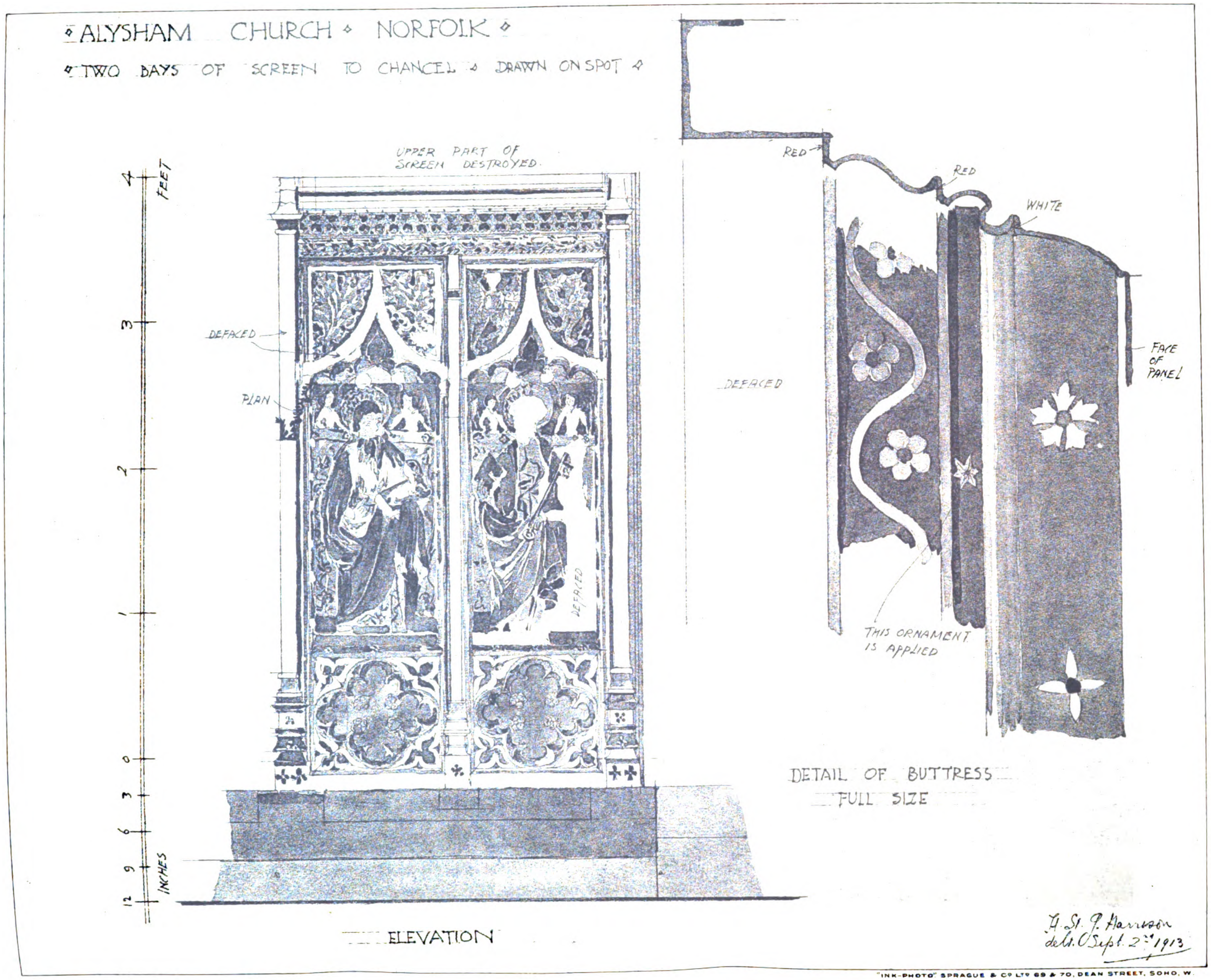
The old land tax of 1692, the unredeemed part of which last year yielded £700,000, was levied, "according to the true yearly value as the same are let for or worth to be let for at the time of assessing thereof."

Had the valuations been kept up to date and the tax continued, most of our modern problems need not have arisen.

The rating system adopts the principle, but ignores the vital condition "worth to be let for."

It takes a property, land, buildings, and improvements, ascertains the rent, makes certain allowances, and assesses rates on the annual value arrived at. In the case of great palaces and mansions surrounded by land used as parks and pleasure grounds, the assessment is often a mere fraction of the actual value. Chatsworth House, with 700 acres of park, pays on an assessment of £700.

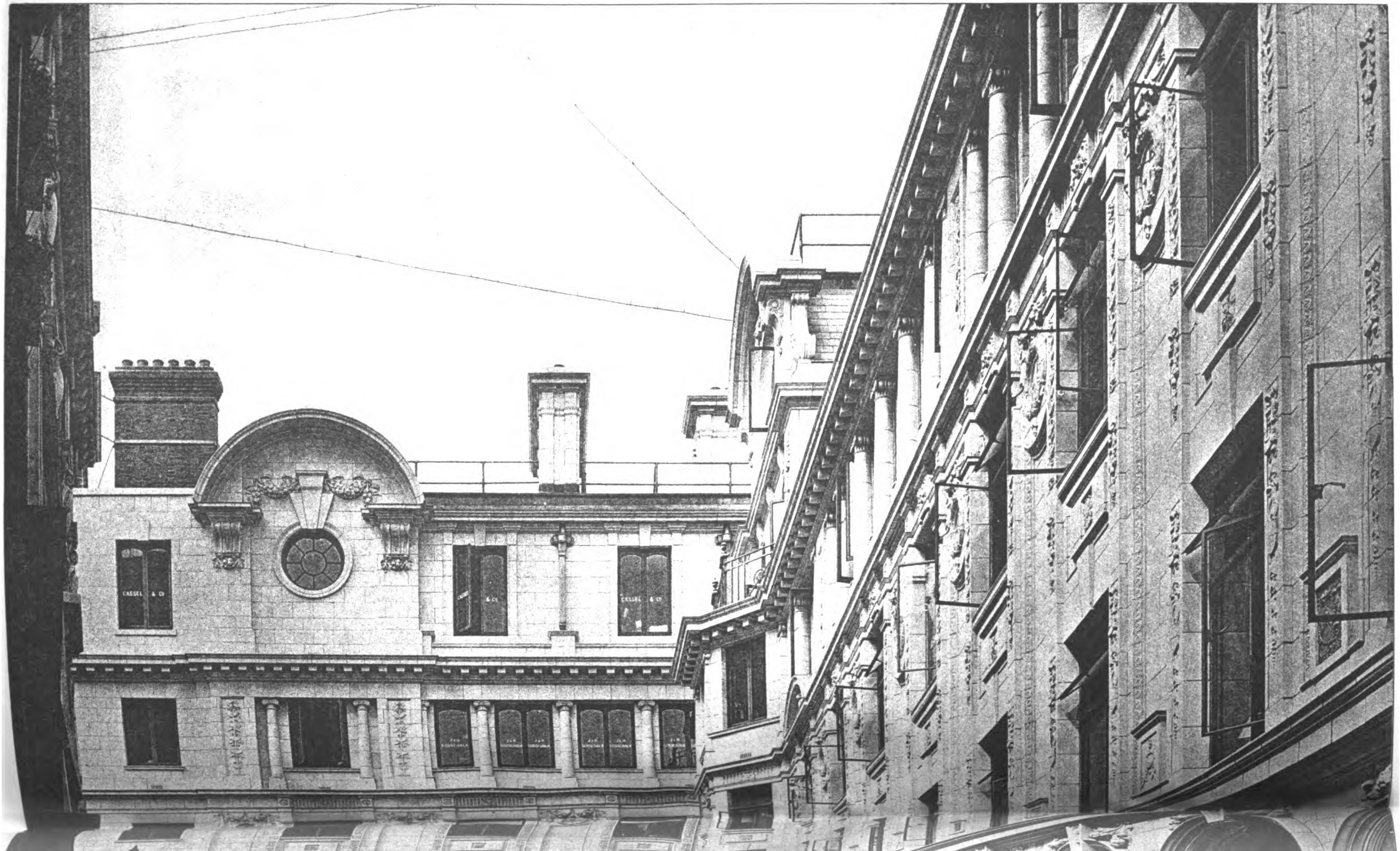
But that is not the worst. Land unused and therefore unlet and paying no rent is presumed to have no value for rating. That it has value for selling is soon discovered when required for public purposes. But so long as it remains unused and unlet it escapes rates altogether. The only burden which such land bears now is the


ALYSHAM CHURCH NORFOLK
TWO BAYS OF SCREEN TO CHANCEL DRAWN ON SPOT
UPPER PART OF SCREEN DESTROYED.
DEFACED
PLAN
DEFACED
FEET
4
3
2
1
0
3
6
9
12
INCHES
ELEVATION
RED
RED
WHITE
FACE OF PANEL
DEFACED
THIS ORNAMENT IS APPLIED
DETAIL OF BUTTRESS
FULL SIZE
H. St. J. Harrison
delt. Sept. 2nd 1913

"INK-PHOTO" SPRAGUE & Co LTD 69 & 70, DEAN STREET, SOHO, W.

"THE ARCHITECT" TRAVELLING STUDENTSHIP, 1913.

From a drawing by Mr. H. St. JOHN HARRISON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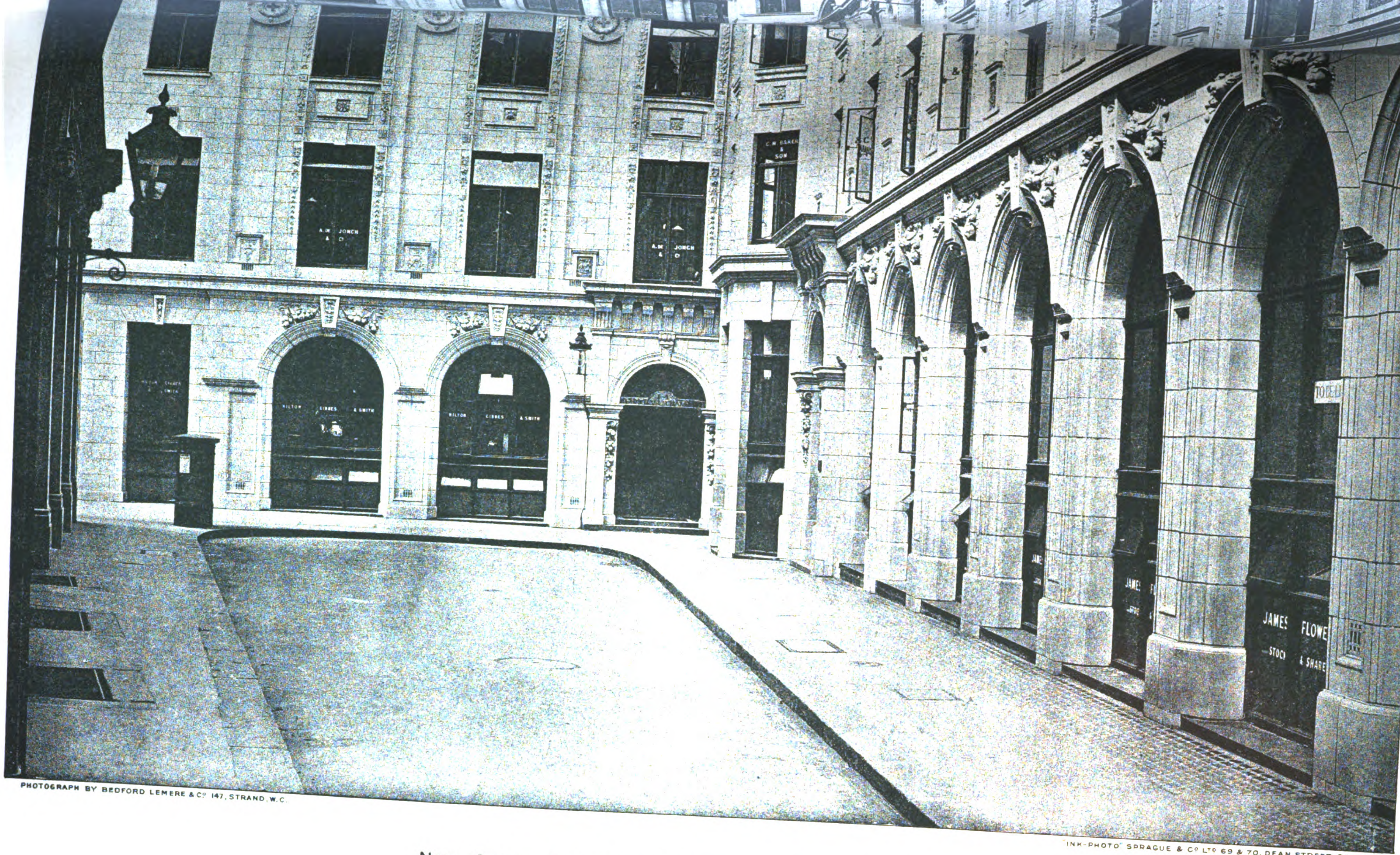
TO LET
JAMES FLOWE
STOCK & SHARE

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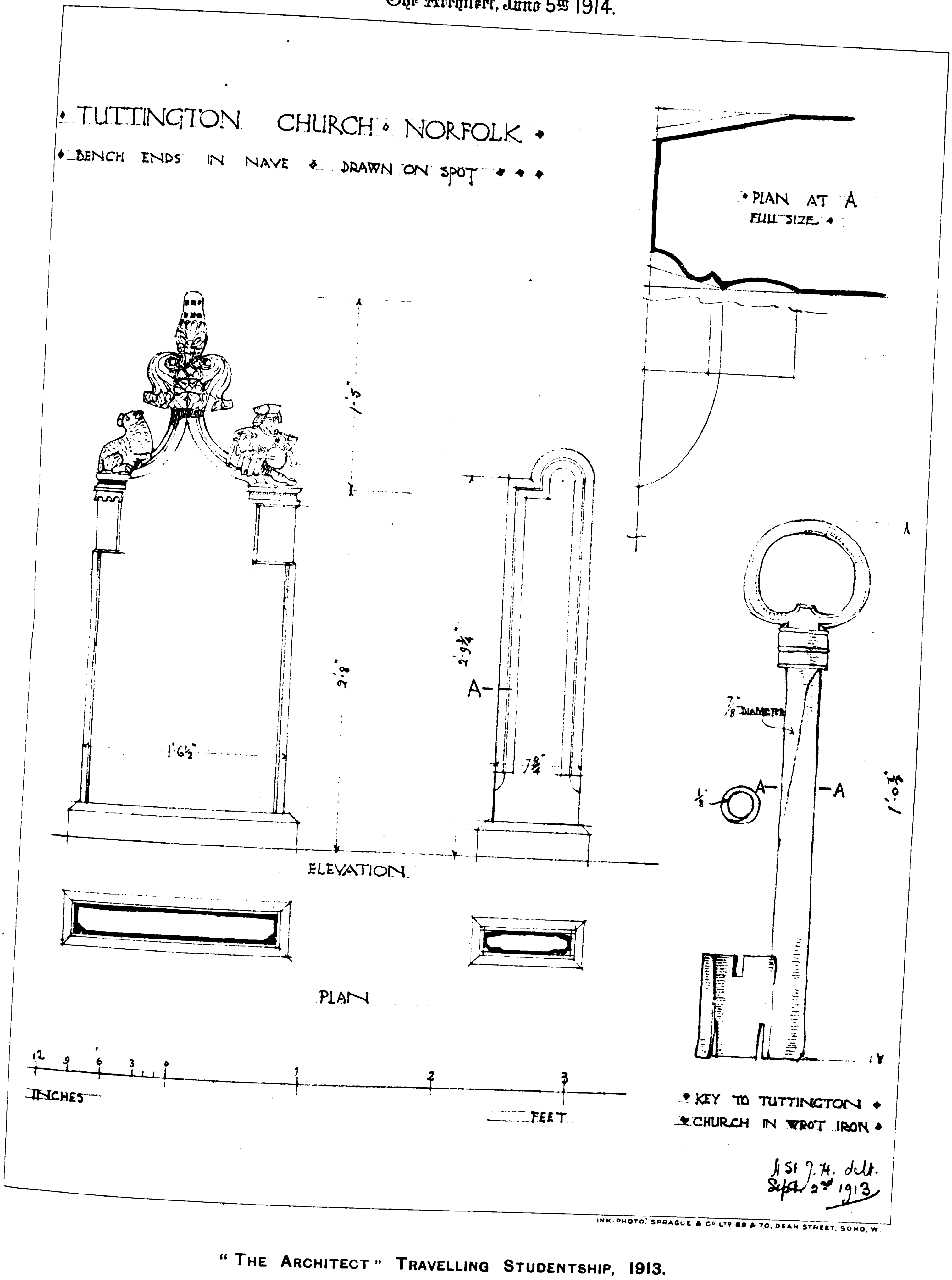
NEW OFFICE BUILDINGS, COPTHALL COURT, LONDON, E.C.

The late ALEXANDER GRAHAM, F.S.A., and Mr. T. A. POLE, A.R.I.B.A., Architects.

The Architect, June 5th 1914.


TUTTINGTON CHURCH NORFOLK
BENCH ENDS IN NAVE DRAWN ON SPOT
PLAN AT A
FULL SIZE
1'5"
2'8"
1'6½"
2'9¾"
A–
7¾"
ELEVATION
PLAN
12 9 6 3 0 1 2 3
INCHES
FEET
7/8" DIAMETER
1/8
A– –A
1'0¾"
KEY TO TUTTINGTON CHURCH IN WROT IRON
H St J.H. delt.
Sept 2nd 1913

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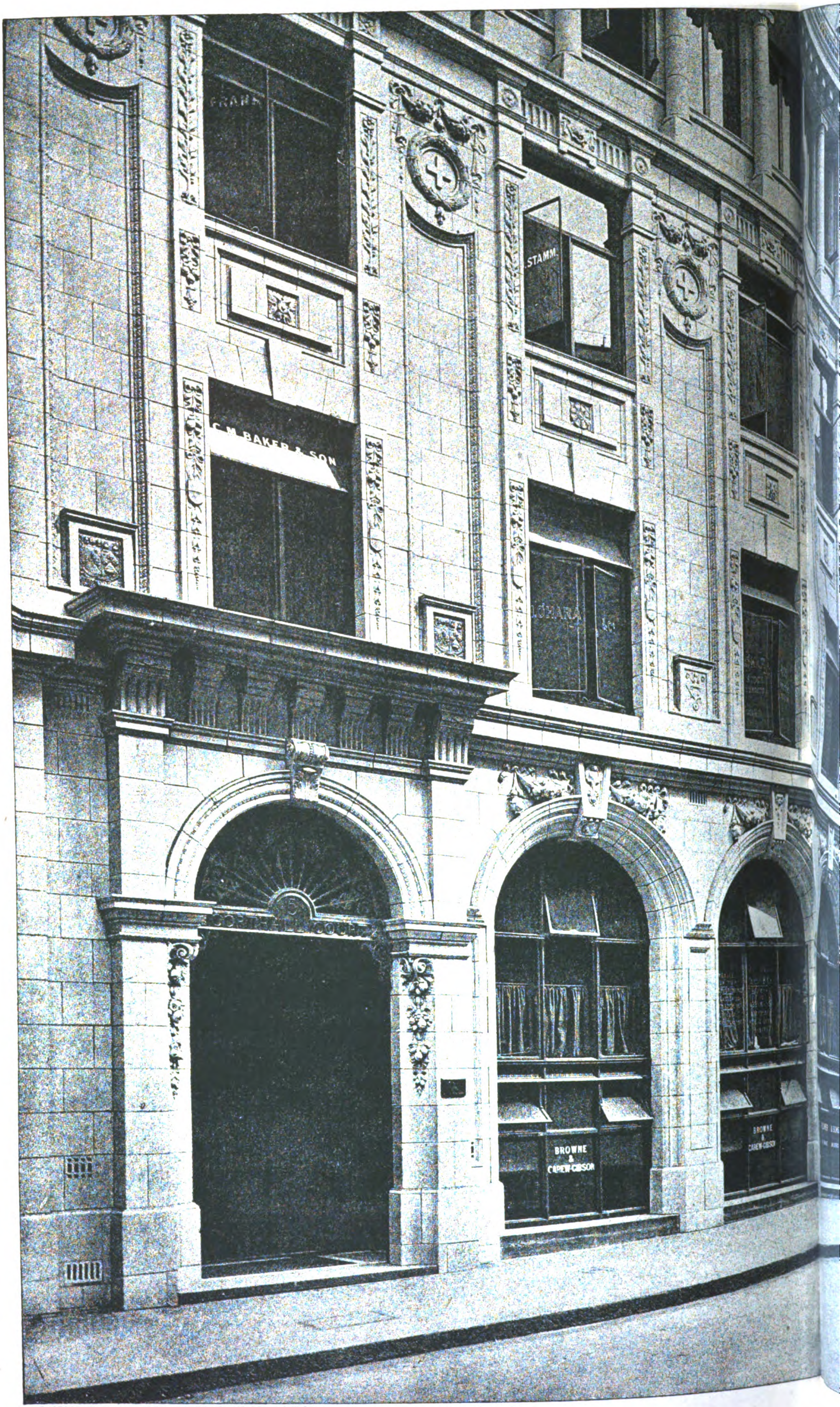
"THE ARCHITECT" TRAVELLING STUDENTSHIP, 1913.

From a drawing by Mr. H. St. JOHN HARRISON.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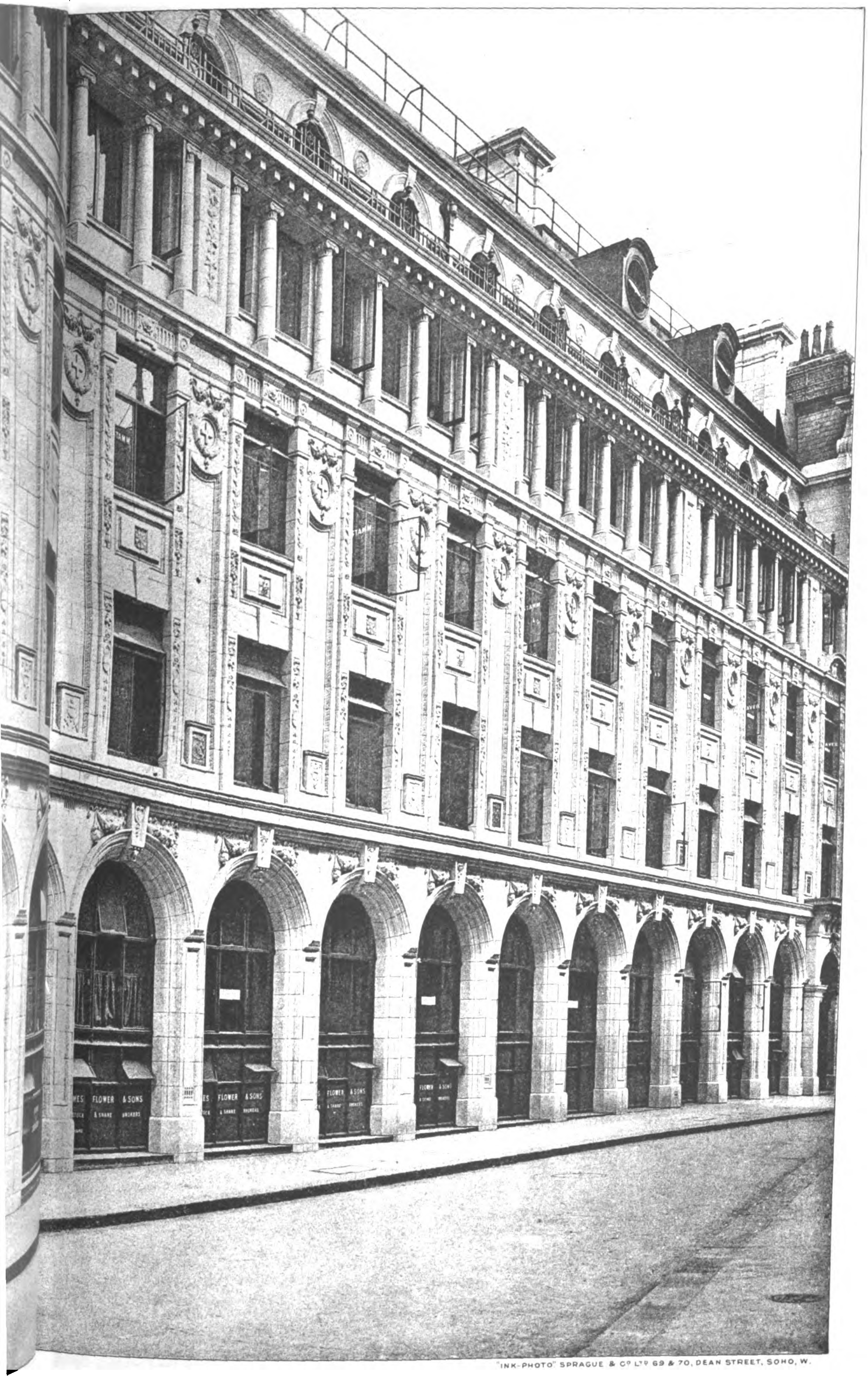

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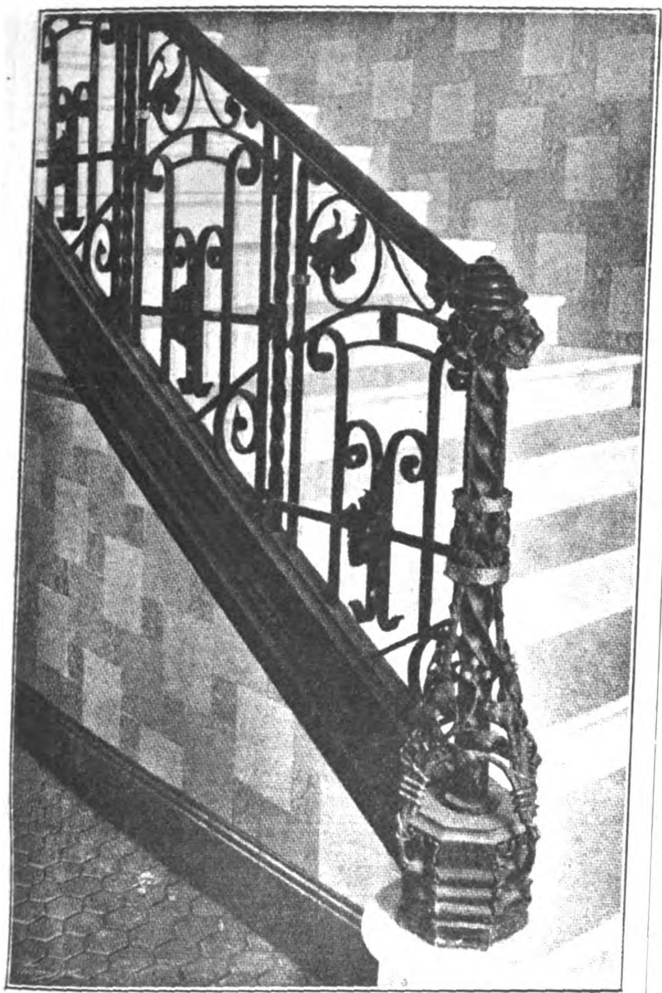
MODERN EUROPEAN ARCHITECTURE.

SPAIN.



DETAIL OF STAIRCASE.

[From *Arquitectura y Construccion.*

MUNICIPAL OFFICES AND SCHOOLS, LAS FRANQUESAS, BARCELONA.—Don ALBERTO JUAN TORNER, Architect.

undeveloped-land tax of ½*d.* in the £ on its capital value as ascertained in the Budget valuation. Even this does not apply unless that value exceeds £50 per acre.

When it is used by cultivation or building the assessment is made upon the joint value of land and improvement. There is thus a financial reward by way of exemption for allowing it to lie idle. That reward is made the greater by the fact that in growing urban areas requiring expansion every year's delay sends up the value not only of the unrated vacant land, but of that already developed. The growth of population means increased demand with restricted supply. As a result prices go up, and on the termination of tenancies rents are increased. This hits everybody. But it hits hardest of all the business man, whose premises represent far more to him financially than his residence to the householder. It enables the freeholder to exact terms greatly in excess of the value, amounting often to confiscation of his goodwill. With the rise of rent his assessment automatically increases, and of course his rates also. Worst of all, the growth of the town is retarded; necessary work in housing, with all that it would mean in employment for all sorts of trades, is prevented; necessary materials are unbought; potential customers are kept away; the town grows more congested: local cost of sanitation, poor law, &c., is increased; and rates go up. In other words, business is retarded and burdens increased. So long as values within the area are not made to contribute, their share must be borne by the ratepayers who are assessed. That can only be rectified by removing the exemption, which can be done simply and easily by altering the basis of assessment from rent to value. The relief would be immediate. Every pound of hitherto unrated value brought under contribution would reduce the amount to be raised on the old assessments, and make rate reduction possible without reducing local expenditure. Another effect must be the cheapening of land, for if exemption fosters monopoly, as is proved beyond doubt, its removal would break it down, and with it monopoly prices.

But this would still leave the rating system inimical to business, and one further change is necessary.

It is just as true of buildings as of tea—that taxing raises the price, and that increased price checks demand. It should be equally obvious to business men that business must suffer by artificial increase in the cost of any necessary of life. Buildings are scarcely less necessary than food and clothing. Rates increase their cost to the occupier by anything up to 50 per cent., and sometimes more. A tradesman who sinks capital in enlarging or improving his premises in West Ham knows that so soon as it is sunk it will be assessed and rated. Unless, therefore, it will pay him 10*s.* in the £ to hand over in rates in addition to the interest it would earn in other directions, he will use his money otherwise and make no improvement or enlargement that can be avoided. The owner of tumble-down property on valuable land knows that if he pulls down and rebuilds he will lose, unless the new buildings will pay not only the interest on cost of clearance and construction, but also the rates on the higher assessment. He therefore keeps the property patched up until it becomes untenantable. If, instead even then of rebuilding, he closes the property and leaves it derelict, he escapes rates altogether, and his share is added to the existing burdens of the other ratepayers. Remove the rates, and property all over the country would in a few years be transformed. The building and allied trades would receive a stimulus that would keep at work thousands of men whose spending would benefit all traders who supply their needs.

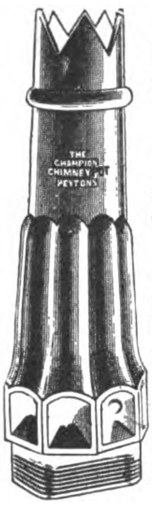
(*To be continued.*)

CAPE INSTITUTE OF ARCHITECTS.

THE annual statutory meeting of the Cape Institute of Architects was held in the Board Room of the South African Association, Church Square, Cape Town, on May 7, under the chairmanship of Mr. F. K. Kendall, F.R.I.B.A., the President of the Institute.

The President, in the course of his address, after congratulating their Fellow and Past-President, Mr. John Parker, upon his election to the mayoralty of unified and enlarged Cape Town, went on to say that, as their profession was at present constituted, it must surely have struck all of them times without number that they were suffering from want of a properly recognised status and organisation, such as existed, he thought, in almost any other profession or business; and that most of their difficulties with clients, or among themselves, were directly due to the varied opinions that people held as to the extent of an architect's duties and remuneration. There was, for instance, the everyday paradoxical case of the wholly untrained man who was free to practise as an architect with the gullible employer who could see no difference between him and the highly accomplished practitioner; or the employer who, from choice, went to the poorly equipped architect instead of to a man of good standing, under the impression that he would get from him the same work for a lower fee; or the paradox of the not too conscientious architect who charged the regular fee, but pocketed a much larger profit by not providing his client with properly worked-out detail drawings and specifications. Surely they were called upon to protect the public from these impositions and misunderstandings, and, incidentally, to raise the standing of their profession. But this could only be undertaken successfully by a representative body such as their Institute. The training must be standardised, and a recognised qualification instituted. The Transvaal architects must be congratulated upon having passed a Registration Bill through Parliament, so that they had now arrived at a more advanced stage. A local difficulty had arisen, however, in that a registered architect in the Transvaal was free to practise in the Cape Province, while a Cape Provincial architect might not practise in the Transvaal without becoming registered and purchasing his licence. This difficulty was, of course, only temporary. The Government of New Zealand had, he believed, also passed a Registration Bill for Architects, and other countries were working in the same direction.

The Cape Institute had worked strenuously for some years to secure registration, but the feat had not yet been accomplished. Certain weak spots had been found in the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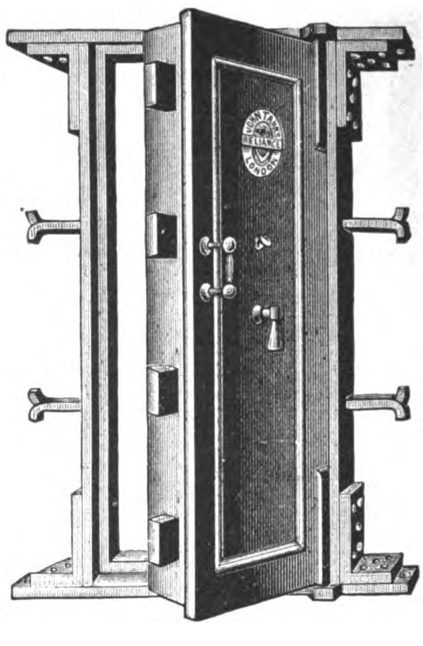

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Transvaal Act, and the Cape Institute had to consider whether it would not be expedient to introduce a Bill of their own into Parliament, quite independently of the Transvaal. And the sooner it could be accomplished the sooner would its advantages benefit the many sections of their community affected by it. In regard to competitions, an Advisory Board had been appointed by the various architectural institutes, whose duties would be to act with the Government in framing the conduct of future Government competitions. He hoped that some of their members might be instrumental in promoting courses of lectures for the professional education of the rising generation—a matter which had, unfortunately, been very neglected in the past.

ART IN LONDON.

TITIAN AND HIS CONTEMPORARIES.

IT is two years since the Burlington Fine Arts Club held its previous exhibition of works by the Early Venetian School; those who may have been fortunate enough to attend in 1912 will welcome the opportunity now afforded for the inspection of further works of the same school. The knowledge that the artist chiefly represented is that sixteenth-century giant Titian (about one-third being his work) will at once stamp the value of the collection.

In submitting the individual pictures to inspection, the Art-critic will do well not to let himself be held thrall by a name, however honoured, or by a school, however favoured by dilettanti. In reviewing the history of Art, people now living may not assume a superiority over the Masters of the centuries succeeding Raffaelle; there is neither call nor cause for us to "make allowances," and the works may be judged as they stand.

Of Sebastiano del Piombo's art five examples are shown, two being practically identical in composition, though the colour schemes differ; as a matter of perhaps personal taste, we prefer the brown and fawn tones of the "Saint Lucy" (No. 5) to those presented by No. 2, and the texture is better also in the one first mentioned. The flesh-tints and the pose are equally good in both. His portrait of da Bozzolo exaggerates the right hand, but shows a well-modelled head.

Despite manifold modern absurdities in the realms of Art, the absurdity of anachronisms of dress rarely makes itself apparent. Here, in "The Resurrection" (School of Giorgione), the costumes of the guards show mediæval armour, and ostrich plumes of even later date. Christ is depicted theatrically holding aloft a streaming white pennon, surcharged with a red cross.

Lorenzo Lotto (represented by some half-dozen paintings) has in "The Young Christ" a notable work, though the flesh-tints are too sallow, more particularly for juvenescence; the modelling is very good. The same artist's "Susanna and the Elders" is somewhat theatrically treated, but, then, it is necessary to bear in mind that the subject is particularly dramatic. The colouring is very attractive, and the landscape distance is perhaps the best portion of the work; the scrolls issuing from the lips of different *dramatis personæ* are destructive of high Art, and give a diagrammatic effect to the treatment.

In the "Adoration of the Shepherds" Bonifazio dei Pitati presents a more sympathetic rendering of the Holy Family than is customary, and accompanied by clean, harmonious colouring. To the school of this artist belongs "Didone Inamorata," which holds no appeal to us; were it a modern work it would receive (as it deserves) condemnation for its composition and its drawing. It seems a pity to exhibit works wholly and solely because of their antiquity.

Palma Vecchio's "Portrait of a Man" is fine virile work, and notable also is the so-called "Portrait of a Young *Man*" (No. 17); tradition probably is correct in calling this the portrait of a lady professor.

How certain ghastly stories seem to appeal to the Latin temperament—to Italian and French artists in particular! In this Exhibition are shown those two victims of female vengeance, John the Baptist and Holofernes. In No. 12 Salome carries in a charger the head of the Saint (by-the-bye, this is wrongly catalogued as Holofernes). The artist (assumed to be Pordonone) displays a more fitting type for the daughter of Herodias than we see in Titian's work, but the colour scheme cannot compare in interest with the great master's. In No. 30 (by an unidentified painter), wherein Judith and Holofernes arrest the attention, the woman is, to our mind, more typical of Salome than of Judith, who is represented in the Apocrypha as a gentle-mannered gentlewoman; but the colour scheme and flesh tints leave nothing to be desired.

We have left the best for the last, and that is the work of Tiziano Titian, that veteran whom senile decay did not touch, but upon whom the plague laid envious hands, snatching away the artist prematurely as he approached the centenary of his birth. "The Daughter of Herodias" is a fine composition, and exquisite in its colour tones. Salome, however, does not appear to us as properly characterised with her mild, even timid appearance; his "Judith" is in this respect fully satisfactory as interpretative of the Apocryphal dame; but the head of Holofernes is not alone repulsive, it is altogether out of scale, being more fitted for giant or ogre, such as was wont to curdle the blood in our once-youthful veins when reading legendary lore.

Titian's portraits merit the closest attention and warmest admiration for their evident fidelity, their excellent modelling, technique, and colour; that of Laura de' Dianti is in every respect a fine work of art, but the omission of the negro page would have been an improvement. His "Holy Family" (22) betrays the customary insipidity and "set" with which this subject seemed to benumb the faculties of most artists.

Of all his works on show we most admired "Salvator Mundi," which is absolutely compelling; nor must we fail to refer to "The Last Supper," a sketch for (or from) the painting in the Escorial; the grouping is highly effective.

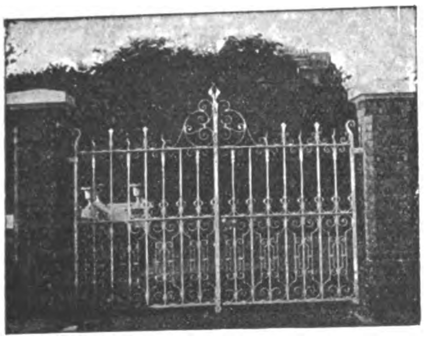
In the Exhibition are included some interesting drawings by this artist, Pordonone, Lotto, and others; but throughout it is Titian—always Titian, who holds for us the greatest appeal, and in whose absence the collection would be in truth of minor consideration, and without any special hall-mark.

AT THE DUDLEY GALLERIES IN PICCADILLY.

IN the exhibition of works by the late Paul Naftel, R.W.S., water-colour studies of British scenery in the main, we behold the extra-ordinary (using the term in an entirely approving sense). Here and there is shown a tendency towards, even a lapse into "individualistic" touch, unmerged tones; the basis is always good, but the difference is as between playing "Home, Sweet Home," with one finger and with well-harmonised chords. Not often, however, in this small collection is this criticism needful; for, in the main, breadth of touch dominates the work, and with this, other good qualities are in evidence. We must select for especial note "Well at Saints' Bay, Guernsey," "Quarry at Alport, Derbyshire, "Le Creux Harbour, Guernsey," "At Youghall, Derbyshire," and "Dungeon Ghyll, Westmorland," the last named being a notable instance how an infinitely-varied colour scheme can yet be well modulated.

We pass on now to the works of Mr. Samuel Hancock, the postman-artist, a man who trudges his miles per day in the City of London in the course of his employment, and then for very love of Art expresses his devotion between the hours of labour by transferring to canvas what he sees morning and evening to attract his interest. In some instances Mr. Hancock memorises, but mostly his work is, we believe, the direct transmission of passing effects.

Self-taught is his art, which is his pastime; it cannot be supposed that the work is outside the class of the ordinary, despite the interest that the special circumstances may create. But even so there is some work that needs neither apology nor reservation in approval. "Dutch Boats, Billingsgate," "The Dorset Coast," "The North Foreland," and "Dirty Weather" would be good anywhere; so too, with "Silvery Morn," and this little sketch received the cachet (if it be one) of exhibition at the Royal Academy. "Cannon Street Station" is the title of two studies, No. 15 being distinctly superior to No. 32. In "St. Paul's from Waterloo" we see a really poor piece of work—poor drawing and no faintest suggestion of the real St. Paul's; again, "In the Tuileries" fails lamentably, and "Queenhithe" portrays a most unrealistic sky and is harsh in technique, as are some of the other studies. But let us end with an expression of high approval of "Whipps Cross," "At Chigwell," and "Limehouse Reach"—indeed, we might have mentioned others, but have written enough to indicate that a visit to these galleries would be justified not alone to view the works of Mr. Naftel, but those also of the postman-artist, Mr. Hancock.



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Abingdon.—County Council Sanatorium.

BUCKINGHAMSHIRE.

Botolph Claydon.—W.M. Church.

CHESHIRE.

Altrincham.—Council School, Princes Road, Broadheath. Mr. J. C. Thompson, architect.

Aston.—Vicarage. Messrs. J. G. Davies & Co., contractors, Main Street, Frodsham.

Holmes Chapel.—Council School.

Macclesfield.—Alterations to the "Modern School" premises for school clinic and feeding centre (£1,150). Messrs. Whittaker & Bradburn, architects, 19 King Edward Street.

CORNWALL.

Padstow.—Eight workmen's cottages (£2,000).

CUMBERLAND.

Cockermouth.—Cinema, Station Road. Mr. P. M. Hope, architect, Main Street.

Silloth.—Police Station and Court House, Eden Street. Mr. G. D. Oliver, F.R.I.B.A., County architect, 68 Lowther Street, Carlisle. Separate trade contractors.

DURHAM.

Rainton.—One hundred and twelve colliers' houses. Mr. A. H. Fennell, architect; High Chare, Chester-le-Street.

ESSEX.

Barking.—Thirty artisans' dwellings, Gascoigne Road. Mr. C. F. Dawson, Council surveyor, Ilsenburg, Longbridge Road.

GLOUCESTERSHIRE.

Bristol.—Art Gallery and Museum: extension.
Ham Green Hospital: extension.

HERTFORDSHIRE.

Berkhamsted.—House, rear of "The Kraal," Gravel Path, for Mr. A. Barron.
House, Shrublands, for Mr. W. Dwight.
Girls' Grammar School: extension.

Buntingford.—R.C. Church of St. Richard of Chichester. Mr. A. Young, architect, 5 South Square, Gray's Inn, London, W.C. (£2,500).

Hitchin.—Technical School, &c., for Trustees of E. A. Lucas Charity. Mr. W. Millard, A.R.I.B.A., architect, 10 Gray's Inn Square, London.

LANCASHIRE.

Accrington.—Picture Theatre, Whalley Road, Clayton-le-Moors, for Mr. J. Yates (of Oswaldtwistle).

Bamber Bridge.—St. Aidan's Church: completion for an additional 264 sittings. Mr. F. R. Freeman, architect, 21 Wood Street, Bolton. Messrs. E. Lewis & Sons, contractors, Shorrock Delph, Blackburn.

Brierfield.—Council School for 342 places (£5,300). Mr. H. Littler, County architect, 16 Ribblesdale Place, Preston.

Liverpool.—Picturedrome, Vauxhall Road, for Mr. W. J. Ewbank.
Picturedrome, West Derby Road, for Mr. T. H. Hughes.
Picturedrome, Marsh Street, Kirkdale, for Mr. T. C. Dickinson.

Manchester.—Forty-two workmen's houses, Tebbutt Street (£5,900).

LEICESTERSHIRE.

Barlestone.—House, for Mr. G. W. Hextall.

MONMOUTHSHIRE.

Blaina.—School Hall, Class-rooms, &c. Mr. W. B. Rees, architect, 3 Dumfries Place, Cardiff.

NORTHAMPTONSHIRE.

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St. Margaret's Residential Hotel: additions and alterations. Messrs. Hope & Tasker, A.R.I.B.A., architects, Trinity Chambers, New Bridge Street.

NOTTINGHAMSHIRE.

Nottingham.—Warehouse, for Trent Navigation Company. Messrs. Heazell & Sons, R.I.B.A., architects, Burton Buildings, Parliament Street.

SOMERSET.

Chard.—Workhouse: infirmary for thirty beds (£3,000).

STAFFORDSHIRE.

Arley.—"Littlecroft": additions and alterations, for Rev. J. P. L. Ames.

Bucknall.—Isolation Hospital: Administrative Block extension. Mr. Elijah Jones, architect, 10 Albion Street, Hanley.

Burslem.—Drill Hall, for 5th North Staffs Regiment, T.F.A.

Cannock.—Council School, High Town. Messrs. Bailey (F.R.I.B.A.) & McConnal, architects, Kingscourt, Bridge Street, Walsall; also

Hednesford.—Council Schools for 500 places (£6,500).

SURREY.

Farnham.—Workhouse: additions and alterations. Messrs. Kingham & Kingham, architects, Bank House, Grosvenor Road, Aldershot.

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Coventry.—"Railway Hotel": extensions, for Messrs. Mitchell & Butlers; also
Nos. 266 and 268 Narrow Lane: alterations.
Two houses, Spencer Avenue, for Mr. T. Higgs.
Nos. 519 and 521 Foleshill Road: additions, for Mr. A. Blunt.
Picture Theatre, Primrose Hill Street, for Mr. F. H. Turner.

YORKSHIRE.

Askern.—Church Institute.

Burley-in-Wharfedale.—P.M. Sunday School: additions. Messrs. Empsall & Clarkson, architects, 7-11 Exchange, Bradford.

Carleton (near Pontefract).—House, for Mr. W. Spurr.

Castleford.—House, Redhill, for Mr. F. Sweeting.

Greetland.—St. Thomas' Sunday School, Rochdale Road.

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Ossett.—House, near Teall Street. Messrs. Kirk, Sons & Ridgway, F.R.I.B.A., architects, Market Place, Dewsbury.

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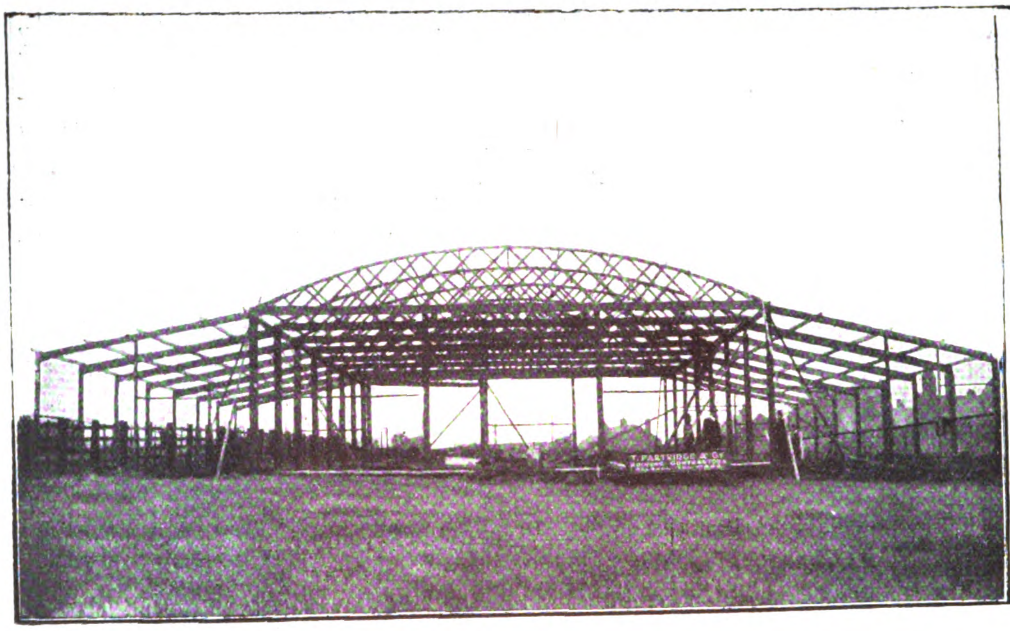

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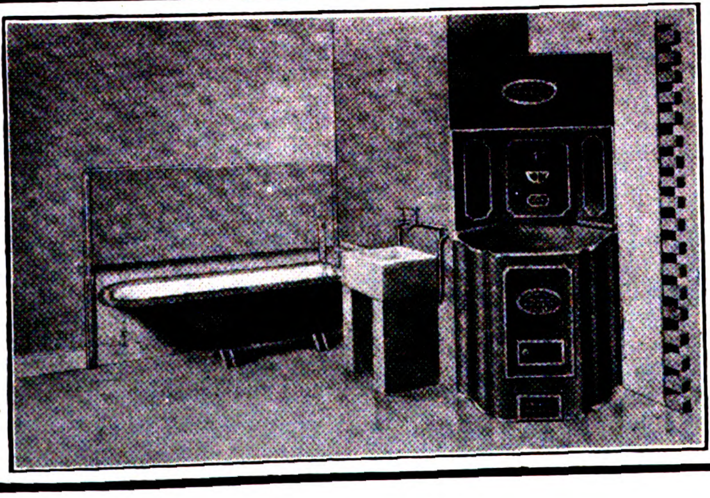

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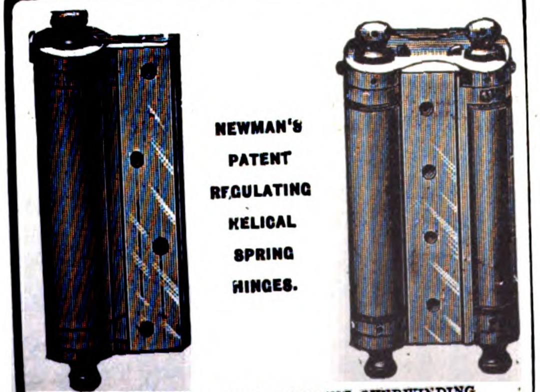

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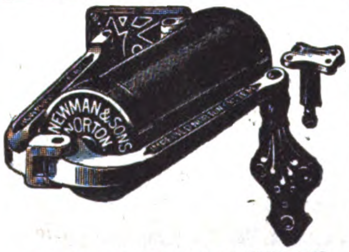
WITH PATENT STOP TO PREVENT OVERWINDING.
The power can be instantly taken off while the Hinges are being fixed and afterwards adjusted to close the door conveniently. They cannot be overwound.
Made in Brass and Iron, 3, 3½, 4, 4½, 5, 6, and 7 inches.



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MADE IN MALLEABLE IRON.
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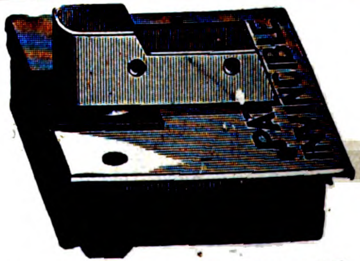
Also made with Patent Regulator to latch stubborn bolts.



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Made solely by W. NEWMAN & SONS,
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SCOTLAND.

Clydebank.—Garage, Dumbarton Road, for the Clydebank Motors, Ltd.

Blocks of workmen's dwellings, near Radnor Park. Mr. W. H. Howie, architect, 213 West Campbell Street, Glasgow. Messrs. R. McAlpine & Sons, builders, Radnor Park.

Coatbridge.—Speedwell Iron Works: additions, for Messrs. Lidgewood & Co. (£1,200).

Dalry.—Shops and houses, New Street, for Dalry Co-operative Society, Ltd.

Darnley.—Fire Station and Offices for the Council (£6,500).

Dreghorn.—Constabulary Station, for Ayrshire C.C.

Edinburgh.—Nos. 12, 14 and 16 Grassmarket: alterations, for Dairy Supply Company, Ltd.

No. 15 Blacket Place: alterations, for Mr. W. W. J. Nicol.

Nos. 7 and 9 Chamberlain Road: additions and alterations for Nurses' Memorial Committee.

Glasgow.—Tenements, Gallowgate and Moore Street, for the Corporation.

Villa and Offices, Southbrae Drive, Jordanhill. Messrs. A. Meikle & Co., builders, 4 Bath Street.

Workshops, South and Balmoral Streets, Scotstoun, for Messrs. Mechan & Sons, Ltd.

Irvine.—Buildings, Bridgegate, for the Irvine and Fullarton Co-operative Society (£3.500). Mr. R. Frew, architect.

Johnstone.—Phthisis Pavilion at the hospital. Mr. J. Keanie, contractor, Thomson Avenue.

Kilbirnie.—Parish Council Chambers and Public Hall.

Kilwinning.—Mossculloch Farm: additions to house, for Prof. Ferguson.

"Redburn House": addition, for the Earl of Eglinton and Winton.

Largs.—Garage and Chauffeur's House, Quarter, for Mr. R. J. Leiper.

Milngavie.—Proposed tenements and picture house, Station Road, for Messrs. Dunlop & Jones (of Glasgow).

Stevenston.—Four houses, Ardeer Square, for the Glengarnock Iron and Steel Company, Ltd.

Wishaw.—Y.M.C.A. Institute, Main Street (£6.500).

IRELAND.

Athlone.—Working men's houses (£11,000).

Belfast.—Ulsterville National School, Edinburgh Street, for 500 places (£5.000). Mr. T. Houston, architect, King's Court, Wellington Place. Messrs. Thornbury Bros., Ltd., contractors, Ravenhill Road.

BRITISH PATENT SPECIFICATIONS.

Selected by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

The first date given is the date of application; the second, at the end, the date of the advertisement of the acceptance of the completed specification.

No. 7,373. March 28, 1913.—Skylights. Joseph Burley, 4 Beaconsfield Road, Saint George, Bristol.—This invention relates to a detachable skylight, which is manufactured from a sheet of iron or other suitable metal. A piece of iron of suitable size is cut from the sheet, and the edges of the opening are pressed up to a convenient size and shape, having round corners, and the sash of glass fits over same. The opening metal sash has round corners at top and square at bottom, with supports in corners at the bottom to keep the sash rigid. The edges of the opening are pressed up from the corrugated iron sheet to form a jointless curb with rounded corners, and to fit over this jointless curb a double strengthening iron or collar is made, the outer bottom edge of which extends down to the level of the corrugated iron sheet, and the inner edge is bent underneath the corrugated iron sheet and soldered thereto, thus giving a triple thickness and strength to the curb. Under the bottom part of the sash bars holding the glass there is a channel, in which are holes for the escape of any water that should drift under. The glass is secured to the sash by means of metal clips. These clips are secured to the inside of the bottom sash bar by means of lock-in nuts carried by bolts, which secure the clips to the sash, thus holding the glass in position. The opening and closing of the sash when in position is controlled by means of a metal arm formed out of a piece of round iron with a twisted eye at one extremity and with two outwardly bent ends at the other extremity, to fit into two respective sockets attached to the inside of the bottom sash bar. The ends of the arm are capable of being easily pressed together to enable the arm to clear the sockets when desired to fix the same into position or to remove it. To the twisted eye of the arm is attached a chain or rope, which then passes over a bracket pulley-wheel rivetted to the inner side of the bottom end of the curb. The other end of the rope or chain is then carried to a convenient position for manipulating the opening and closing of the skylight. The sash itself is hung on detachable hinges, rivetted to the corrugated iron sheet. Fig. 1 shows general view of hanging skylight. Fig. 2 shows an enlarged detail section on line A, A, of fig. 1. The corrugated sheet, 20, is shown with the pressed-up curb, 21, and fitting over the curb, the double strengthening iron or collar, 22. Fig. 3 shows the light with rounded corners, 1^1, 1^2, at top, and strengthening pieces in square corners, 2^1, 2^2, which are rivetted to the side and bottom bars of the sash, the top and side bars being made in one piece. Fig. 4 is a view of bottom end of sash, showing bottom bar of sash, 3, and space, 4, between glass, 5, and the bottom bar of sash to conduct the moisture which may collect on the inside of the glass, 5, out on to the roof, also channel, 6, which is pierced at intervals with holes, 15, to allow of the escape to roof of any water which may drift under. Fig. 5 shows clip, 7, rivetted to bottom bar of sash, 3, which clip has on its top and bottom sides tongues, 9^1, 9^2, left to knock up, to retain in its right position a lock-nut, 16, in space, 10, into which nut is screwed the screw 8, on which the clip 14 is secured, thus holding the glass, 5, in position. Fig. 8 shows sectional side view of the skylight open, the dotted line, 17, indicating the rope used for opening the light. April 1, 1914.

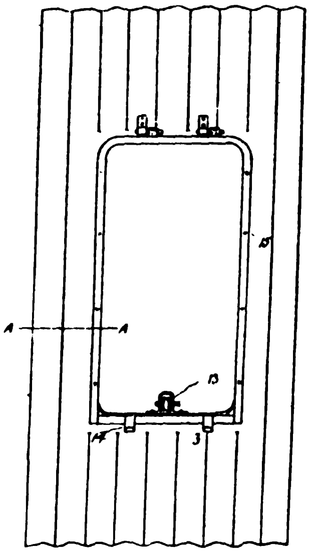

FIG. 1.

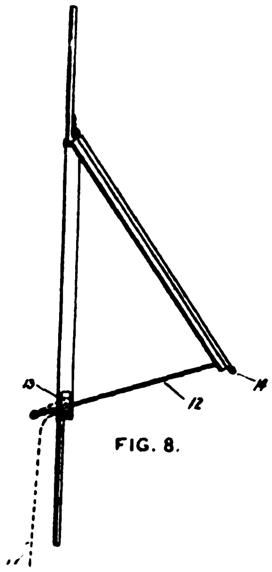

FIG. 8.

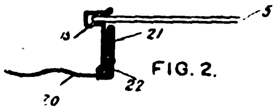

FIG. 2.

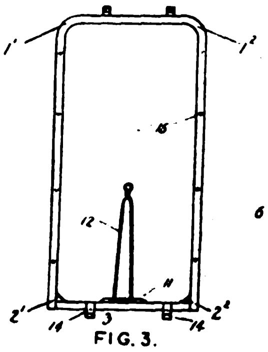

FIG. 3.

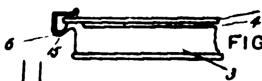

FIG. 4

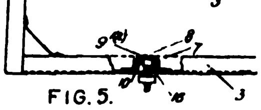

FIG. 5.

Messrs. Gordon & Gunton, architects and surveyors, Finsbury House, Blomfield Street, E.C., have prepared plans for the important offices to be erected on the site of the old Pearl Life Assurance premises, Adelaide Buildings, London Bridge.

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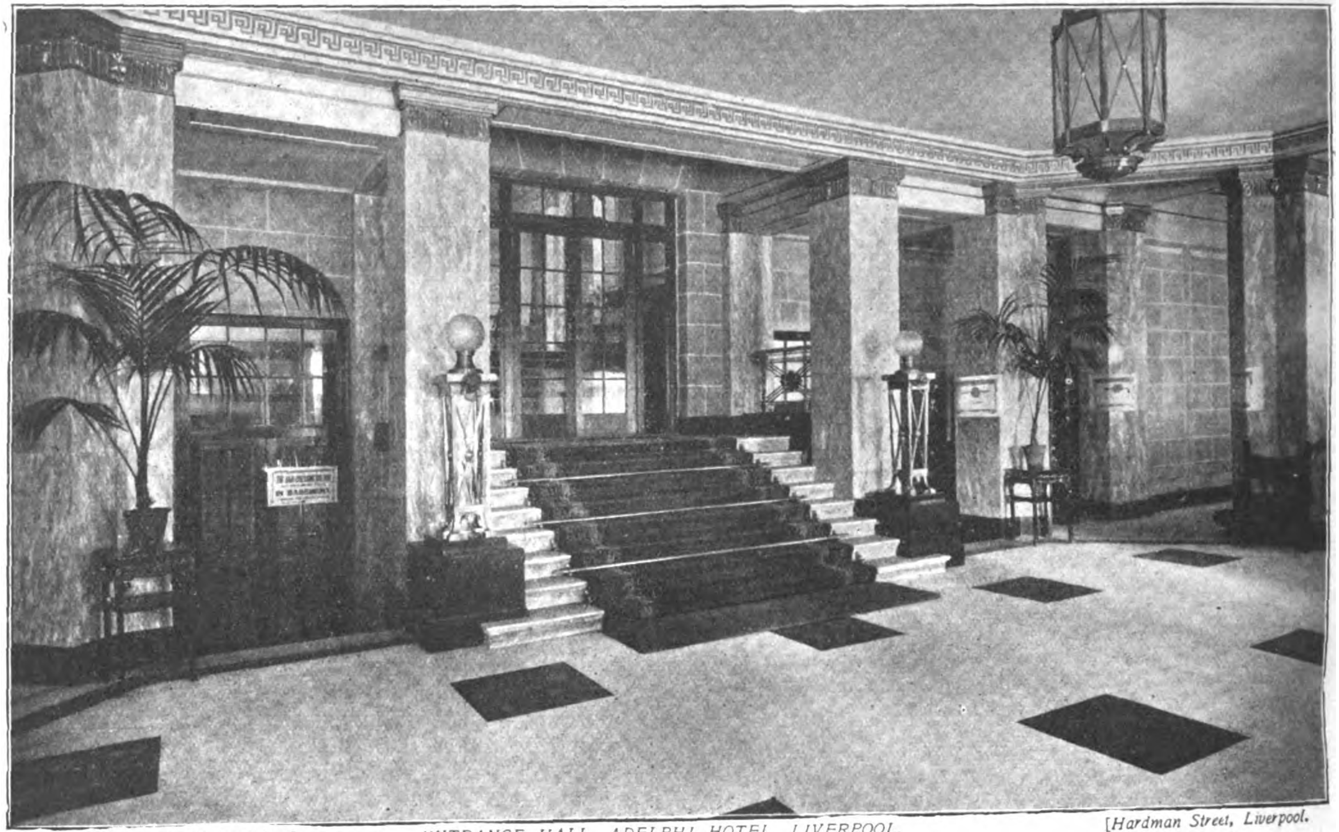

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THE ARCHITECT

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FORTHCOMING EVENTS.

Saturday, June 13.

Architectural Association : Visit to Great Maytham and Great Dixter (Mr. E. L. Lutyens, architect).

Monday, June 15.

Royal Institute of British Architects : Special General Meeting (Architectural Defence Union) at 8 P.M.

Wednesday, June 17.

Royal Institute of British Architects : Annual Dinner, Hôtel Cecil, at 7.45 P.M.

Monday, June 22.

Royal Society of Antiquaries of Ireland : Summer Meeting at Dublin (June 22-27).

WORKS IN WOOD AND WOOD-CARVING.

The eighth exhibition of Works in Wood and Wood-Carving, now being held by the Worshipful Company of Carpenters at their hall in London Wall, is no whit behind its predecessors in attractiveness. Although one may naturally feel greater pleasure in examining the high-class furniture work, the excellent wood-carving and the highly interesting loan collection, it is only due to the primary object of the exhibition, the improvement of the carpenter's craft, to give our first attention to those exhibits that show the skill and study of young carpenters.

Division I. of the exhibition comprises "models in constructive carpentry in which the object shall be to obtain strength with a minimum of labour and material." Class I. of this Division has for its subject "a mansard roof truss, 30 feet span, prepared for covering, and showing the construction of at least one dormer with elliptical frame." There are but two competitors, and the first prize is awarded to a model, well finished of planed-up material, by Samuel Gott. The second prize is given to E. P. Brewster, whose model is in the rough, and therefore perhaps more truthful, but the joints are imperfectly made, and therefore, in our opinion, the prizes are rightly awarded.

In Class II. the subject is an "open timber roof for small building, span 35 feet." The first prize is awarded to a well-finished model of a roof, with low collar beam and curved braces beneath, which latter are cut from the solid in what, in reality, would be impossible sizes without scarfing, of which there is no indication in the model. This is a point to which the instructors of young carpenters should direct the attention of their pupils. It is very easy to show on a drawing or in a model curved members in one piece that in the full size of execution would be beyond the limits of obtainable timber; and the young designers should be induced to show how their ideas could be carried out in actuality. The second prize is awarded for a model which is better in principle though not perhaps in execution.

The subject for Class III. is "temporary centering for foot-bridge over a main road 40 feet wide." The first prize goes to Jno. Colburn for a well-finished model, and the second to W. H. Rose for a model in rough stuff but of thoroughly sound design. Both models err somewhat on the side of heavy weight, but are superior to their competitors. A very interesting subject was set for Class IV., "framed centering with shuttering complete for a reinforced concrete dome with radiating ribs." The difficulty of the problem was enhanced by the stipulation that the dome was to be elliptical on plan. Of the five models submitted three received prizes, and they well deserved them, the recipients being F. E. Olliver, L. T. Buckley, and A. B. Henbest, the last receiving a special award "for originality and skill in design." This competitor arranged a separate truss for each rib of the dome with a trussed square tower in the centre receiving their upper ends.

Shoring formed the subject of Class IV., for which was required "a model showing one of the necessary flying shores between two warehouses on either side of a 20-foot road, one of which has been seriously damaged by fire for a length of 25 feet, and from ground to full height." The winner of the first prize, A. B. Henbest, very sensibly arranged his shore to support the damaged wall only; but being, possibly, apprehensive that this might not be considered a "flying" shore, submitted also a model of a more normal system of flying shores, with "raking shores to support inside of building," for which he was awarded also the second prize. This second model is, in our opinion, faulty in that it shows needles to the wall end of struts but no wedges at the other. If such needles are used wedges are practically imperative, and can only be dispensed with to struts when these latter abut against cleats.

An interesting problem was set in Class VI., "a foot-bridge across deep water, 23 feet wide, in a public park." Some of the models submitted showed pretty designs, lacking in constructive skill; the wiser competitors made their handrail and posts part of a truss of efficient depth. The winner, J. P. Blake, adopted a king-post truss, and gave effect to his design by the use of curved ends on plan at each end of his bridge. The second prize was given to W. Orchard, whose truss was a simple king post intersecting vertical compression members, each tied up by rods—quite a clever and sensible arrangement. A bronze medal was awarded "for originality and skill in design" to J. C. Archbold, who adapted a queen-post truss in quite a clever fashion, the queen post being carried up to form a central feature. The design of this model was undoubtedly skilful and architecturally good.

We now come to Division II., which consisted of carpentry, in which it was laid down that "competitors should aim at architectural and picturesque effect combined with strength and economy in material and labour." Class I. in this Division presented "a permanent timber band-stand for an open space." All the exhibits are fairly good in design. The first prize is awarded to J. E. Mills for the model showing the best workmanship, that of the second prizewinner, Harold Ashworth, being inaccurate in the finish of details. In Class II. the subject was "a roof of any traditional English construction in oak, with or without trusses." The first prize went to J. H. West, for a quasi Early English roof with diagonal tied rafters and curved braces beneath. These, however, showed too few scarves for the model to be correct. The second prize went to a very commendable effort by H. H. Young, aged sixteen, whose circular trusses to collar beam were more sensibly scarfed. An open porch, with room over, in half timber work was the subject in Class III., and the prizes were awarded, apparently, according to the extent of elaboration in order to L. E. Trevers, E. J. Beesley, and William Bodger.

Division III. related to joinery, and the subject for Class I. was "an open newel staircase, with straight uncut string." The author of the model awarded the first prize, W. S. Hales, carried his main newel posts from floor to ceiling, and worked them into a screen with excellent effect, albeit in detail there is some confusion of period between motifs of the seventeenth century and others of late eighteenth-century date. The second prize was given to Ernest Atkins, with a special medal "for design and craftsmanship" to a more correct design with ramped handrails, turned balusters and newels of eighteenth century flavour.

A staircase for a circular hall, with a single straight flight to a half-landing, attracted, in Class II., a good number of competitors, and the first prize was won by A. E. Atkins, with an excellent model in mahogany, having square turned balusters. The second prizewinner, H. A. Fox, contented himself with cut balusters. In Class III. W. J. Seabourne won first prize for a piece of English oak panelling, with eight well-worked linen panels, the mouldings around which were worked with rounded mitres. Class IV. for a panelled door in English oak, and Class V. for a ledged door, did not receive any remarkable work, though a second prize was given in the former to an apprentice, F. A. Crandell. Class VI. for "any other piece of soundly constructed joinery not coming under any of the above heads" is chiefly remarkable for a spherical headed and panelled niche, with laminated panels, for which George Austin, aged seventeen, was very rightly awarded the first prize and gold medal for best exhibit in Division III.

As usual at these exhibitions of the Carpenters' Company, a very fine collection of carved work is on view, grouped in Division IV. for professionals and Division V. for amateurs. It is, however, a little difficult for us to understand the Worshipful Company's definition of an "amateur," as not only do the amateurs compete for money prizes, but many of them, including prize-winners, offer their exhibits for sale. Nor is there, on the whole, any great distinction in excellence between the work of the professional and the *soi-disant* amateur. It is impossible for us to notice all the meritorious instances of the 126 specimens of wood-carving, but we may call attention to the fine craftsmanship of Thomas Colley, the winner of the gold medal for best exhibit in the two Divisions IV. and V. devoted to carving. Mr. Colley's work is equal in skill to that of Grinling Gibbons, though the design is somewhat incoherent. A notable piece of wood sculpture is a life-size "Nubian Goat's Head," by William Andrews.

There is the usual collection of excellent furniture, in which inlay is a special feature, and in most cases admirable design, as in the china and music cabinet by William Willingate, but in some instances misapplied "clever craftsmanship and ingenuity," as in the fancy—very fanciful—table, carved and inlaid, by Augustus Ferrier.

The Loan Exhibition includes some interesting old furniture lent by the Worshipful Company of Joiners, the Shakespear Lodge of Freemasons, the Worshipful Company of Coach-Makers and Coach-Harness Makers, the Library Committee of the Corporation of the City of London, J. Seymour Lucas, Esq., R.A., the Worshipful Company of Parish Clerks, and others. A collection of specimens of rare and interesting timber lent by Messrs. W. W. Howard Brothers & Co. is also well worthy of attention.

NOTES AND COMMENTS.

THE question of the sub-division of the diocese of Winchester, which is the subject of a report recently presented by a special committee appointed by the Bishop of Winchester, appears to turn very largely upon the future of the episcopal palace at Farnham. The otherwise favoured idea that a new diocese should be created of the county of Surrey labours under the disadvantage that Farnham Castle is in that county. Consequently the Bishop of Winchester must reside outside of his reduced diocese or the new diocese of Surrey cannot be co-terminous with the county, for it seems to be regarded as a postulate that Farnham must remain the official residence of the Bishop of Winchester. After discussing this question and the financial aspect, the committee in their report make the following recommendations:—

(*a*) That the principle should be accepted that the present diocese of Winchester be reduced in size

(*b*) That the diocese of Winchester should express its willingness to co-operate with the dioceses of Southwark and Canterbury in the formation of a new diocese as soon as Church opinion in these dioceses shall have expressed a desire for it.

(*c*) That a committee be appointed by the Bishop of Winchester to consult with the Bishop of Worcester's committee as to any fresh diocese that may be proposed.

(*d*) That immediate steps should be taken for the formation of another archdeaconry in Hampshire.

(*e*) That the respective salaries of the bishops suffragan should be raised to £1,000 a year, with allowance for a house; and that the Dean and Chapter of Winchester Cathedral should be asked to assign an official stall in the cathedral to each of the bishops suffragan.

(*f*) That part of the park at Farnham Castle be sold if the permission be obtained to employ the proceeds for diocesan purposes.

(*g*) That in order to obviate the difficulties experienced by representatives attending diocesan committees at Winchester, certain sub-committees should be appointed to meet at a convenient centre in Surrey.

For efficient smoke abatement there can be no doubt that a cheap smokeless fuel is a desideratum, and hence we await with interest the result of the decision of the Gas Committee of Glasgow Corporation to recommend the Town Council to accept an offer by Mr. R. Maclaurin to erect, as an experiment, at a cost of £400, at one of the gasworks, plant capable of dealing with 20 tons of coal per day, for the manufacture of a smokeless fuel. It is also recommended that it be remitted to the special sub-committee in charge of the matter (*a*) to negotiate with Mr. Maclaurin as to the terms and conditions which he is prepared to grant to the Corporation in the event of their desiring to erect installations of his plant at the gasworks; and (*b*) to see the work carried out in connection with the experiment now proposed to be made.

In the Maclaurin process, which the Gas Committee have recommended for trial, the unit plant is supposed to be capable of dealing with a ton of coal per hour, the heat necessary for carbonising being generated internally. If the experiment bears out the claims of the inventor a very important advance in coal distillation will have been made. The theoretical and practical difficulties have been considered by the heads of the Gas Department, and so far as difficulties that can be foreseen are concerned these have been carefully provided against. Without trial, however, it is impossible to say whether any unknown factor may arise which will militate against the success of a process which appears very promising upon paper.

It can hardly be contended that open public competitions amongst architects are in all cases advisable when public bodies need their services, and, as far as the facts before us go, we think the Southampton Endowed Schools Governors are right in deciding to appoint as architect for a school for 480 places, at a cost limit of £45 a place, one of their own citizens who has already won his spurs as a school architect.

It is a matter for satisfaction that the fire which threatened the destruction of one of the famous "rows" of Chester was limited in extent. The threatened Northgate Row is one of the principal streets of Chester, which have the roadways sunk considerably below the level of the footways. They were cut out of the rock by the Romans. These streets exhibit the curious arrangement called the "rows," the footways running within piazzas covered by the upper portion of the houses, and in front of the ranges of shops, which are the chief business houses of the city. Flights of steps at convenient distances connect the carriageways with the footways, or "rows." There are also shops and warehouses below the "rows." These features, together, of course, with the ancient walls and the quaintly carved gables of many of the houses, give Chester its antique and picturesque appearance.

A special committee appointed by the City Council of Liverpool to consider the question of Corporation leaseholds has now presented its report, and recommends an alteration of the present usual system of leases for seventy-five years with fines—or premiums—upon renewal.

The conclusions at which the Special Committee have arrived, and the recommendations they make, are as follow:—

(1) The present system regulating the renewal of Corporation leases requires modification and improvement, both in the interests of the Corporation and of the lessees.

(2) No further renewals on the present system should be permitted after December 31, 1919.

(3) After the acceptance of this report by the City Council all new leases of property in possession of the Corporation should be granted only for a term of ninety-nine years, except in special cases when it may be considered desirable to grant a longer or a shorter term.

(4) After December 31, 1919, renewals of leases should under ordinary circumstances be granted only for a term of ninety-nine years.

(5) Such renewals should be made on payment of a fine, the amount to be arrived at on a valuation made by the Corporation surveyor, based on the facts in each case, and approved by the Estate Committee, and the use of the "card" should be discontinued.

(6) Any applicant for renewals who may dispute the amount of his fine may, if he wishes, be heard personally, or by his solicitor or surveyor, before a sub-committee of five members of the Estate Committee to be appointed at the commencement of each municipal year, and to be called the Leasing Sub-Committee.

(7) The commutation of a part or the whole of the fine into a ground rent should be permitted at the request of any applicant under conditions approved by the Estate Committee, due regard being had to the security for such ground rent afforded by the property included in the lease.

(8) All applicants for renewals prior to December 31, 1919, should be given the option of renewing their leases for seventy-five years at a fine calculated upon the present system, or for ninety-nine years at a fine calculated on a valuation made in accordance with Paragraph No. 5, and with the right of being heard in accordance with Paragraph No. 6.

(9) The Corporation should obtain legal powers to deal with the fines as wholly or partly capital, instead of their being, as now, necessarily treated as income for the year in which they are received.

(10) When such powers are obtained the average annual amount received from the renewals of leases during the preceding seven years should be calculated and be called "the maximum income from fines."

(11) Thereafter the proceeds of fines in any year should be applied to current income up to such an amount as will, with the annual rents received from the commuted ground rents under Paragraph 7, and with the income from the investments under Paragraph 12, be equal to "the maximum income from fines" under Paragraph 10.

(12) The proceeds of fines received in excess of the amount applied to current income under Paragraph 11 should be invested, and the annual income from such investments should go towards the "maximum incomes from fines" under Paragraph 10.

(13) So soon as the annual ground rents receivable under Paragraph 7 and the income from investments under Paragraph 12 together amount to "the maximum income from fines" under Paragraph 10, the whole of the future proceeds from fines should be invested, and the interest therefrom should be applied in aid of the city fund.

(14) The condition of the leasehold area (that referred to in Abercromby Ward) should be carefully considered with a view to its improvement, possibly by the adoption of some scheme under which the whole or a part of the capital required for its improvement may be advanced to the lessees, and be repaid over a period of years.

(15) A Bill should be promoted in the next session of Parliament to give legal sanction to all the above recommendations which require it, even though it might be possible to obtain authority for some of them by departmental orders, it being, in the Special Committee's opinion, very desirable that the whole of the Corporation's powers and duties in the matter should be found by reference to a single document.

COMPETITION NEWS.

Ashton-under-Lyne.—The Education Committee have decided to invite Ashton-under-Lyne architects to submit competitive plans for the erection of an elementary school in Mossley Road, to replace the Albion school, and to offer premiums of £20, £10, and £5 for the designs which are placed first, second, and third respectively, subject to the condition that the architect who is eventually entrusted with the carrying out of the work shall receive no premium.

Australia.—The Royal Agricultural and Horticultural Society of South Australia (Incorporated) is inviting competitive designs for the laying-out of their new show grounds, situated at Wayville West, near Adelaide. A detailed survey plan of the property has been prepared, and a copy of this, together with a pamphlet containing information of what is required, may be had on application to the Secretary, Royal Agricultural Society of England, 16 Bedford Square, London, W.C. The premiums offered are: For the first approved design, £500; for the second approved design, £200; and for the third, £100. In judging the designs submitted, the Society reserves the right to select and call in the services of one or more architects of acknowledged ability and standing in the profession, who are not connected in any way with the competition, and such other experts as may be considered necessary and advisable. The awards of the Society will be final.

Cardiff.—The Housing Committee have agreed to invite competitive designs for a housing scheme proposed to be carried out on the site near Portman Moor Road, offered by the Bute Estate on lease at £30 per acre.

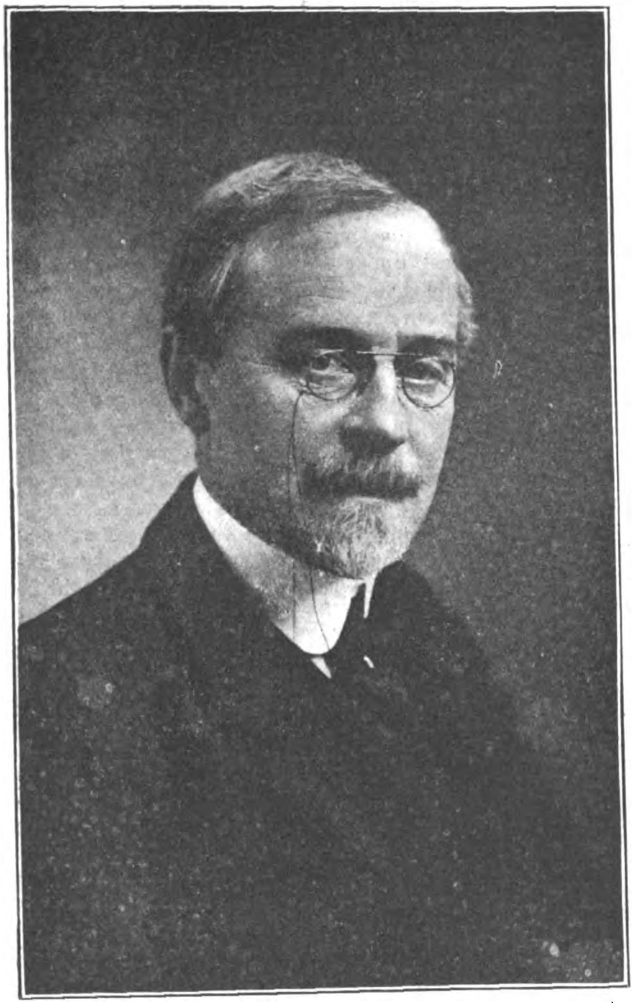
Gateshead.—The Education Committee invite designs for a school to accommodate 700 scholars, which is proposed to be erected in King Edward Street, Sunderland Road.

Hastings.—The Town Council, at a meeting last week, agreed to a recommendation from the Improvements Committee to request the President of the Royal Institute of British Architects to nominate an assessor to judge the competitive designs for the Kursaal when the same were obtained.

LEEDS.—In the limited competition recently held for the Grove Hall Church, schools, and caretaker's house, the assessor, Mr. W. H. Dinsley, has given his award in favour of the design submitted by Messrs. George Baines & Son, of 5 Clement's Inn, Strand, London. The estimated cost of the buildings is £6,400.

SEVENOAKS.—The Rural District Council have adopted the competitive plans submitted by Mr. M. Maberley Smith, of 55 Berners Street, Oxford Street, W., for eight cottages they propose to erect at Westerham at a cost of £1,700.

THE NEW R.I.B.A. PRESIDENT.



[Photo by Elliott & Fry, Ltd

Mr. ERNEST NEWTON, A.R.A.

ILLUSTRATIONS.

SS. MARY AND NICHOLAS GIRLS' BOARDING SCHOOL, HARROGATE.

OUR illustration is a reproduction of the drawing now exhibited in the Royal Academy of the design for a First-grade Girls' Boarding School of the "public-school" type for erection in the neighbourhood of Harrogate. The building is placed on the highest level of a site sloping to the south and east, and has the playing fields stretching in front of it. Besides class-rooms, mistresses' rooms, &c., the school, which is arranged, as regards its main accommodation, on a ground and first floor, has an assembly hall accommodating upwards of 300, and a very complete equipment of lecture-rooms, art-rooms, music-rooms, gymnasium, and every variety of provision that finds its place in a modern first-rate school. There are also four boarding-houses providing for about 140 pupils besides mistresses and the considerable staff of servants. The position of a chapel is shown, but the building is not included in the design.

The group of buildings comprises a central school block, with the boarding-houses on the two wings enclosing a quadrangle or playground. The design, which is in an Early Georgian style, would be carried out in purple-brown brick, with red-brick and stone dressings and roofs covered with tiles.

The architect is Mr. H. P. Burke Downing, F.R.I.B.A.

MEMORIAL CHURCH OF THE ROMANOV TERCENTENARY AT ST. PETERSBURG.

THE occasion of the tercentenary of the House of Romanov, which fell during the past year, has been marked in St. Petersburg by the building of a memorial temple.

The task of erecting the monument was entrusted to Mr. S. Kritchinsky, who designed and supervised the construction of the building, of which we reproduce a photograph. We borrow some interesting facts concerning the building from an article recently published by Mr. Kritchinsky in the St. Petersburg *Zodtchy*.

The temple is designed and built in the style of the Russian churches of the seventeenth century, of which the churches and "Kremli" at Rostov-the-Great are the most finished and characteristic examples. The choice of this style was, in the opinion of the architect, justified by the position of the site in a suburban district of St. Petersburg, with no surroundings of any architectural importance. Thus the motto of the modern St. Petersburg architects, that all buildings should be in agreement with the prevailing Classical style of the city, has scarcely been violated by the old Russian style of Mr. Kritchinsky's new temple. Availing himself to the full of the opportunity thus presented, Mr. Kritchinsky designed not only a single church, but a small "Kremli" with fortified walls, buttresses, and arch-gates, and the temple in the centre, high upon the wall, as if crowning the whole structure.

At present the principal portion of the scheme has been completed. It comprises the temple, consisting of two churches—lower and upper—the bell-tower, connected with the temple by a covered passage over the arch, two other towers, and a part of the wall, which is still under construction.

The lower church will accommodate 1,500, and the upper one 2,000 persons. The walls are faced with white limestone obtained from the same quarries as that with which the old Moscow churches and palaces were supplied. In the north wall of the temple a huge icon (42 feet by 14 feet), made of majolica and representing the Virgin Mary and the saints canonised during the reign of the Romanovs, has been mounted. The interior walls of the churches are to be covered with frescoes, the upper with a pattern of the seventeenth century, and the lower with one of the eighteenth century. Some of this work is already complete.

A large iconostasis (the sanctum of the Greek orthodox church, in which icons are fixed) is placed in each of the churches. Each is of carved wood and gilded, and has five rows. The chief thurible is designed to represent the crown of Michael Theodorovitch, the first Tsar of the house.

In view of the weakness of the ground it was necessary to put down a ferro-concrete foundation in the form of a block resting on very strong supports. Over this foundation a ferro-concrete framework was raised, on which rest the brick walls and all the other parts of the building. This allowed the architect to leave the middle portion of the building without supports of any kind, and to place the domes on the four crossing arches.

The floors are covered with marble in the upper church, and with limestone in the lower one. The outer door or gate is made from wrought bronze, and the interior one from carved oak, while the roofs are covered with sheets of burnished copper and majolica tiles, similar to the roofs of the Moscow towers.

It may be added that the construction of the temple with the adjoining buildings (excluding the iconostasis, icons, frescoes, bells, &c.) has so far cost nearly £60,000.

HOUSE AT TUTTINGTON, NORFOLK.

THIS old house is a specimen of several good farmhouses in the district, interesting for their happy colour schemes in brick and tile.

GATEWAY, ST. JOHN'S COLLEGE, CAMBRIDGE.

MR. ST. JOHN HARRISON's drawing shows one of the most interesting features of St. John's College, Cambridge.

OXFORD COLLEGE SERIES.—NO. 141.—MANSFIELD.

WE complete our series of illustrations of Mansfield College Oxford, with a view of the Lodge.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

A BUSINESS and special general meeting of the Institute was held on Monday evening, the President, Mr. Reginald Blomfield, R.A., occupying the chair, with an attendance of about 250 members.

The results of the annual election for the Council and Standing Committees were announced.

For the Council the following members were elected:—

President.—Ernest Newton, A.R.A.

Vice-Presidents.—Alfred William Stephens Cross, M.A. Cantab., John Alfred Gotch, F.S.A., George Hubbard, F.S.A., Henry Vaughan Lanchester.

Past Presidents. Reginald Blomfield, R.A., Leonard Stokes.

Honorary Secretary.—E. Guy Dawber.

Members of Council.—Stanley Davenport Adshead, M.A., Thomas Edwin Cooper, William Curtis Green, Henry Thomas Hare, Emanuel Vincent Harris, Arthur Rutherford Jemmett, David Barclay Niven, Alexander Nisbet Paterson, M.A., A.R.S.A., Sydney Perks, F.S.A., Charles Henry Bourne Quennell, Harry Redfern, Albert Edward Richardson, William Gilbee Scott, Ernest Richard Eckett Sutton, Walter John Tapper, Paul Waterhouse, M.A. Oxon., Herbert Winkler Wills, Percy Scott Worthington.

Associate Members of Council.—Robert Atkinson, William Robert Davidge, Leonard Rome Guthrie, Herbert Shepherd, Samuel Douglas Topley, Herbert Arthur Welch.

Representatives of Allied Societies.—Graham Clifford Awdry (Bristol Society of Architects), Robert Burns Dick (Northern Architectural Association), Frank Brookhouse Dunkerley (Manchester Society of Architects), Glendinning Moxham (South Wales Institute of Architects), Adam Francis Watson (Sheffield Society of Architects), John Watson (Glasgow Institute of Architects).

Representative of the Architectural Association.—Herbert Austen Hall.

The members elected for the Standing Committees were as follows:—

ART STANDING COMMITTEE.

Fellows.—Walter Cave, Edward Guy Dawber, H. P. Burke Downing, William Adam Forsyth, Henry Thomas Hare, Gerald Callcott Horsley, Henry Vaughan Lanchester, Halsey Ralph Ricardo, Henry Heathcote Statham, Edward Prioleau Warren. *Associates.*—Robert Atkinson, Matthew James Dawson, Sidney Kyffin Greenslade, Alfred Wyatt Papworth, Albert Reginald Powys, Arthur Needham Wilson.

LITERATURE STANDING COMMITTEE.

Fellows.—Arthur Thomas Bolton, John Alfred Gotch, Albert Edward Richardson, Edwin Alfred Rickards, Frederick Moore Simpson, Richard Phené Spiers, Charles Sydney Spooner, Arthur Stratton, Charles Harrison Townsend, Paul Waterhouse. *Associates.*—Martin Shaw Briggs, William James Davies, John Stevens Lee, William Godfrey Newton, Herbert Passmore, William Henry Ward.

PRACTICE STANDING COMMITTEE.

Fellows.—Max Clarke, Herbert Osborn Cresswell, Alfred William Stephens Cross, Matt. Garbutt, Edward Greenop, George Hubbard, Sydney Perks, Herbert Duncan Searles-Wood, Alfred Saxon Snell, William Henry White. *Associates.*—Horace William Cubitt, Percival Maurice Fraser, Edwin Gunn, Henry Albert Saul, John Douglas Scott, Herbert Shepherd.

SCIENCE STANDING COMMITTEE.

Fellows.—Harry Percy Adams, Robert Stephen Ayling, Allan Ovenden Collard, Alfred Conder, William Edward Vernon Crompton, Bernard Dicksee, Frederic Richard Farrow, George Hornblower, Charles Stanley Peach, Ravenscroft Elsey Smith. *Associates.*—Robert John Angel, Henry William Burrows, William Robert Davidge, George Leonard Elkington, Edward Stanley Hall, Ernest Alexander Young.

Mr. Leonard Stokes then moved that the names of and votes for unsuccessful candidates for the Council and Standing Committees be not made public. He thought it would be more considerate to those defeated if their names were not announced.

After some discussion, it was agreed that all the names should be announced, but not the number of votes received by candidates who were not elected.

Seven Associates and seven Licentiates, who had passed the qualifying examination, were elected Fellows. Fourteen candidates were elected Associates *en bloc*.

Sir Wyndham Portal, Bart., M.A., F.S.A., was elected an Hon. Associate, and M. Jules Brunfaut, of Brussels, and Mr. R. A. Cram, of Boston, U.S.A., as Hon. Corresponding Members.

The meeting then proceeded with the consideration of the proposals for a new Charter, adjourned from April 27.

After some preliminary discussion, Mr. W. Henry White moved the adoption of Clause 8, referring to the constitution of the board or authority to administer the proposed register of architects in the form in which it was printed.

Mr. C. Stanley Peach, on behalf of the Council, moved an amendment that registered architects who were not corporate members or Licentiates should have representation on the registration authority. He said that this amendment was put forward by the Council as a result of opinions which had been stated by various members at the last special general meeting. The Council believed that the number of extra-mural architects to be enrolled would not be very large, but there was no certainty on this point.

After Mr. Peach's amendment had been lost, Mr. S. D. Topley moved that the whole clause be referred back to the Council for further consideration. They must have a proper settlement, with no misunderstandings. A number of Associates and other members viewed the proposals with alarm, and felt compelled, though with great reluctance, to act as obstructionists.

Mr. H. W. Cubitt seconded.

Sir Aston Webb, in opposing the motion, claimed that they should vote on the principles involved, not on verbal alterations. He asked the meeting to try and make progress with the scheme.

Mr. George Hubbard and Mr. Edwin T. Hall also opposed the motion.

Mr. Maurice B. Adams suggested that the important principle was that the public interests and the interests of the Institute as a private society might come into conflict.

Mr. G. L. Elkington appealed to Mr. Topley to withdraw his motion. Another body was in the field with proposals for registration by statute, and delay might be hazardous.

The President, before putting the motion, asked Mr. Topley to give some indication for the guidance of the Council as to what grounds he wished the clause to be taken back upon.

Mr. Topley, in replying, said that the representation on the registration authority should be in proportion to the number of architects on the register, whether they were corporate members of the Institute or not. This would attract the unattached architects. He pointed out that it had already been decided that the registration authority should have no executive power, but should only report to the Institute Council. He claimed that there was no race with the Society of Architects, and no competition at all. The Society's Registration Bill was bound to fail, as it had been doing for years. If the time was not ripe for the Institute to introduce a Bill, how could the Society hope to succeed?

Mr. Topley's motion was then put from the chair and carried by 122 votes to 107.

Mr. Peach then moved the adjournment, and Mr. A. N. Paterson, of Glasgow, an amendment that Clause 10, setting out the proposed reconstitution of the Council, should be considered before any adjournment.

This amendment having been carried, Mr. Bernard Dicksee moved the consideration of Clause 9.

The President pointed out that this clause, giving the membership of the registration authority, was dependent on Clause 8, and must be deferred.

Mr. Peach moved Clause 10, and Mr. White seconded.

Mr. Sydney Perks moved an amendment that members of the allied societies should not have a larger representation on the Council than the Associates of the Institute. As a preliminary point he wished to praise the very useful work that the allied societies always did in the provinces. He claimed that the clause was very hurriedly decided upon by the Council. It was proposed to increase the Council from forty-two to about fifty-eight, but he thought the Council was already too large. They had one member of Council to fifty-four ordinary members, but the Surveyors' Institution had only one to 143, and the Institute of Civil Engineers one to 262. The representatives of the allied societies were to be increased from nine to eighteen or more, and there were 1,939 members in these Societies. There were about 1,700 Associates, and they would only return ten members. Under the proposed scheme a Society of fifty architects' could be formed, with only one Fellow of the Institute, who would represent it permanently on the Council—"a nice little pocket borough." The Institute did not obtain any money from the allied Societies, but paid them nearly £600 a year, and this sum would be increased. He asked for justice for the Associates.

Mr. Hubbard wished to point out that the Institute was not a London Society, and there should be no London monopoly. Provincial representatives could not attend every meeting, and the average Council consisted of twenty-five London and three provincial men.

Mr. Hall supported Mr. Perks. The ordinary members of the Council were elected by provincial men just as much as London men. Thus the provincial members had a double representation. He thought a Council of forty-two was quite sufficient.

Mr. Paterson opposed the amendment. He recognised that there must always be a vast majority of London members present in the meeting hall. He was the only representative of Scotland present, and had to take a long journey from Glasgow and to lose three days of his time in order to attend. A separate organisation North of the Tweed had been proposed, and might come to pass in the future. There were Scottish engineering institutes working in harmony with English ones. Scotland held seventy-one Fellows, fifty-nine Associates, and 136 Licentiates, and had only one member of Council.

Mr. Hastwell Grayson (Liverpool), in supporting Mr. Paterson, said that the direct vote for the ordinary members of Council had no value to provincial members. They were prepared to abandon it, if it was possible to do so. Provincial members were often unable to distinguish which candidates were most suitable for ordinary membership of the Council. They sometimes saw their work illustrated, but that was no guide. They must remember that artistic ability and administrative capacity seldom went together. He had found, while sitting on the Council, that some of the members who were comparatively unknown possessed great business capacity. Questions from various parts of the British Isles came before the Council from time to time, and they must have the advice of provincial members with local knowledge.

The President said that he wished to correct a statement made by Mr. Perks. The clause in question was not hurriedly carried by the Council. They gave it proper consideration, and the sub-committee discussed it for several days. He thought that, as the Institute hoped for a wider area of influence under the new Charter, the clause was a very important one. He suggested that, as the hour was getting late, a further opportunity of considering it should be allowed.

Mr. Hubbard thereupon moved the adjournment, Mr. Max Clarke seconded, and the meeting broke up at 10.55 P.M.

WEST DRAYTON, HAYES, AND HARLINGTON.*

By Alan F. Tope.

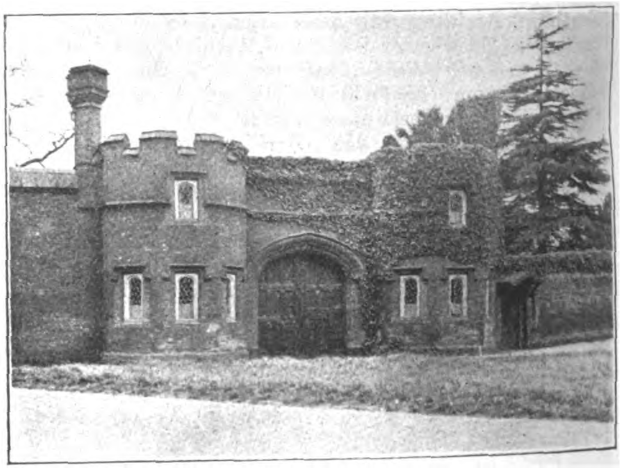
Although but a short dozen miles from the Metropolis, and situated in the flattest of flat country, the three villages of West Drayton, Hayes, and Harlington retain much of their rural character, and although each has its suburban section of modern villas grouped round the railway station, there is still an old-world part to each, with the parish church as its centre.

We first hear of West Drayton in the year 989, when the manor was granted by King Athelstan to the Dean and Chapter of St. Paul's, in whose possession it remained until 1547, when it was given by Henry VIII. to Sir William Paget, Henry having obtained it by exchanging for it the parish of Charing, in Kent. On account of the attainder of Thomas, Lord Paget (Sir William's successor), in 1587, through his adherence to the Roman Catholic faith, the manor was forfeited to the Crown, and passed on to Sir Christopher Hatton, and after him to Lord Hunsdon. It then came once more into the Paget family, being granted to William, son of the Lord Paget previously mentioned. From that time it remained in the possession of the family until 1786, when the manor-house was pulled down, and the property was sold to Fysh de Burgh, in whose family it has since remained.

The present manor-house is known as Drayton Hall, and, as it is not much more than a hundred years old, there is nothing much of historical interest in connection with it. About the only fact worthy of note is that Napoleon was entertained there for some time during the period in which he was forced to be absent from his own country through the embarrassing attentions of his ill-wishers. The old manor-house, which was demolished in 1786, was situated quite close to the church, as is obvious from the fact that the gate-house—all that is left of the old building—is just by the churchyard gates. This was in all probability the entrance to the stables, as it is surmised that the main entrance to the house faced the fine avenue of trees which stretches away down the road towards Harmondsworth.

There is another and smaller manor within the parish, known now as Drayton House, which was in the fifteenth century and later in the possession of the Burgh family, who, strangely enough, are quite distinct from the De Burghs of Drayton Hall. It is stated that the old mansion of the Burghs was called Burroughs, probably a corruption of their name, but this may or may not be the case. It is also stated that local tradition has it that the remains of Oliver Cromwell, when he was exhumed from Westminster Abbey, were laid to rest again beneath the floor of the hall here; there is, however, no authority for this story, and it may probably be regarded as incorrect.

The parish church of St. Martin is an interesting flint and stone building, mainly of fifteenth-century work. Of the original early thirteenth-century building the picturesque crumbling tower and a piscina in the sanctuary are the only parts still existing, these dating back to the time of King John. The church consists of a three-bayed nave with clerestory windows (a very unusual feature in Middlesex), chancel, and north and south aisles, with a vestry to the north of the chancel. The chancel has been raised well above the level of the nave floor, this being probably done in the sixteenth century, at the time when a vault was put in for members of the Paget family. While on the subject of this vault it is rather curious to note that the coffins were placed in it perpendicularly instead of horizontally, as is usual, and remain so to this day.



MANOR HOUSE GATE, WEST DRAYTON.

Probably the most interesting feature of the church is the fine Perpendicular font, which is considered to be unique. It is of fifteenth-century workmanship and is very elaborately carved, with an octagonal bowl standing on a slender central shaft surrounded by open panel work, which gives a very beautiful effect to the whole thing. The eight faces of the bowl are shaped in the form of panels carved in high relief; on three of them are represented the Crucifixion, Our Lady of Pity attending a sick person, and a sculptor at work on some foliage; the other five are carved with angels bearing shields The base of the font is octagonal, and supports the central shaft by four grotesque figures shaped like seals, one of which wears a sort of jester's cap.

There are numerous monuments and brasses in the church, some being exceptionally good. The earliest brass is one on the chancel floor, dated 1406, to Richard Roos, mercer and citizen of London; others are Robert Machel, a servant of Lord Paget's, 1557; James Goode, a famous physician, 1581; and John Burnell, officer of the cellar, 1551. The latter is placed on the south wall of the nave, and probably covers up a thirteenth-century piscina. There are numerous memorials to the Pagets and De Burghs, and also one to Rupert Billingsley, captain of the Royal George, 1720.

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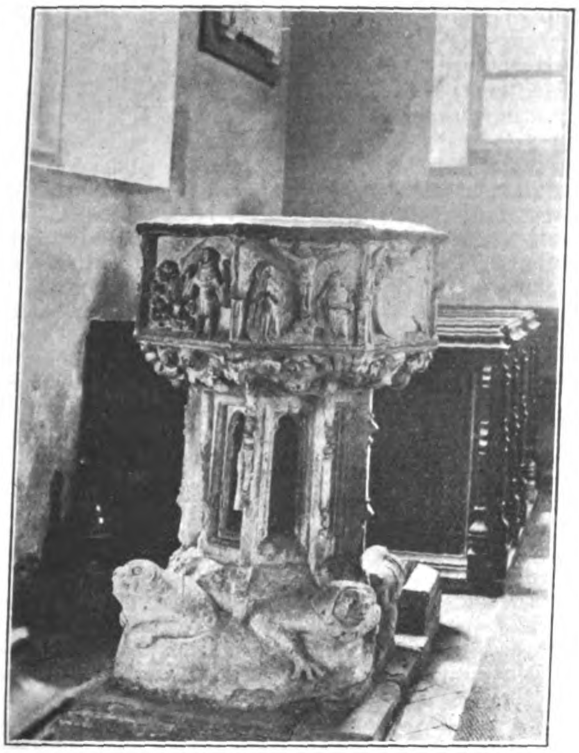
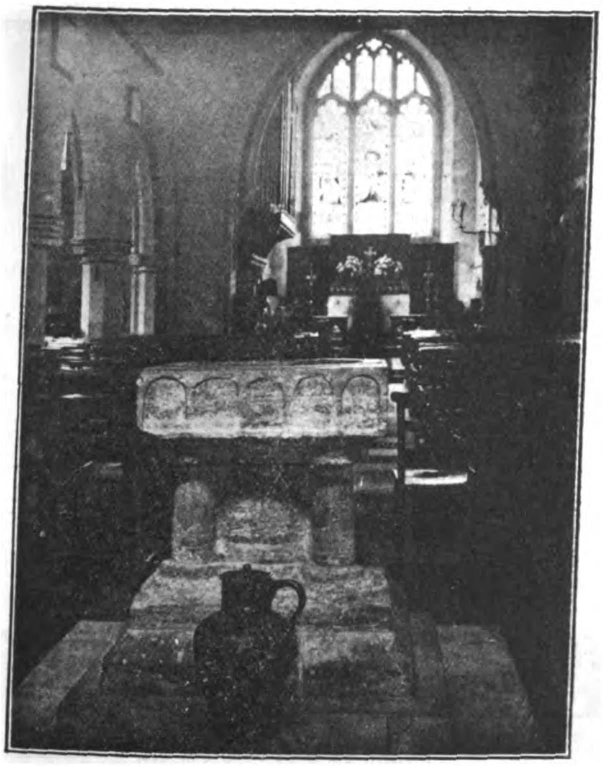
* Read at a meeting of the Upper Norwood Athenæum.

The church is justly proud of its Eucharistic vessels, both chalice and paten being dated 1507-8. The registers date from 1568 for baptisms, and from 1570 for marriages, and contain several interesting entries.



FONT, WEST DRAYTON.



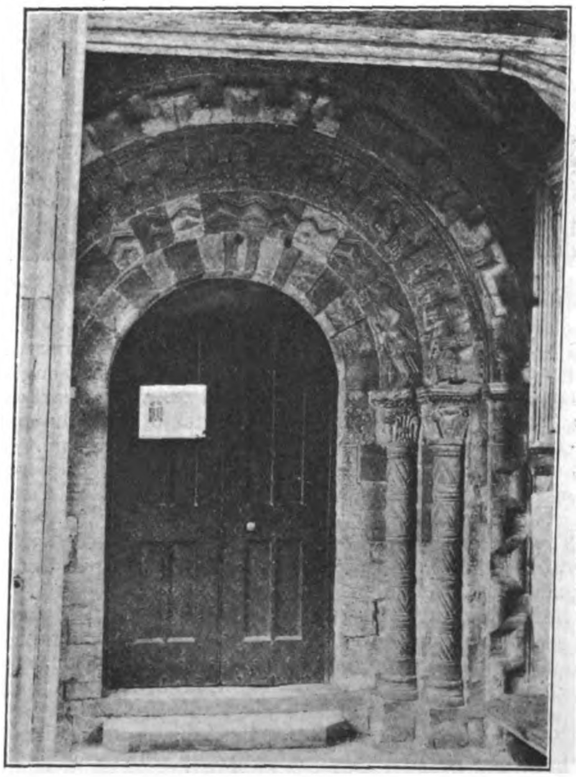
FONT, HARLINGTON

About two miles to the south-east of West Drayton lies the village of Harlington, mentioned in Domesday as Herdintone. The manor changed hands many times until, in 1607, it passed from the Lovell family into the possession of Sir John Bennet, whose family managed to keep it for several generations. A grandson of his, Henry Bennet, was one of the members of Charles II.'s notorious Cabal. When he was raised to the peerage he decided to take his title from the property which he held at Harlington, but through an unfortunate but easily understandable error the man who was making out the patent (evidently a Cockney) left out the H, with the result that the new peer was entered as Lord Arlington; and Arlington the name remains to this day. The earldom is now extinct, the barony being numbered among the junior titles of the Duke of Grafton, but the name still survives in Arlington Street, Piccadilly. After the Bennets, the manor passed to the Tankervilles, then to Lord Bolingbroke, and now is owned by the Fitzhardinge family.

There is another manor within the parish, that of Dawley, mentioned in Domesday as Dallega, which is held, and has been held since the end of the seventeenth century, by the De Salis family. The mansion was pulled down in 1739, but at Dawley Manor Farm, which is almost opposite the church, traces of a moated grange have been discovered.

The church of St. Peter and St. Paul was very drastically restored in 1880, but, in spite of the new-looking exterior, there are many fine pieces of early architecture remaining. The original church we know nothing whatever of, as it is not even mentioned in Domesday, and the earliest work now in existence is of the early Norman period. It is, in fact, highly probable that the church was entirely rebuilt soon after the Norman Conquest. Of that church there still remain the beautiful south doorway, the font, and several portions of the walls, with two windows. The Norman structure was left very much as it was for two or three hundred years, but in the fourteenth century the chancel was rebuilt, and in the fifteenth century the nave was partially rebuilt in the Perpendicular style, and the tower and porch were erected. The north aisle was added at the restoration of 1880.

The south doorway just mentioned is by far the finest piece of Norman work in Middlesex. It is of three deep orders within an ornamented containing arch, and has two nook shafts on each side supporting the arch. These latter are, however, modern, being copies of the originals. The three members are beautifully carved, the inner with zig-zag ornament, the outer with embattled roll moulding, and the middle with grotesque cats' heads, the whole being exceedingly well preserved. It is rather curious that the porch, which is of fine old fifteenth-century timberwork, is too narrow for the doorway, and was probably made for another building, or may possibly have been originally in use as the lych gate of the church.

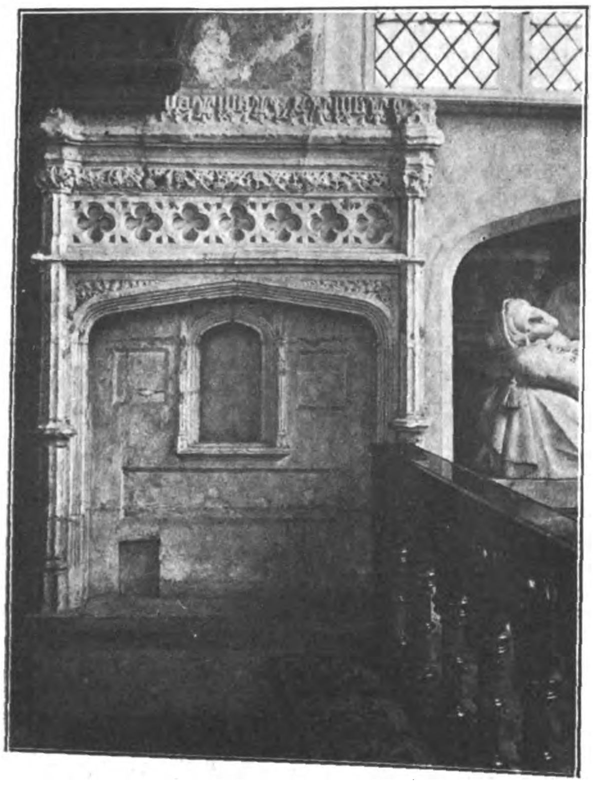


SOUTH DOORWAY, HARLINGTON.

The two Romanesque windows remaining are perfectly plain, one, just west of the porch, being in its original position, and showing the great thickness of the walls by the deepness of its splaying. The other Norman window is in the wall of the north aisle, having been moved back from its position in the nave when the aisle was added in 1880. The font is a very good Transition-Norman one of the usual square bowl shape. It is of Purbeck marble, and the lead lining of the bowl is the original. It is curious to note that there are only five round-headed panels cut in the western face of the bowl, while the other three have six each.

One of the proudest possessions of the church is the beautiful Easter Sepulchre, which is in the Perpendicular style, and has a very finely-carved square top, with a recess beneath a depressed arch. It was originally placed as a canopy on top of an altar tomb which contained the brasses of Sir Gregory Lovell and his wife Anne; the altar tomb has now, however, been broken up, except the top slab containing the brasses, which was moved bodily to an upright position in the south wall of the chancel, and the Easter Sepulchre now stands opposite it in the north wall. On the brass, which is dated 1545, Sir Gregory Lovell is represented in armour, and his wife in the usual dress of the mid-sixteenth century, and beneath is the inscription, on a palimpsest brass, on the reverse of which is another inscription, dated 1513, to George Barlee.

The earliest brass in the church is one in memory of John Monemouthe, a former rector of the parish, who died in the year 1419. It is now on the north wall of the chancel, but its original position can still be seen on the floor at the east end of the nave, where the matrix of the brass remains.



EASTER SEPULCHRE, HARLINGTON.

It is a half-length effigy, about 11 inches high, representing Monemouthe in full Eucharistic vestments, and although the graving is quite plain, it is nevertheless very clearly cut. The prayer for the departed soul is erased from the end of the inscription, as also is that on the Lovell brass. This was evidently done by a friendly hand, in order to save the brass from total destruction at the hands of the Commissioners of Edward VI.

The principal memorial to the Bennet family is a large mural monument on the south wall of the nave, to Sir John Bennet, 1686.

Before leaving the description of the church, I must not forget to mention the splendid yew tree in the churchyard, which is reputed to be 700 years old and the second largest in England. It was formerly an annual custom for the parishioners every Whitsun week to clip it into a most extraordinary and ugly shape, but, fortunately, since 1825 it has been allowed to grow naturally. It is only 47 feet in height, but an idea of its tremendous size may be obtained from the fact that 5 feet from the ground the trunk measures 21 feet in circumference.

Several of the rectors of Harlington became famous men, particularly John Kyte and Joseph Trapp; the former, with the influence of Cardinal Wolsey, became, after he left the parish, Bishop of Carlisle and subsequently Archbishop of Armagh, and was one of the prelates who accompanied Henry VIII. to the Field of the Cloth of Gold. The Rev. Joseph Trapp was rector from 1732 to 1747, and is chiefly known as a poet of sorts and as the translator of Virgil. His monument may be seen in the chancel of the church, but the verse is not a very striking example of his literary powers. It runs thus:—

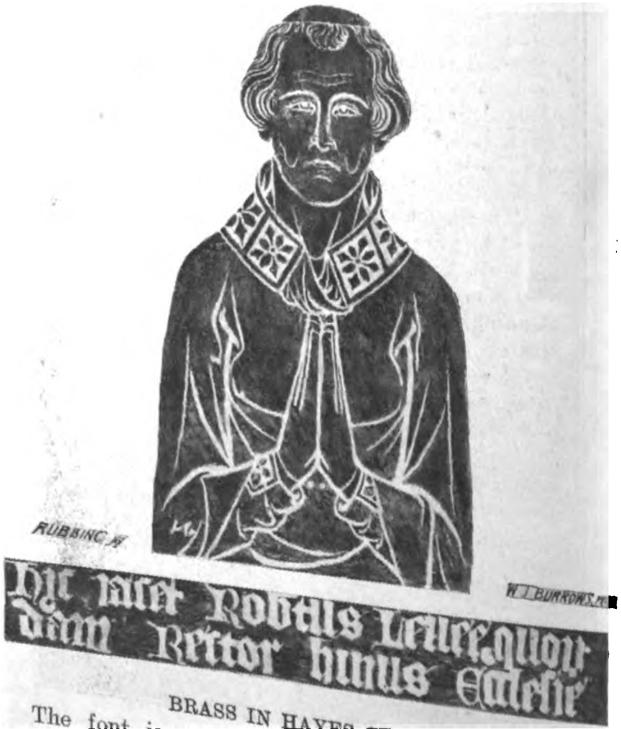
> "Tho' dead I preach, if e'er with ill success,
> Living, I strove th' important truth to press,
> Your precious, your immortal souls to save,
> Hear me, at least, oh hear me, from my grave!"

The village of Hayes, about two miles north of Harlington, has, unfortunately, been much modernised, but even the advent of the jerry builder has not been able to take away the charm of the old church. Although that is about the only old building left, the parish was in existence long before even that was built, for we first hear of it in 830, when it was bequeathed by a priest named Walberdus to the church at Canterbury. For more than five centuries from that time it was connected with the church, and it is probable that most, if not all, of the Archbishops of Canterbury visited it until, in 1543, it was surrendered to the Crown by Cranmer. We know of one, at least, who stayed at Hayes, Anselm, who, somewhere about the year 1094, was forced to dwell there by the command of William Rufus during his quarrel with him over the evil life of the Court at that time. We hear again of Hayes in 1665, when it was popular as a health resort during the Plague. The old manor-house occupied the site of the present rectory, and traces of the moat are still to be seen in the garden.

The church of Our Lady, a flinted structure, was restored in 1873 by Sir Gilbert Scott, and consists of nave, aisles, chancel, and a large embattled tower of three storeys. Originally at the east end of each aisle there was a chantry chapel, but these have now been amalgamated with the aisles, the old oak screens being seen at the west end of the nave, where they are used as wall panels.

There is a good proportion of old woodwork in the church. The roofs of the nave and aisles are of the mid-sixteenth century, and that of the chancel dates back to 1220. Its peculiar rounded shape, resembling very much the hull of a ship, is very noticeable. The south porch is also of good timber work, and the lych gate is the original one, being worked on the old-fashioned principle of the central pivot.

On the north wall of the aisle there is a rather washed-out fresco of St. Christopher carrying the Child Christ across the river. It is done in very bright colours, and in addition to the principal figure in it there can also be distinguished in the water a crab, an eel, a flatfish, and a mermaid. There are traces of colouring on the two western piers of the north arcade, but these are only very faint.



BRASS IN HAYES CHURCH.

The font is an interesting Norman one, of a rather unusual shape. It follows the usual type in that it has a massive central pedestal, but round this are eight other smaller pedestals supporting the bowl, which is in the form of a kind of stumpy cylinder, and is enriched with rather primitive foliage, which forms a splendid illustration of the Transitional period between Norman and Early English.

The monuments are numerous and interesting. The principal is a very fine canopied tomb of marble and alabaster in the chancel to Edward Jenner, a Judge of the King's Bench, dated 1611. The Judge is represented as a recumbent effigy in full robes, and has a long inscription in Latin. There is another altar tomb in the north aisle to Walter Grene, some time in the fourteenth century; the exact date is not discernible. In the south aisle is a plain brick-and-stone altar tomb to Sir Thomas Higate, and a brass of him and another of his wife and their nine children. The inscription has partially gone, evidently through being stolen. It is thought that it formerly ran thus:

> **"Thomas Higate, Esquire, lies buri ed here**
> **A faithfull Christian, beloved f ull dear**
> **A furtherar of justice, to ponnish crime,**
> **Whoe by Elizabeth, his wife, childr en had nine**
> **His soule no doubt remains in faithfu l love**
> **Amongst ye faithfull flock who live above."**

One more inscription may be mentioned: the epitaph of the Rev. Samuel Spence, a former rector of the parish, who died 1730, evidently a staunch Churchman, who believed nothing good of either Romans or Dissenters:—

> "Just underneath ther lays a Priest interred,
> Not led by errors into factions heard;
> No sectaries encouraging at home,
> Proof against those as well as those of Rome."

THE SOCIETY OF ARCHITECTS' TRAVELLING STUDENTSHIP.

There is a notable inequality in the subjects set for the Studentships of 1913 and 1914, for no one will deny that a scheme for a Dairy Farm demands much greater and more varied knowledge than last year's subject of a group of Almshouses. Half a dozen students only have grappled with the difficulties, nor is the resulting collection of drawings at all out of the ordinary. The student placed first is Mr. Charles Bell (of Forest Avenue, Aberdeen), and his work certainly exhibits an intelligent appreciation of the problem, though to our mind design No. 27 should have been placed in the enviable position allotted to No. 30. For the grouping of the buildings in the former is immeasurably superior, the farmhouse receiving a central position and a consequent power of supervision such as is its rightful claim; at the same time, too, the buildings are here set out with an academic idea of inter-relation and quasi-symmetry that would be quite justifiable, if carried out in execution. But the difference in estimated cost between these two schemes is remarkable, for though Mr. Bell uses lower foot-cube prices throughout than No. 27 (except for the farmhouse, where they agree in value), yet his total cost exceeds No. 27's estimate by nearly £2,800. The variation in estimates is rather striking in other directions. Design No. 31, with foot-cube prices of 5*d.*, 7*d.*, 8*d.*, and 9*d.*, produces the expensive total of £12,500—a rather prohibitive outlay.

But, leaving now the matter of prices, we will revert to Mr. Bell's drawings. And, in the first place, regarded from the standpoint of draughtsmanship, they are very praiseworthy, conveying a freedom of touch and a command of the brush which are greatly pleasing. Regarding the planning, it should be obvious that the aerial intimacy between the manure-store and the milking-room should be non-existent; and in other respects, too, the assessor's report makes acutely just criticisms upon this design, both for good and ill. We think the upper portion of the entrance hall is an uncalled-for luxury, and it would have been better to utilise the area for a bedroom, instead of raising over the kitchen for this purpose.

We prefer the parallel setting-out of buildings in relation to the main road, as contrasted with the unmeaning disposition employed by Mr. Bell, and in this respect also No. 27 scores. No. 28 comes second to No. 27 as regards the position of the farmhouse upon the site. In this design (No. 28) the single-men's house is notably well arranged; we think that the feeding passage from the mixing-room would have been better if continued axially in the milking-room.

No. 29 is good enough to provide a spacious playroom, and though its *raison d'être* is not sufficiently obvious, yet it is a case of utilising waste space. The elevational design is good.

In No. 26 the details are well and carefully drawn, but it is a mistaken labour (in students' work at least) to elaborate sewage tank. In No. 31 the housing quarters for the staff are placed more advantageously than the farmhouse itself.

On the whole, the competition is a distinct advance upon last year's in interest and in the resultant work.

THE CONCRETE INSTITUTE.

The fifth annual general meeting of the Concrete Institute was held on May 28, Mr. E. P. Wells, J.P., President, in the chair.

The report, of which extracts are given below, was unanimously carried, on the motion of the President, seconded by Sir Henry Tanner, supported by Mr. Edwin O. Sachs and Mr. H. D. Searles-Wood.

Professor Henry Adams, M.Inst.C.E., M.I.Mech.E., F.S.I., F.R.San.I., &c., was installed as President of the Concrete Institute for the ensuing two years of office. The meeting terminated with a vote of thanks to Mr. E. P. Wells, J.P., the outgoing President, proposed by Mr. H. D. Searles-Wood and seconded by Mr. M. E. Yeatman.

The Concrete Institute had on May 14, 1914, 930 members, twenty-eight associate-members, six associates, fifty-four students, five special subscribers, and sixteen honorary members.

Of this total 360 reside in London and its environs, 364 reside in the provinces, and 315 abroad.

An increase in membership, as was previously reported, occurred upon the extension of the scope of the Institute to deal with structural engineering and the introduction of other improvements. There has been a continued increase during the past session.

The decision of the Council, that when the total membership of all classes reached 1,000 an entrance fee of one guinea should be required of members joining thereafter, has been acted upon. Furthermore, at the beginning of the 1913-14 session a number of alterations were made in the articles of association, with the approval of extraordinary general meetings. These alterations, in brief, extended the classification of the membership by the inclusion of classes of associate-members, associates, and graduates. No graduates have yet been admitted pending the establishment of examinations. At the same time the subscription fee for full members has been raised to two guineas per annum. Associate-members and associates are each required to pay an entrance fee of one guinea and an annual subscription of one guinea. Students will continue to be admitted as at present, without an entrance fee, though they will be required to pay a transfer fee of one guinea upon being transferred from studentship to associate-membership.

In the previous annual report a surplus was reported and attributed chiefly to the income having been increased abnormally by the collection of a number of subscriptions in arrear. This year the position is reversed, in that a deficit of £161 19*s.* 10*d.* has been realised. This has resulted chiefly from the continued growth of the Society. The extra number of meetings held in 1913, the larger membership, and the changing of the rules have entailed extra expenditure under the headings of printing, reporting, postage, hire of hall, general expenses, and office salaries, and it was on account of this that the larger rate of subscription and the entrance fees have been imposed. The work of the Concrete Institute compares very favourably with the work of other Societies, considering its very moderate fees.

The number of meetings and educational lectures given in the previous session was larger than in any earlier session. In the past session the increased number has been maintained.

As the result of a ballot among members of Council, the bronze medal for the best paper read in the 1912-13 session has been awarded to Mr. S. Bylander, for his paper entitled "Steel-frame Buildings in London."

The attendance at meetings during the past session has been higher than in any previous session, and at one meeting a record number of members and visitors was present. The educational lectures were also extremely well attended.

In the past session informal meetings of the junior members of the Institute have been instituted, the first two taking place on April 3 and May 1, 1914. The attendance at these meetings has been very encouraging, and it is confidently expected that the meetings will be of great educational assistance to junior members of the Institute. The meetings will be held once a month during the session, with a member of Council in the chair on each occasion.

In former annual reports reference has been made to a "Committee appointed to consider the widened scope of the Concrete Institute," the title of this Committee being subsequently changed to the "Improvements Committee." An abstract of the report of the Committee was appended to the report of the Council for the 1911-12 session, in which it was stated that the Committee was appointed to take energetic steps to develop the structural engineering side of the widened scope, and that the Committee had defined for the purpose of the Institute that "Structural Engineering" was that branch of engineering which dealt with the scientific design, the construction and the erection of structures of all kinds in any material. The Committee further defined "structures" as being those constructions which are subject principally to the laws of statics as opposed to those constructions which are subject to the laws of dynamics and kinematics, such as engines and machines. The Committee unanimously recommended—and the Council subsequently adopted their recommendation—that a sub-title should be added to the Institute, so that the full title should be—

THE CONCRETE INSTITUTE,
AN INSTITUTION FOR STRUCTURAL ENGINEERS, ARCHITECTS, &C.

The Committee also recommended the institution of examinations in structural engineering. Accordingly, the Council during the past session appointed an Examination Committee, which was subsequently, in December last, merged in a nucleus Examination Board, consisting of Professor Henry Adams, Mr. E. Fiander Etchells, Mr. W. G. Perkins, and Mr. E. P. Wells. The Examination Board has compiled a syllabus and rules for the proposed examination. It is proposed to hold the first examination next year. The Improvements Committee collected information in connection with a revision of rules. The alterations to the articles of association previously referred to as having been carried at the extraordinary general meetings at the beginning of the session were made and adopted at the suggestion of the Committee. At the same time proposals were put forward for the amendment of the memorandum of association whereby the enlarged scope would be more clearly defined, although the Committee had in their original report stated their opinion that Clause 3 (1) of the present memorandum did not limit the scope of the Institute to concrete and reinforced concrete, but that the clause enabled the Institute to deal with iron (including steel), bricks, gravel, sand, cements, and other structural materials and their application. The amendment proposed to Clause 3 (1) was as follows, the words to be added being shown in black type, and the words to be omitted by italic type within square brackets:—

3. (1) **To** advance the knowledge of concrete and reinforced concrete and **other materials employed in structural engineering** [*their constituents*], and to direct attention to the uses to which these materials can be best applied.

Consequential alterations were made in other paragraphs defining the objects of the Institute. Also, in addition, it was proposed to make an alteration, consisting of adding the words "and associate-member" to the word "member" in Clause 7, which defines the liabilities of the members, this alteration being suggested in view of the fact that a new class of associate-members was created by the alterations to the articles. When the alterations were duly submitted to the Board of Trade, after their approval by the general membership, the Institute was required to give, and gave, an undertaking to apply to the Court for allowance of the alterations to the memorandum. The Board of Trade raised certain objections, however; in particular they objected that the addition of the words "and associate-member" was not an alteration of the objects of the Institute, which was the only alteration permissible in the memorandum of association, and that only with the approval of the Court. The Institute's counsel has similarly advised the Institute. The Board of Trade raised the further objection that as the proposed alterations to the objects appeared to have the effect of extending the scope they were of the opinion that the enlarged scope ought to be shown by an alteration in the title of the Institute. The Institute's counsel has also expressed the opinion that the resolution which was actually passed did not in terms refer to any alteration in the memorandum of association, the resolution using the words "new regulations." Counsel expressed the opinion that the Court might very well take this objection and refuse the order.

Differences have arisen in the Council as to what action the members should be recommended to take so as to put the matter in order before applying to the Court, and the Council has decided to place the following alternative policies before a general meeting of the members before going into Court:—

(*a*) To rescind the alterations to the memorandum and revert to the original memorandum of association with the necessary further alterations to the articles to provide for associate-membership.

(*b*) To rescind the alterations to the memorandum of association and to repass the same with such additional alterations as may be required to meet the objections of the Board of Trade.

In connection with the second of these policies, the Council regret to find that a misunderstanding has arisen as to the intention of one paragraph out of twenty-five—namely, Clause 3 (2). If the second policy be agreed to "concrete and reinforced concrete" will be specially and specifically mentioned in the aforesaid clause. Special meetings for the purpose of deciding between these policies will be convened at the beginning of next session.

The Council and Committees have been very much occupied in the past session with technical matters. In previous reports the action of the Institute has been recorded in respect to the regulations made under the provision of Section 23 of the London County Council (General Powers) Act, 1909, with respect to the construction of buildings wholly or partly of reinforced concrete. The Institute made suggestions upon a draft which was submitted by the London County Council, and subsequently made suggestions upon the first set of regulations when issued by the London County Council. These suggestions for the amendment of the regulations were sent to the Local Government Board, and in June 1913 the London County Council rescinded their first set of regulations and made new regulations, which were the outcome of prolonged negotiations between technical advisers of the Council and the Local Government Board. The statutory notice of the intention of the London County Council to apply to the Local Government Board for allowance was duly given to the four Societies named in the Act—namely, the Royal Institute of British Architects, the Institution of Civil Engineers, the Surveyors' Institution, and the Concrete Institute. The second (and revised) regulations thus came before the Societies for consideration with a view to submitting further suggestions for amendment to the Local Government Board. It was found that as a result of the negotiations between the technical advisers of the London County Council and the Local Government Board, many drastic alterations had been made to the first set of regulations, and, as the Building Acts Committee of the L.C.C. reported, "in some instances they render the regulations somewhat more onerous than those originally adopted by the Council." The matter is naturally one of extreme importance to the members of this Institute, not merely as affecting practice in London, but because the regulations, when finally approved, will probably be referred to by municipalities in promoting regulations for their respective localities. The Council and the Standing Committees—*i.e.*, the Science Standing Committee, the Reinforced Concrete Practice Standing Committee, the Parliamentary Committee, and the Tests Standing Committee—have therefore given careful detailed consideration to the revised regulations. The Institute's suggestions as to the amendment of the second set of regulations were sent to the other technical societies, and the Institute has been informed that they have been supported in large part by the Royal Institute of British Architects and by the Surveyors' Institution. The Institution of Civil Engineers informed the Institute that they had not made suggestions for amendment in detail. The Institute's suggestions were finally submitted to the Local Government Board in December last, and are now under consideration by the technical advisers of the London County Council and the Local Government Board.

The Institute's Committees have been so closely occupied with the L.C.C. regulations that they have not been able to do much other work, though they have a number of subjects in hand for consideration.

Science Standing Committee.—In addition to considering the L.C.C. regulations for reinforced concrete, the Science Standing Committee has been concerned with the revision of the standard notation for structural engineering calculations, in view of the criticisms made at the general meeting when the draft report on the matter was submitted. The finally revised notation will be issued shortly. In conjunction with the Reinforced Concrete Practice Standing Committee, a standard specification for reinforced concrete work has been prepared in draft, and will be submitted for discussion at a general meeting next session.

The Science Standing Committee has the following further matters under consideration:—

1. Standardisation of joints and connections in reinforced concrete.
2. Advice to superintendents of reinforced concrete work.

3. Amendment of the standard specification for cement.
4. Co-ordination of the standard specification for structural steel of all kinds.
5. The adhesion of and friction between concrete and steel.
6. Reinforced concrete piles.
7. The effect of sewage upon concrete.
8. The effect of oils and fats on concrete.

Reinforced Concrete Practice Standing Committee.—During the past session the Reinforced Concrete Practice Standing Committee has met, in conjunction with the other Standing Committees and the Council, to consider the L.C.C. regulations for reinforced concrete work. The Committee has held joint meetings also with delegates of the Quantity Surveyors' Association and with members of the Concrete Institute who are quantity surveyors by profession. Several meetings were held, as a result of which a draft report on a standard method of measurement for reinforced concrete was submitted for discussion at a general meeting. Since this meeting the report has been considered by the National Federation of Building Trades Employers of Great Britain and Ireland and by the Institute of Builders, who have made suggestions for its amendment in certain particulars. Meetings will be subsequently convened to consider the various criticisms and steps taken to issue a final report in due course. The Committee has prepared, in conjunction with the Science Committee, a draft standard specification for reinforced concrete work as recorded above.

The Reinforced Concrete Practice Standing Committee has the following further matters under consideration:—

1. Advice to clerks of works, inspectors, and foremen as to methods of properly executing concrete and reinforced concrete work and of preventing defects and failures.
2. Regulations, recommendations of joint committees, and various methods of calculation in respect to the design of reinforced concrete and the like.
3. Forms and centering for reinforced concrete work.
4. Standard concrete mixtures for general purposes.
5. The use of cinder, ash, clinker, and breeze in concrete.
6. Means of keeping reinforcements in place when concreting.
7. Methods of making concrete watertight and of waterproofing concrete.

Tests Standing Committee and Parliamentary Standing Committee.—The Tests Standing Committee and the Parliamentary Standing Committee have held joint meetings with the Council and the other Standing Committees, as previously mentioned.

The Tests Standing Committee has the following matters under consideration:—

1. The effect upon steel of the presence of sulphur in aggregates.
2. The grading of aggregates.
3. The expansion and deterioration of concrete due to changes of atmospheric temperature.
4. The effect of the use of sodium silicate on the surface of concrete as affecting reinforcing metal.
5. The erratic results obtained by the Vicat needle in ascertaining the initial setting time of cement.
6. The collection of data regarding the elastic moduli of concrete for stresses within working limits.

Investigation Committee.—The Investigation Committee has held meetings at which have been considered (*a*) the action of the Local Government Board in respect to the periods allowed for the repayment of loans sanctioned by them to local authorities for the construction of works of reinforced concrete, and (*b*) reports of failures of reinforced concrete structures. In connection with the latter, a standard report form for the use of observers of defects and failures has been drawn up.

CARPENTERS' HALL EXHIBITION.

THE exhibition of works in wood and wood carving at Carpenters' Hall, London Wall, was opened on Monday afternoon last by the Right Hon. Viscount Hambleden.

Mr. J. Hooke (Master of the Company), in opening the proceedings, alluded to the work of the Carpenters' Company in connection with technical education, and explained that it consisted of practical education at the hands of expert teachers in their arts and crafts training school, where at the present time there were over three hundred students. There were besides courses of lectures in the Company's Hall, which ran continuously from October to June. The Company also provided a course of lectures at University College for the students of the Architectural School. Examinations were held in connection with the work done at their own technical schools and the papers set after the various courses of lectures in the Hall. The Company encouraged the old system of apprenticeship by a system of grants towards the payment of fees. Finally, once in four years they organised an exhibition of works in wood and wood carving, combining with it various competitions. The exhibits consist of works of carpentry, joinery, cabinet making, and wood carving, and there is a division of amateur works. These exhibits had been judged by a distinguished body of gentlemen.

Mr. Hooke then called upon the Clerk to read the following report of the Chairman of the Exhibition Committee:—

This exhibition, which well illustrates the average good work of the craftsman in wood, the Company holds, as a rule, once in every four years. It may perhaps be of interest to know how these exhibitions have grown to be what they now are. In the Middle Ages, when these guilds were founded, there were, of course, no such things as exhibitions as we know them now. The guilds were initiated between 500 and 700 years ago to encourage good craftsmanship and generally look after the trade and the workers in it. They were protected by law, and the law forced all craftsmen to be apprenticed to a master in the trade for seven years, and they were bound in the Hall of this guild; and until they had served seven years they were not free to work in the City. Many did not take up their freedom, because we constantly find names which appear as apprentices and which do not reappear as freemen, and they probably went back, having been trained, to work in their native villages. The number of such cases is quite considerable. Now, of course, all this has been changed, and all can work where and as they choose. It is no good in these modern times to complain of modern ways of working. Willy-nilly these things have evolved, and we can no more force a man to go through seven years of apprenticeship than put the hands of a clock back. The great question of apprenticeship cannot be entered upon now; it is a most important one, and there is much to be said either way. It was in the year 1739 that there appeared in the daily paper a notice from this Company that it had come to the knowledge of the Lord Mayor that carpenters, not being free of the Company, had been doing work in the City. Notice was given that they be brought before the Lord Mayor and prosecuted unless they ceased to work. This is the last time, I believe, that the carpenters tried to stem the tide of work being done by men who were not bound. Now it is found that the trade must be helped in a voluntary manner. Formerly the Company had to pass all work done in the City for many miles round, but these powers were taken from them, and finally the mechanical and the bad-work-breeding by-laws took away any power from us. Of course, in the old days all apprentices for carpentry were bound in the old Hall, and it was about forty years ago that the last one was bound. When the new Hall was built our four courses of lectures, technical schools, and these exhibitions were founded, and thus continued a system, as we hope, of technical education and also the traditions of our ancestors and carried on and upheld the usefulness and value of the Company's work. Of course, we among the ancient guilds ought to consider ourselves fortunate in having a trade that is still living and vigorous. Many of the names even of the trades are almost incomprehensible, and it is no use bemoaning the fact that they have no present-day use. With regard to the exhibits themselves, the quality of the craftsmanship has not at all deteriorated. Nearly all the money prizes have been awarded, as well as three gold medals, twenty-two silver, and one bronze. In Divisions 1, 2, and 3 the judges had great difficulty in awarding the gold medal, owing to the very high average of the work exhibited, and they considered that the craftsmen had shown great thoroughness and knowledge in their grip of the problems presented to them, and technical skill in working them out. It is regrettable that more originality and simplicity of design has not been shown by the exhibitors, but one would like to mention the small oak door in Division 5, whose construction and carving is, in the opinion of many, a very charming and homogeneous piece of design and craftsmanship. There are many delightful examples of wood carving here, and we are very much obliged to the owners of the specimens of craftsmanship, both old and modern, which have been lent to us.

Viscount Hambleden, in declaring the exhibition open, remarked that anyone who walked round and examined the exhibits would agree that they were of very great practical as well as artistic value. Probably in the case of great buildings such as were to be seen springing up in every quarter of London the employment of steel—at any rate, for *constructional* purposes—had superseded that of wood. But some people still retained an interest in smaller buildings, and there were even those who were *still* seeking for the cheap and the ideal cottage. Personally, he was not sure that which was cheapest was not in the long run the more expensive, for as a landlord he knew that to cut down material was not in the end economical. He welcomed an exhibition which dealt in a practical manner with the difficulties met with in the construction of small houses and cottages. Especially did he welcome Division 6, which encouraged the making of furniture suitable for any one room of a labourer's cottage. Everyone would be glad to see how the spirit of the ancient craftsmen was being encouraged by the Carpenters' Company. He felt quite certain that the higher type of workmanship would find a market. Carving could find a place not merely in the house, but in ecclesiastical and municipal buildings. The kind of instruction to be found in the Company's school was capable of turning out quite as good craftsmen as have ever been produced during all the 600 years of the Company's existence.

"COUNTRY LIFE" COMPETITION FOR COTTAGE DESIGNS.

There is being held at the Alpine Club Gallery, Mill Street, Conduit Street, W., an exhibition of prize designs and models which were submitted in the competition arranged by "Country Life." Designs were invited by our contemporary for eighteen pairs of cottages to be erected in as many counties in harmony with local conditions and tradition. Of the 1,436 designs and fifty-six models submitted, only sixty-five are on exhibition, and most of these were awarded prizes in cash or books. The judges who made the awards were Mr. Walter H. Brierley, Mr. P. Morley Horder, Sir Robert Lorimer, Mr. S. L. Pepler, and Mr. Lawrence Weaver.

The exhibition was opened on Tuesday last, the 9th inst., by Mr. W. Runciman, M.P., and will close on Saturday, June 20.

Mr. Walter Runciman, President of the Board of Agriculture, said he had been asked to formally declare the exhibition open, and he did so with the greatest of pleasure because he believed it provided the best contribution which had so far been made towards providing typical examples from which, in various parts of the country, economical and good-looking cottages could be put up. Nearly a thousand architects entered for the competition, and nearly 1,500 plans were sent in by them. All these were carefully examined, and he believed those present would agree that the prize-winners were the best of the plans in the exhibition. He would also like to say how valuable was the competition in providing models as well as plans. He was not sure that in the future they might not have to depend far more on the use of models in dealing with local contractors and builders rather than on plans and specifications. They would find in the exhibition great varieties of type and cost. In some cases competitors had attempted to keep down cost to a low level, with the result that the accommodation had suffered. But he did not despair of their reaching in the near future arrangements and standards which will enable both private owners and local bodies to provide cottages which would not only give occupants all they demanded in the way of accommodation and equipment, but would also tend to beautify rather than disfigure our villages and roadsides. Not one of the first prizes would be anything but an adornment. They ought to congratulate themselves on so much effort being made to use local materials and the various details which make English cottages so characteristic of their environment. The competition had reference to the purely non-controversial side of cottage provision. Other aspects of the question would have to be dealt with in another place, but of these he would say nothing. He was becoming more and more convinced that the only way in which they could solve problems of rural housing was to proceed strictly along business lines. The exhibition provided one of the best means for showing how everyone could co-operate in the solution of that great problem. In course of time much of rural England would be rebuilt, and the State will have to play its share in some parts of the country. But, whatever the State did, he believed he could assure the public that it will not attempt to plant down in all parts of the country, in vales and on hillsides, in crowded villages and on lonely roadsides, one identical type of cottage; nothing could be farther from the intention of the heads of the Departments concerned. There was a movement now on foot which called in the enthusiasm of all, and wherever he went he was glad to know that those who lived in villages fully appreciated the trouble and the brain-work that had been put in. Many of those who entertained a great dream of the revival of rural life believed that at the foundation lay the better housing of rural folk.

EARLY TOWN PLANNING IN EDINBURGH.

An interesting paper, entitled "Early Examples of Town-Planning in the City of Edinburgh," was read at the annual meeting of the Scottish District of the Institution of Municipal and County Engineers at Dunfermline on the 5th inst. by Mr. A. H. Campbell, M.I.C.E., burgh engineer, Edinburgh.

In his opening sentences Mr. Campbell said that in this period of what might be called the renaissance of local government, it was refreshing to turn to early examples of town-planning furnished by the Corporation of Edinburgh and other public trusts in the laying out of the New Town. In striking contrast to the closely piled and many-storeyed blocks of the Old Town was the straight rectangular plan distinctive of the New Town, with its wide thoroughfares, its lavish allotment of land for gardens, and the stately edifices flanking its principal thoroughfares. The Nor' Loch having been drained in 1763, and the North Bridge opened in 1772, an Act was obtained for extending the ancient Royalty of the city over the fields to the north.

The man who first saw the potentialities of the land on which the New Town of Edinburgh was to be built was James Craig, a local architect. His plan was selected in public competition in 1767, for the laying out of the plateau of Princes Street and thence along the northern slopes of the city, with Queen Street as the boundary of this first effort at town-planning. This plan was deservedly regarded at the time as a work of genius, and when compared with the streets of the ancient city must have impressed the popular mind as nothing short of a revolution in the laying out of a town, showing as it did spacious rectangular building blocks intersected by wide streets and finely conceived terminal squares, known as St. Andrew Square and Charlotte Square, on the east and west respectively. Curiously, although George Street is now regarded as secondary to Princes Street, the intention of the designer was that George Street should be the principal shopping street and dominant feature of the plan, with Princes Street subsidiary or secondary thereto, and as a residential road, which indeed it was. Time has, however, effected in this respect a complete conversion and almost entire reconstruction of Princes Street into the great shopping street of the city.

Leith Walk was formed in 1774—a great highway extending from Princes Street to the heart of Leith, a distance of one mile and a quarter, and having a width of from 68 to 163 feet. The great valley of the Nor' Loch, at that date just reclaimed by drainage and bounded by the broad boulevard—now Princes Street—formed a most tempting site for building developments, especially so to proprietors, it may be, needy and eager to realise somewhat of the latent value of the land for such profitable purpose as its conversion into building sites. Building operations were actually begun, but the public sense prevailed, so that, after much protracted litigation, an Act of Parliament was obtained in 1816, enacting, *inter alia*, "That it shall not be lawful nor in the power of the Lord Provost, Magistrates, and Council or their successors in office to erect or sanction the erection of any building whatever to be erected in any part of the ground belonging to the community of the said city on the south side of Princes Street." From this Act, confirmed and reinforced by subsequent Acts, dates the preservation of this uniquely beautiful valley in the centre of the city as a perpetual pleasure ground for the people—probably unsurpassable in its combination and variety of natural features unspoilt by the builder's and the gardener's art, which have their part, nevertheless, in this beauteous city landscape.

With the then approaching completion of Craig's plan, and the continued demand created by the flow of fashion migrating from the High Street and Canongate to this new town, the need arose for the development of building lands, lying still northwards, and declining towards the valley of the Forth. Again resort was had to a town plan, and in turn that piece of land, bounded by Heriot Row upon the south to Fettes Row upon the north, and from Bellevue on the east to the old-time village of Stockbridge on the west, was made the subject of a town plan. This land, like what was treated in Craig's plan, was vested principally in public trusts, and so enabled this large tract to be planned out as one subject. The scheme, prepared about 1806, adheres to the bold conception—although albeit severe formality—of Craig's scheme for Princes Street, George Street, and Queen Street areas. The joint authors were Messrs. Robert Reid and William Sibbald—the former being the architect to His Majesty in Scotland, whilst the latter held the position of City Superintendent of Works. The leading ideas were streets and buildings ranged in rectangular order, straight but impressive by their great width, fronted by palatial buildings, chiefly of a residential kind, and having that continuous stretch of woodland and greenery as garden ground, extending practically the entire length of the plan from east to west, between Queen Street on the south and Heriot Row upon the north, with the gardens of Drummond Place and Royal Circus balancing the northern fringe of this area.

It is the free introduction of the garden idea into those early plans, both of Craig and again of Reid and Sibbald, that give to them such outward attractiveness, and add to their worth from a public health and amenity point of view. The inclusion of such "lungs" as essential adjuncts of city development is evidence of the foresight of the planners, and of the appreciation, by landowners and citizens alike, of those things that really matter and which stamp a city as composed of something more than mere stone and lime, or an accumulation of bricks and mortar. This recognition of recreation or airing spaces, as vitally essential to the growth of a town, has set the pace, which, happily, has been well maintained in other areas which followed on, north and south of the ancient city boundary, such as Moray Place, Ainslie Place, and in more recent times the squares and gardens of the west end; whilst the gardens of George Square, Nicolson Square, St. Patrick Square, Gayfield Square, and St. James Square, &c., all pay tribute to the same idea of a central garden space as indispensable to the successful hygienic grouping of buildings and the growth of communities.

It was regrettable that this custom of those early planners had not been followed in the more utilitarian plans of later days, and thus have preserved for the city in those areas of a crowded kind spaces and airing grounds for the inhabitants. The passion of extracting from the land its utmost yield in building, and therefore in money, applied not indeed so much in Edinburgh as in other cities, and seemed to have obsessed the owners to the exclusion of those finer points of estate planning indicative of regard for amenity and health. Mr. Campbell next referred to Playfair's and other plans (1819) for the Calton Hill and lands to the north of it; to their mutilation owing primarily to the incursion of railways in the Leith Walk locality, so that it was only the noble terraces that girdle the Calton Hill and the fringe of the hillside upon the north that had been realised.

The next area to be taken in hand was that tract of land, the property of the Earl of Moray, overlooking the water of Leith and Dean Valley, and embracing Moray Place, Ainslie Place, Randolph Crescent and Cliff. For this area plans were prepared by Gillespie Graham about the year 1823, and this plan probably approximates nearest to the ideas of the town planner of to-day in the freedom and informality as compared with the earlier plans. The site was exceptionally fine, including as it did the wooded and grandly picturesque slopes of the water of Leith Valley. The plan of development is made to dovetail into the western termination of Craig's plan of Princes Street and Queen Street, and of Reid and Sibbald's plan of the territory to the north thereof. Internally, this plan of Graham's is attractive and novel in its departures from the straight lines of the earlier plans. In lieu thereof we have the curved lines of Moray Place, Ainslie Place, and Randolph Crescent, encircling a series of gardens along the axial line of the plan and flanked by palatial town mansions of exceptionally dignified architectural treatment. The many-storeyed mansions of Moray Place, crowning the wooded slopes of the valley, and the terraced treatment of the gardens of those mansions, present from the Dean Bridge a combination at once pleasing to the eye, effective as a picture, and void of offence against the æsthetics of this beautiful valley.

Concurrently with the development of the Earl of Moray's estate came the western outgrowth of the city in those streets called Melville Street, Coates Crescent, Atholl Crescent, and to the construction of the South Bridge, 1785-1788; the Mound, 1781-1830; Regent Bridge, Waterloo Place, and Regent Road, 1815-1819; King's Bridge and Johnston Terrace, 1827; George IV. Bridge, 1827-1836; and the Dean Bridge, 1832. The planning of this area is in no wise inferior to the excellence of the earlier examples that have been described. Modelled upon similar lines, the area worthily sustains the traditions of the New Town, both as regards the width of its streets and the quiet dignity of its architecture. The later additions to or extensions of this plan in the buildings of St. Mary's Episcopal Cathedral at the extreme west-end of Melville Street and directly in line thereof form a noble terminal feature to the west, with St. George's parish church and its domed crown close in the view towards the eastern end.

Those terminal features serve to show the importance in town-planning of securing good and suitable vistas as the natural and proper termini to leading thoroughfares, and that, not only in the formal type of town-planning, but likewise in the freer treatment of the informal style adopted in the planning of suburban parts. It will be conceded that the various designers of the New Town of Edinburgh recognised the part which may be played in giving to leading streets suitable terminal features. To mention a few, consider Princes Street with the Calton Hill and its many monuments closing in the eastern vista, whilst St. George's Campanile Tower, and the stately spire of St Mary's Cathedral terminate the western view; or, again, George Street, with its Melville monument on the east, and St. George's parish church and dome on the west; Howe Street, with the appropriately disposed St. Stephen's Church at its northern terminus; or Hanover Street, with the classic Royal Academy in the immediate foreground, backed by the turreted terminals of the Assembly Halls, and crowned by that triumph of Gothic architecture in the lofty spire by Pugin; or see the Scott Monument from St. Giles Square; whilst the Castle is the dominating feature, visible from all points of the city's compass. All these and many others that attract the eye at nearly every turn in our New Town bear witness to the foresight of those early planners, to whom we must pay grateful tribute, and to the passion that then prevailed of adorning by worthy architectural dispositions the city so favoured initially by Nature, and yet also presenting by reason of Nature those very barriers that have made the planning of the city and the linking up of its several parts so physically difficult and so constructionally expensive.

Each generation, said Mr. Campbell in conclusion, had now for fully 150 years busied itself with thinking out and putting into execution schemes for the betterment of the city, and making it worthy of the reputation it had earned as "The City Beautiful." There was still scope left, although it might be upon a scale less grand and formal, yet, nevertheless, essentially beneficial, and needing the exercise of the same qualities as influenced their predecessors in their day, so that the present generation might make its contribution, and add its link to the continuing chain.

SUMMER SCHOOL OF TOWN PLANNING.

The first course of lectures in Town Planning to be given in the University of London will take place in August, when a Summer School of Town Planning will be held from the 3rd to the 15th. The lectures will be given at the new School of Architecture at University College. This building is the largest and most complete of its kind in the United Kingdom, and it is intended to use some of the rooms at an early date for a Department of Town Planning.

A similar summer school has been held for the two previous years at Hampstead Garden Suburb, and this year several demonstrations will be given at the suburb, where the large area of land being developed on town-planning lines serves as an excellent ground for study. Among the lecturers who are to speak at the summer school are Professor Adshead, of Liverpool University, the first professor of town planning in this country; Mr. Raymond Unwin, F.R.I.B.A., architect of the Hampstead Garden Suburb and special lecturer in town planning in the University of Birmingham; Mr. L. P. Abercrombie, Lecturer in Civic Design at Liverpool University; Mr. E. R. Abbott, who as clerk to the Northwood District Council has been in charge of the legal side of the town-planning measure there; Mr. G. L. Popler, F.S.I., and Mr. Chas. J. Jenkins, M.Inst.C.E., M.I.Mech.E., who deal with the engineering problems of town planning; Dr. Brinckmann, professor at Carlsruhe, who will outline the development of town planning in Germany. It is hoped that Mr. John Nolen will be able to lecture on town planning in America. A lecture by Mr. H. V. Lanchester, F.R.I.B.A., with the interesting title "Tradition and Civic Development" is also announced.

The question of town planning is developing so rapidly in this country that much new experience will be available this year. It is now beginning to be realised that the Town Planning Act will very greatly affect the lives of people, more perhaps than any other Act of recent years, and no one who is concerned, either as a citizen or as an official, with public affairs, can afford to neglect this Act. It will affect the cost of people's houses, the size of their gardens, the number and size of their playing fields, parks, and other open spaces, the general appearance of towns and suburbs, and the health and well-being of the whole community. It will also affect the prosperity of the industries on which their livelihood depends, the distance they must travel to their work and their children to school, and many other aspects of their lives.

At first sight it may appear that a fortnight is a very short period within which to study a subject like town planning, but much can be done by concentration, and twenty-five carefully arranged lectures given consecutively and co-ordinated to bring all the different sides into view really represent an amount of teaching that is not exceeded in many courses lasting over a much longer period. Further, the fact must not be overlooked that these lectures are intended primarily for a body of students, most of whom are already experienced in some branch of the subject.

Mr. Herbert Samuel, President of the Local Government Board, has accepted the office of President of the school. Copies of the syllabus can be obtained from Mr. J. S. Rathbone, joint hon. secretary, Fitzalan House, Finchley, N.

RATES AND TAXES FROM A BUSINESS MAN'S POINT OF VIEW.—III.

By H. G. Chancellor, M.P.

Exempting land from rates and rating on improvements both hamper business. The reversal of the process, rating on land values and exemption of improvements, would stimulate, because it would free business.

The amazing progress of cities in Western Canada since, as compared with their progress before, adopting this plan has removed this from the plane of theory to that of demonstrated fact.

But it may be objected that this would remove one injustice by imposing another. It is therefore necessary to inquire into the nature of land values. It must be premised that these do not include improvement values, not even those which appear inseparable from land—*i.e.*, increased fertility due to cultivation and manuring. These are different in character, and inasmuch as they are values due to individual effort, capital, and skill. The rent of a hereditament consists of two parts—payment for buildings or improvements and payment for the site upon which they stand. The improvements are capital provided by the owner for the use of the tenant, and, as with any other form of loaned capital, the owner is entitled to interest upon it. That portion of rent, therefore, is really a form of interest.

But the site itself is not so provided. Its value is due to the needs of population, which can only exist on land. It can neither be increased nor diminished, as can improvements, by any action of the owner. Its value as compared with that of other sites is due entirely either to its superior position or to qualities inherent in the land—*e.g.*, natural fertility or mineral deposits, which, like the site itself, are of greater or less value, as they are more or less needed by the population. Land value, therefore, is in its very nature not an individual but a communal creation. As such it is the natural and proper source of public revenue which ought to be exhausted before other sources are tapped. To continue to allow it to be diverted into private pockets from the purse of the community who create it is to perpetuate a great wrong on the public. To assume it on their behalf is simply to restore it to its rightful purpose. But law and prescription have recognised private interests in this common property. Yes, law made by Parliaments elected by and consisting exclusively of landlords did transform tenancy from the Crown subject to rent in the form of services into practical ownership without rent or service. It also enclosed the commons and confiscated common rights. It is time for new laws to restore those rights by charging a rent for them and using this as revenue for common purposes. What is called taxation and rating of land values is not taxation at all, but rent charged by the community for the exclusive use of values which belong to the community by rights of creation.

Of course private property in these values—*i.e.*, in the right to appropriate public revenue—cannot be cancelled at a stroke. But any land legislation that seeks to strike the trammels from business and enterprise will have to begin the process by turning the legal theory recognised by our laws, that there is no absolute ownership of land, but only a tenancy from the Crown, into a legal fact, and by a gradual reimposition of the old rent, to the existence of which the remnant of the old land tax bears evidence.

Inasmuch as population creates land value, every shilling of it, each individual born contributes to that value. In as far as every person enjoying the exclusive right to land is made to pay the State in proportion to the value exclusively enjoyed, he will be paying for services rendered the value to him of those services. There will be no injustice. The landlord will get his, the State its rights, nothing more, nothing less. The revenue, of course, must be shared between the whole community—the nation and the local community. There must soon be a readjustment of local and national burdens. The Treasury is to take over the bulk of the cost of education, main roads, poor law, and some other national services. The effect of this relief of rates will be an increase in rents, in course of time leaving the tenants, who use the land, no better off. The further effect will be to enrich still further the owners who let the land with money from the National Treasury, unless this is retained by the State in the form of a national tax on all land values.

The small amount left to be raised locally will enable reduced assessments to be made. This could be accomplished by taking improvements out of assessment and leaving existing rates on land value alone. Or if that could not be done at once it might be done gradually over a period of years, as in Vancouver. Valuation of land being separated from that of improvements, these could be charged at rates gradually reduced until they disappeared after about twenty years.

The only real sufferer by the change will be the man who, as owner, is content to be a mere rent drawer. The improving owner will often save in rates on his improvements more than he pays in tax and rate—*i.e.*, State rent—on the unimproved value of his land. But he can no longer afford to hold up his land, nor to put it to inferior uses that employ little labour and starve the country of house room or agricultural produce.

To pay rent to the State on their real value millions of uncultivated acres will have to be restored to cultivation, thousands of vacant sites to be covered with buildings.

The demand for labour thus created will bring labourers back to the country, send up wages, call into being houses at economic rents they will be able to pay, establish a fresh home market, and give a boom to business which is the more likely to be permanent because relieved of the burdens that now penalise, discourage, and hinder it. The true interests of business are identical with those of the people at large. The business man, of all others, should demand that the nation should live on its own income before taking the individual earnings of its citizens. Forms of rating and taxing that, by doing this, hamper business development should be resorted to, if at all, only so far as necessary to supplement the income from land values which are created by and therefore belong to the community, should these prove insufficient for national and local revenue.

The Royal Scottish Academy, at a general assembly, have elected the following as honorary members: Mr. Dermod O'Brien, H.R.A., President of the Royal Hibernian Academy; Mr. William T. Oldrieve, F.R.I.B.A., F.S.I., F.S.A., H.M. Principal Architect for Scotland; M. Le Comte Jacques D. Lalaing, sculptor, Brussels; and Mr. Frank Brangwyn, Associate of the Royal Academy, London, and President of the Royal Society of British Artists.

THE TECHNIQUE OF GLASS PAINTING IN MEDIÆVAL AND RENAISSANCE TIMES.*

By John A. Knowles.

(Continued from last week.)

Theophilus, in chapter xii., entitled "Of the different colours of glass," says: "There are found in the ancient buildings of the Pagans in mosaic work different kinds of glass—viz., white, black, green, yellow, and sapphire—and the glass is not transparent but dense, like marble. They are, as it were, small square stones . . . which the French, who are very skilful in this manufacture, collect. They fuse the sapphire in their furnaces, adding to it a little clear and white glass, and they make tables of sapphire which are useful enough in windows."

With the question of what these other coloured *tesseræ* were composed we have nothing to do, but what concerns us is that the blue was opaque, and was used to manufacture blue glass. Moreover, the sapphire of Theophilus and the azure of Eraclius were fused with a flux, and the latter affirms that on being fired it turned from blue to a beautiful black. Now we know that the true sapphire is not obtained in large lumps, but in small crystals, though sometimes it is found in the form of pebbles, the crystal having become rounded by ages of constant grinding. It is always transparent, and on being pounded appears like powdered glass, and can by no means be made to produce a blue pigment, nor to colour glass blue.

On the other hand, the sapphire and azure of the above writers cannot have been lapis lazuli.

There are, however, among copper carbonates many substances so nearly like lapis lazuli that in the writings of the Greek and mediæval authors they were mistaken for it. Moreover, they described characteristics and medicinal properties that their "sapphire" possessed which can only belong to a mixture of copper. The chief of these substances, which have been named by different writers azure or sapphire, is azurite, a blue carbonate of copper.

The writer of Sloane MS. No. 73, in the British Museum Library, distinguishes clearly between the true lapis lazuli and azurite, and calls the latter azure bise, by which name the mountain blue was known. Innumerable similar recipes are scattered throughout mediæval MSS., and formed part of the regular stock-in-trade of ancient writers on pigments and painting.

There is, however, a recipe in Eraclius for what he calls a black glass for painting earthen vases, which throws much light on this question as to what sapphire, or azure, as he calls it, was, which is as follows (Eraclius, lib. ii. 20): "In the same manner also you may make black glass useful for painting. Grind the azure that is found in the earth with gum, and then breaking clear glass upon a marble slab, mix it up with it and grind them again. This mixture will assume a blue colour which the force of the fire will turn to a beautiful black."

Now, azurite (which is known also by the names blue verditer, bise, mountain blue, &c.) agrees in its general characteristics with all the conditions in the foregoing recipes. It is found in Greece and Cyprus in veins of copper ore, and we know that the latter island was formerly abundant in copper, and, I am credibly informed, this mineral still is worked there. In its natural state it occurs in large lumps, and was frequently used in mosaic work. It is of a blue colour, and when ground to powder it forms a serviceable blue paint, known to-day as blue verditer; it was in mediæval times the commonest blue pigment for wall decorations and paintings, and used in this way it fades and turns green, as can be seen in many of the paintings of the early masters in the National Gallery and elsewhere. On being ground with a flux and fired in the kiln it turns black.

It was largely used for producing the Egyptian blue, which analysis has proved was a richly coloured copper frit, and the fact that azurite will produce a blue glass explains Theophilus' statement that the blue *tesseræ* were melted with white glass to form tables or sheets of blue. There were two different blue glasses used in early and mediæval times, and one of these was produced with copper.

The title of one of the lost chapters of Theophilus, chapter xii., is "Of the colours which are made from copper and lead"; chapter xiii., "Of green glass"; and chapter xiv., "Of sapphire (blue) glass." We have before seen that the green glass was a lead-glass, and for the same reason the blue was also; and this explains why both the green and sapphire glass were to be fired on the iron tray near the handle, where the heat was not so great as further into the kiln. Almost all copper compounds in a fairly complete state of oxidation yield a blue-green or peacock-blue colour.

I have mentioned before that azurite is so like lapis lazuli in appearance that the mediævals frequently failed to differentiate between the two; but the author of Sloane MS. No. 73, which I have referred to before, gives instructions for determining from different samples of blue stone the true lapis lazuli from azurite, which throws some light on this question of what azure or sapphire was. After giving instructions that the stone to be tested should be heated red-hot, the writer says that "whanne the ston is cold, if he turne eny thinge blak liche syndre, and that it be more brokel than it was bifore, triste wel that it is not lapus lazuly, but it is lapis almanie, of whiche men maken a blewe bize azure." Bise to this day is one of the names under which carbonate of copper is known, green bise, for example, being an artist's colour made from cupric oxide.

You will notice that Eraclius in the foregoing recipe does not instruct the addition of the copper or iron oxide, whilst Theophilus says nothing in his recipe for glass-painting of the colour being blue when ground upon the slab; but this is accounted for by the fact that the Eraclius recipe is for painting on earthenware, and therefore it did not require to be of the same degree of opacity as would be desirable for glass-painting, which the additional cupric oxide gives.

That the blue colour of much of the ancient glass is due to cobalt there can be no doubt, as we are told that the splendid blue of the Barberini (Portland) vase in the British Museum was obtained by the oxide of this metal; so there can be little doubt that the property cobalt possesses of giving a blue colour to glass was well understood throughout later times, and analyses of mediæval blue glasses have settled the matter beyond dispute.

Most of the mediæval blues are what are known amongst glassmakers as red-blue, and were produced with the cobalt oxide and nickel and a slight content of iron oxide. The nickel, which is a constituent of most of the cobalt ores, would defy separation by methods available to the mediæval glassmakers, if they were aware of its presence, which there is reason to believe they were not.

That oxides of metals were capable of entering into combination with glass, and giving it a colour they did not themselves possess, was well understood, as, for instance, the making of green glass from the black cupric oxide. The sapphire of Theophilus came from Greece; it was found in lumps, and could be used in mosaics as tesseræ, and had to be reduced to powder before it could be used as a paint. The azure of Eraclius was found in the earth, and when ground up appeared blue, being, in fact, our blue verditer. Now the oxide of cobalt is not blue, but of a steely-grey colour. It is not found in Greece, nor can it be used in mosaics, neither can a blue pigment be prepared from it by mere grinding; and there is nothing in either of the recipes of these authors to suggest it was a frit already prepared. Moreover, although we know that cobalt has been found in certain Egyptian glazes, we have no trace of a cobalt glass being used as a pigment in early mediæval times, nor, indeed, a frit for use in painting of any kind, till it again appears in the sixteenth century. If a frit coloured either blue or so intensely as to be black had been known either to Theophilus or Cennini, they would certainly have mentioned it, but both are silent on the point, though a colour of this nature would have been, on account of its unchangeable nature, most useful on lime walls, where most blues are unstable. Having, therefore, determined that as far as we can tell the twelfth and thirteenth centuries enamel colour was made with azurite and a lead flux, it only remains to test the formula by an actual trial and compare it with the enamel used in glass paintings of the period.

The next slide shows Theophilus tracing or outline colour made according to his recipe of one part each of flux, sapphire or blue verditer, and cupric oxide, painted upon glass and fired down. Although the enamel made from the twelfth-century recipe is not "fired up"—*i.e.* till it has a glossy surface—it cannot be removed with a knife-point, and this agrees with the ancient practice, as amongst hundreds of pieces of mediæval glass I have examined but two or three showed any shine on the surface of the painted parts, yet have withstood the ravages of time, whilst all around where the enamel has not been painted on, the bare glass has corroded so as to leave the design in relief. If, therefore, the evidence of ancient glass-paintings proves that generally

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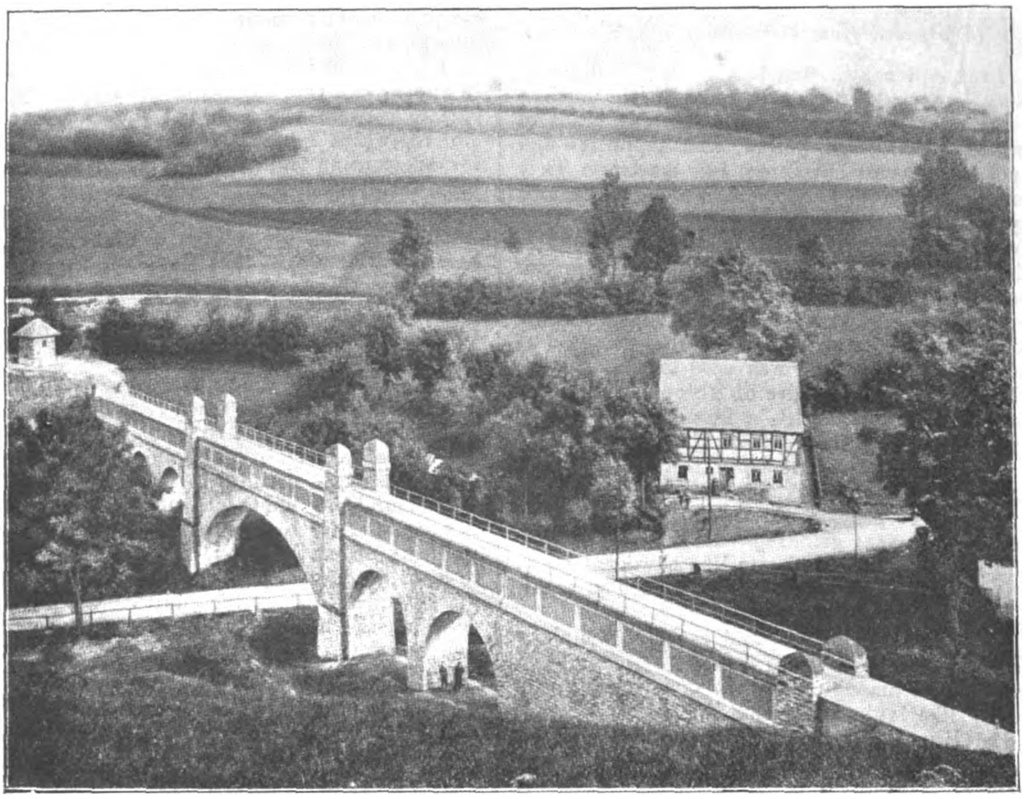
*** Extracts from a Paper read before the Royal Society of Arts.**

MODERN EUROPEAN ARCHITECTURE.
GERMANY.



[From *Deutsche Bauzeitung.*

WATER-SUPPLY OF CHEMNITZ.—AQUEDUCT AT KRUMHERMERSDORF.

(though not always) the enamel, composed without exact knowledge, and made by crude methods, has proved lasting, we have every reason to believe that the enamel made to-day on scientific principles by skilled chemists will prove equally if not even more so.

Eraclius differs from Theophilus in that he instructs the use of iron oxide instead of copper, and this might seem at first glance, considering the later date of this manuscript (if, indeed, it is so), as an improvement introduced as time went on. However, from some Early English glass-paintings I have examined I find that they were undoubtedly painted with an enamel containing iron oxide instead of copper, whilst a piece of Early Decorated grisaille work in the possession of my father, which remains in the original lead, and which I have brought for you to see, is painted with the black colour. You will notice how excessively dense the enamel on this glass is, whilst it appears black by both reflected and transmitted light. My own opinion is that the cold tone which an entirely black enamel gives would be considered a detriment by some, whilst others still continued to use it, till eventually it was entirely replaced by the purplish-brown enamel, which was a combination of the oxides of both iron and copper, the blackness of the latter giving a cool tint to the enamel and preventing what is called "foxiness"—the objectionable reddish effect of iron oxide which shows so strongly on white glasses where the light falls partly upon as well as being transmitted through the glass of a window, and often causes the pale-blue glasses to appear purplish. What slight amount of self-colour a glass-painting enamel possesses should always appear neutral; and this is the case with the pigment used throughout all the fifteenth century, as well as the best enamel in our own day.

However, as late as the beginning of the sixteenth century we are told by Vasari that William of Marseilles was accustomed to use both oxides separately, one for the heads and the darker for the draperies, though he has, unfortunately, reversed them, no doubt through a clerical error, prescribing the copper for heads, because it was "the lightest and of a tawny colour," and iron for draperies. Having, then, determined as well as we can from documentary evidence of what the early mediæval glass colour was composed, it only remains to put it to a practical test, and to do this I ground up equal parts of iron oxide, sapphire or azurite, and modern glass flux. As you see, it closely resembles the enamel of mediæval times, and by reflected light has that purplish tint due to the iron oxide which the enamel used in the thirteenth and fourteenth centuries possesses. But there still remained a doubt as to whether the experiment would be equally successful if green glass were substituted for the modern flux, so in order to remove any doubt as to this point I ground up on a slab some thirteenth-century green glass. After breaking it up with a hammer and mixing it with the iron and copper oxides, I fired it down on a piece of sheet-glass. The enamel, whilst not fired up bright, though a good strong heat was given, is firmly united to the glass, and cannot be removed with a knife.

I think that we have fairly settled the point from documentary evidence and actual trial as to the composition of the mediæval enamel and flux; but as time went on changes were introduced, and one of these seems to have been the source from which the flux was obtained. We have seen that in early mediæval times the practice was to crash up fragments of the green glass used in windows, but in the thirteenth century we begin to hear of "geet"; and here comes the knotty point which has puzzled so many as to what this could have been. Mr. Noël Heaton, in his admirable paper before this Society in March 1907, proved that it could not have been what we to-day know as jet, this being a hard substance nearly allied to bitumen, which is entirely dissipated by any considerable degree of heat. The first mention of jet occurs in the Norwich Sacrist's Roll for 1274-5, as follows: "*Pro stangno Get et operacione fenestrarum et stipendiis de verrers usque festum sancti Michiaelis*, 32*s*. 9¾*d*.," which I quote from Mr. Heaton's paper, and it again occurs in the exchequer accounts of St. George's Chapel, Windsor, 1351-2, "*Johanni-Geddyng pro* vj *libris de Geet emptis pro pictura vitri* vjs," and in the same year in the Account Rolls of St. Stephen's Chapel, Westminster, where payments are entered "for arnement, rosyn and geet for the painting of the glass"; and, again, "for grinding geet and arnement for the painting of the glass."

The resin was for fixing the pieces of glass to the easel whilst being painted, so did not require grinding; the arnement was the red iron oxide. Therefore, "geet" was the flux. Although they called it jet, I do not for a moment

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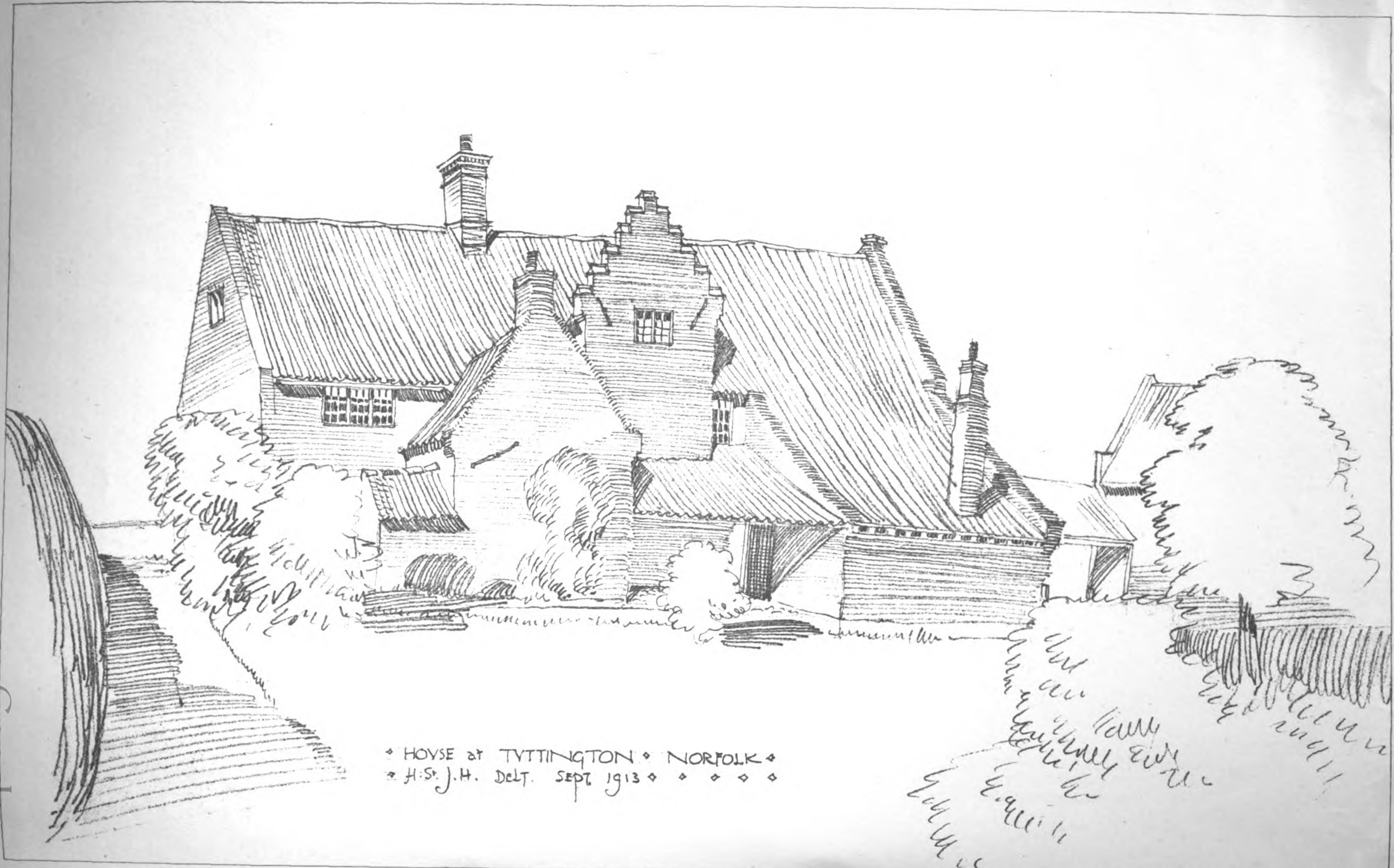
◆ HOUSE at TUTTINGTON ◆ NORFOLK ◆
◆ H: St J. H. DELT. SEPT. 1913 ◆ ◆ ◆ ◆ ◆

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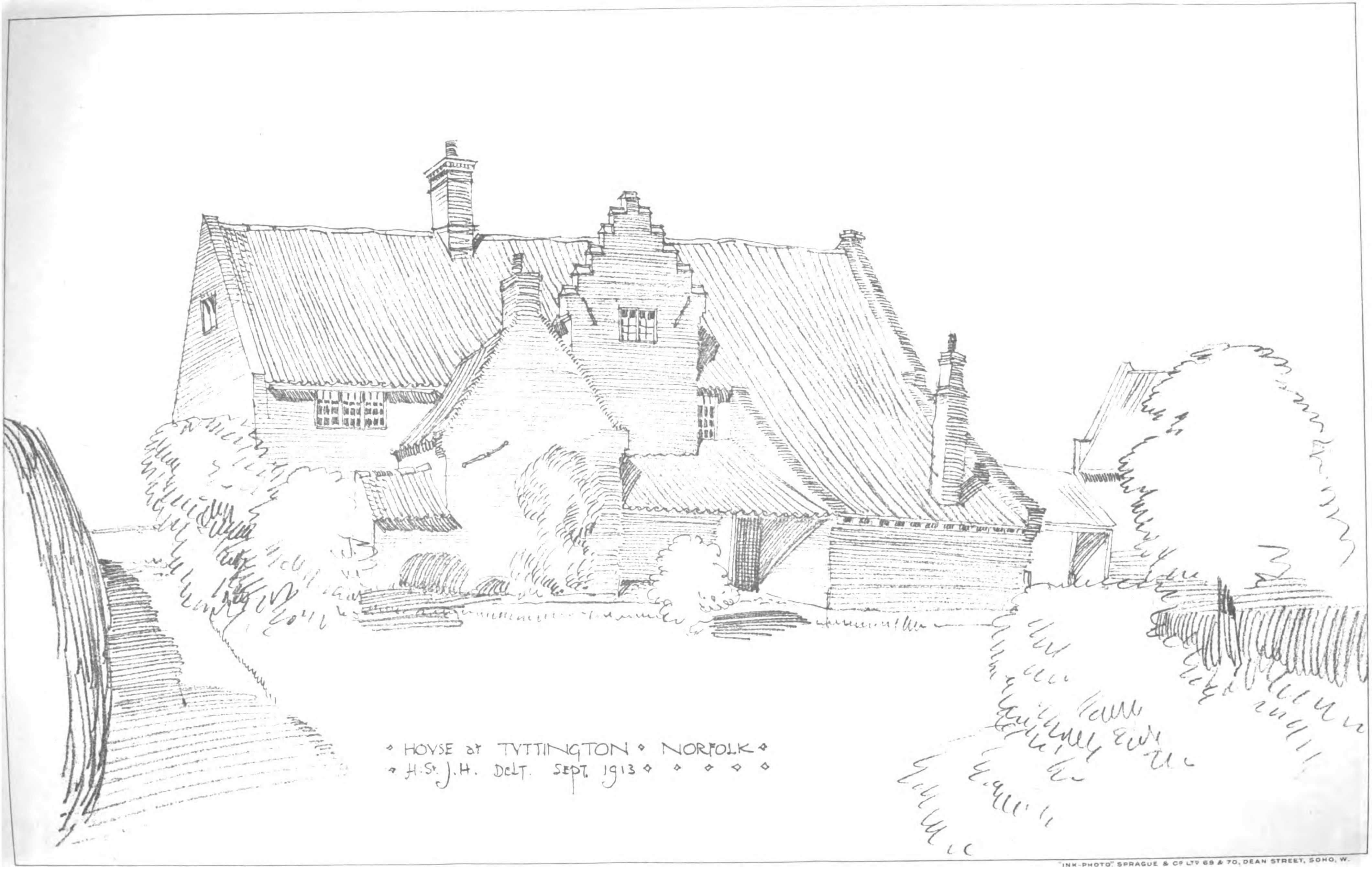
From a drawing by Mr. H. St. JOHN HARRISON.



◇ HOVSE at TVTTINGTON ◇ NORFOLK ◇
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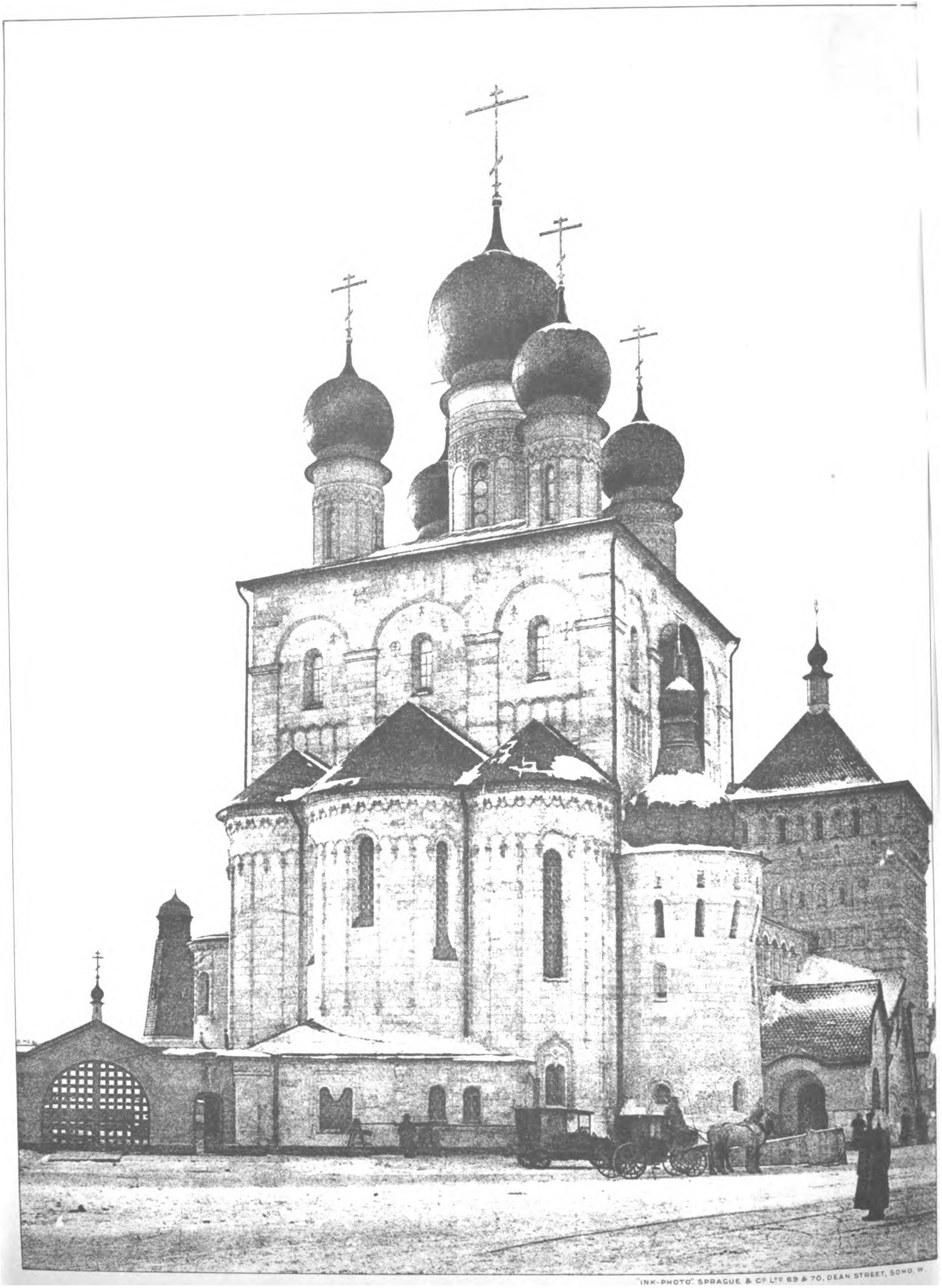

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MEMORIAL CHURCH OF THE ROMANOV-TERCENTENARY ERECTED AT ST PETERSBURG.

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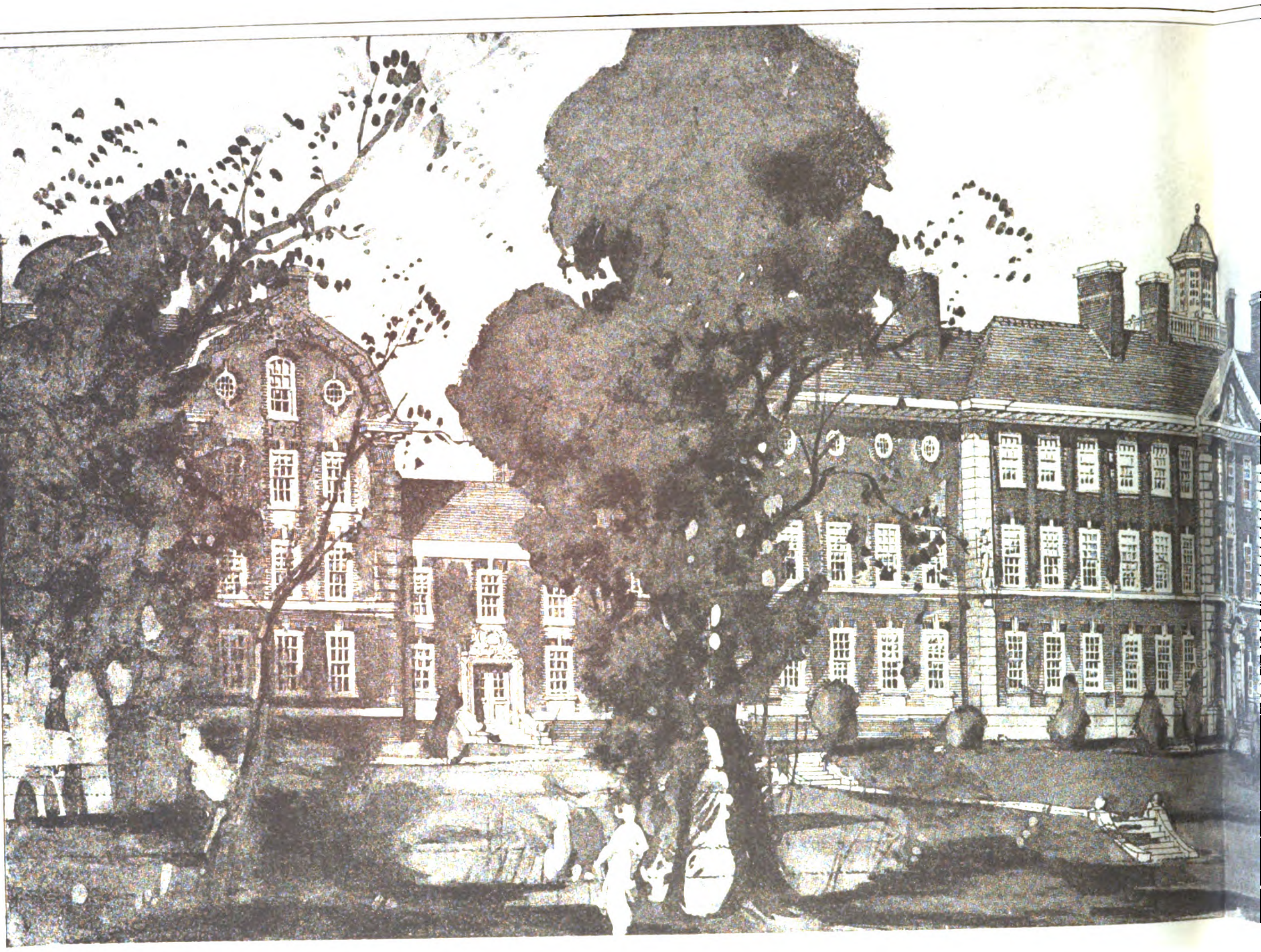
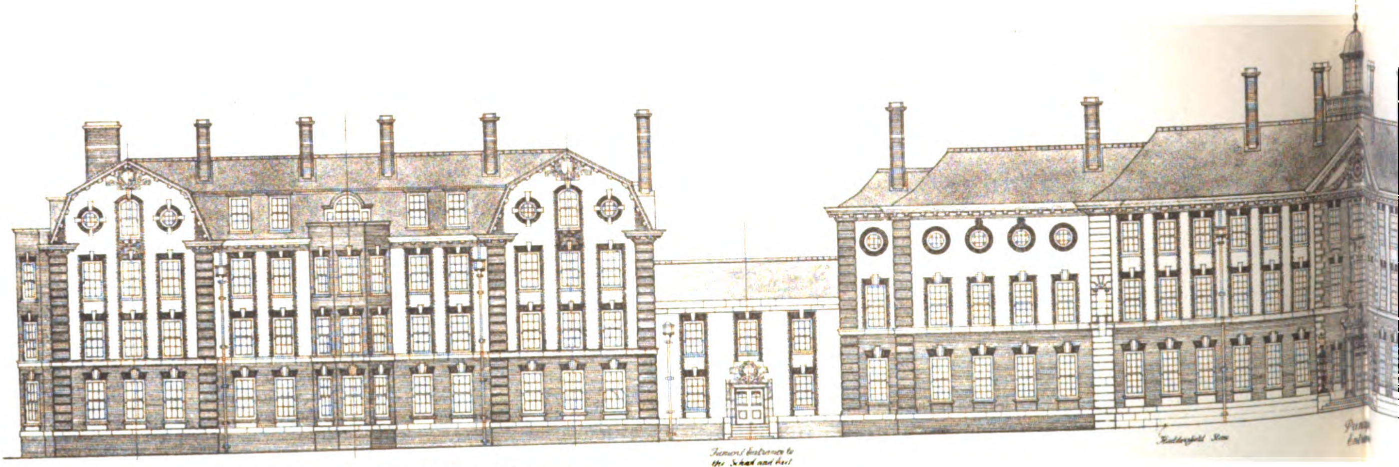
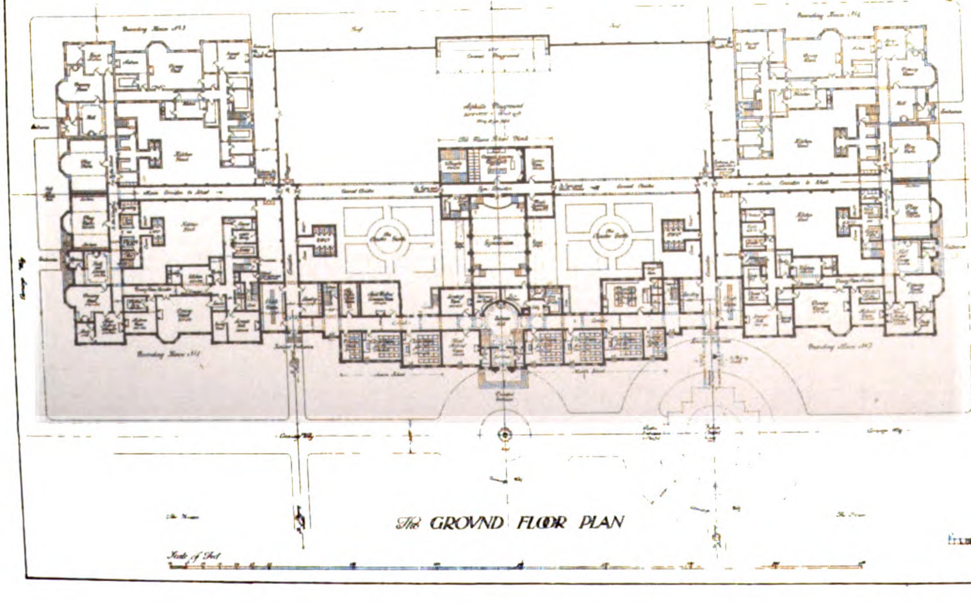


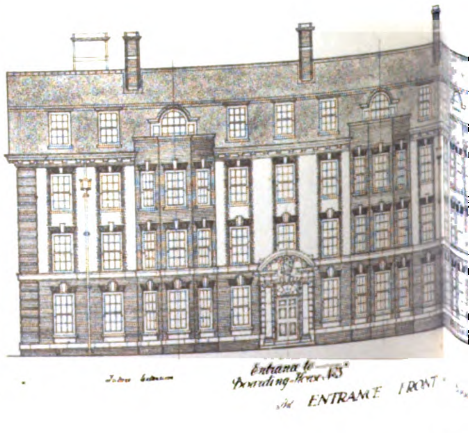

Tennis entrance to the School and back to Playing Fields
Huddersfield Stone

The TERRACE FRONT of BOARDING HOUSE No 1

The ELEVATION of the PRINCIPAL


Boarding House No 3
Boarding House No 4
Covered Playground
Asphalte Playground
Gymnasium
Boarding House No 1
Boarding House No 2
Scale of Feet

The GROUND FLOOR PLAN


Entrance to Boarding House No 3
Scale of Feet
0
10
20
30
40
50

The ENTRANCE FRONT

(Royal Academy Exhibition, 1914).

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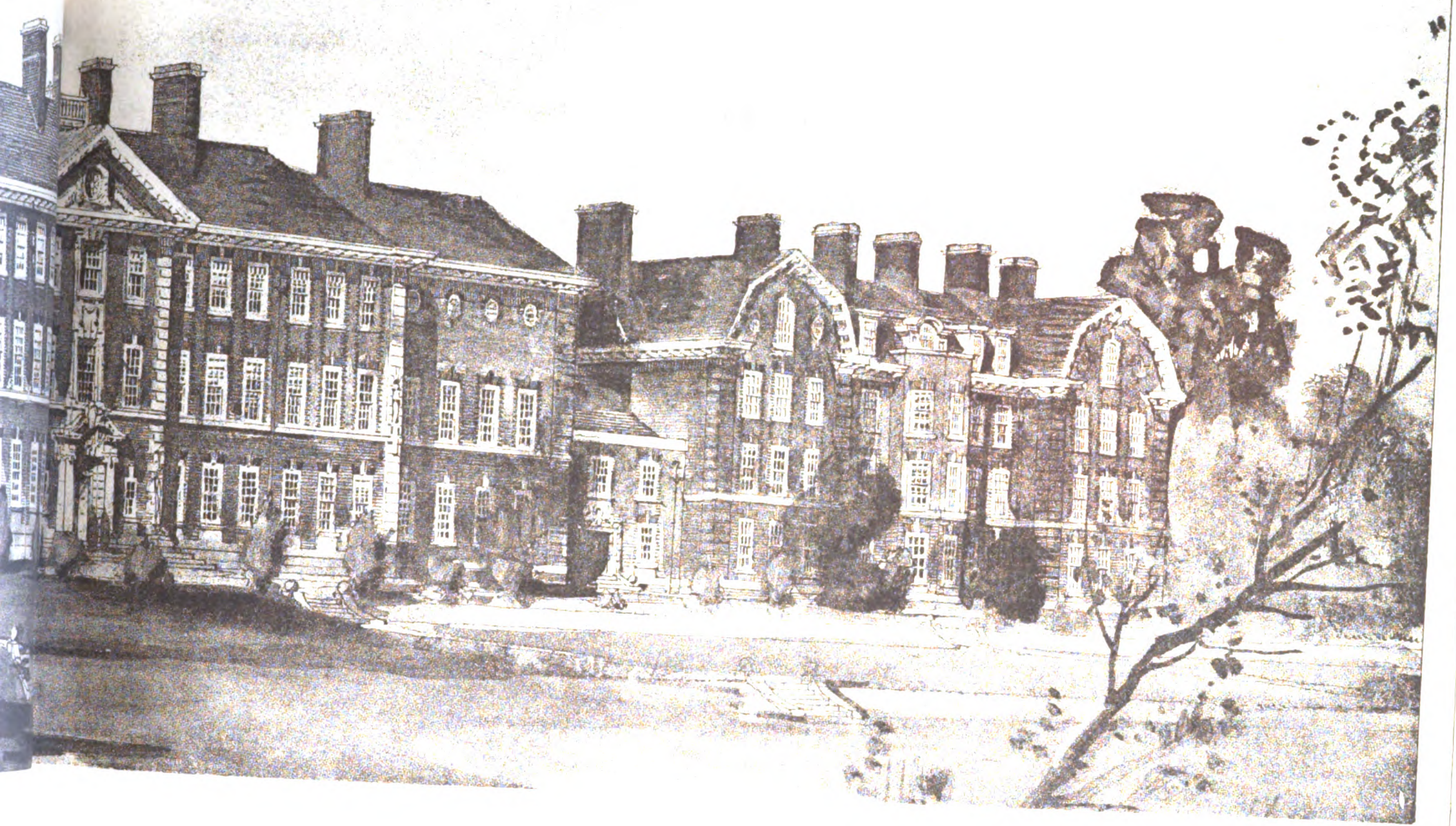
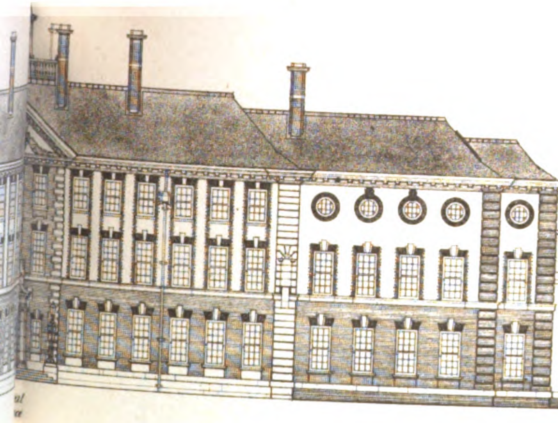
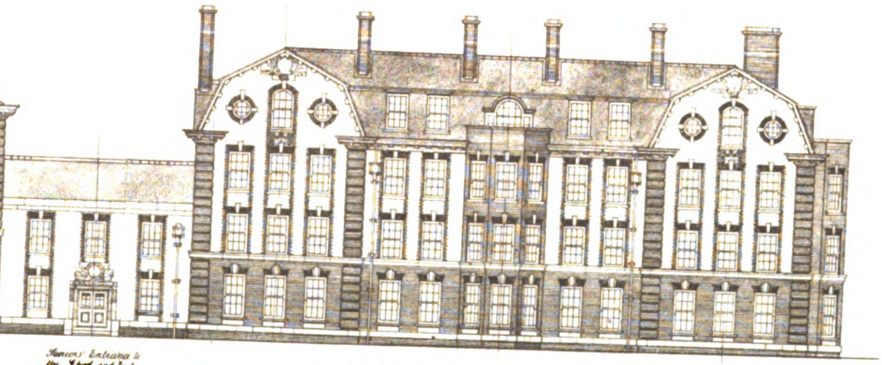


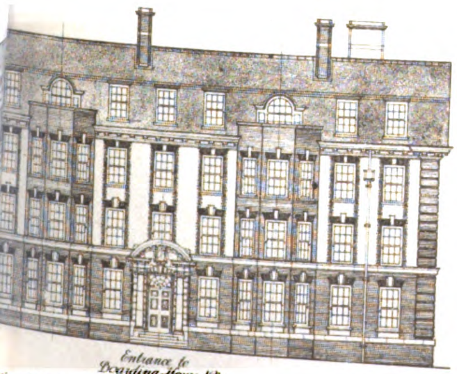


RINCIPAL FRONT



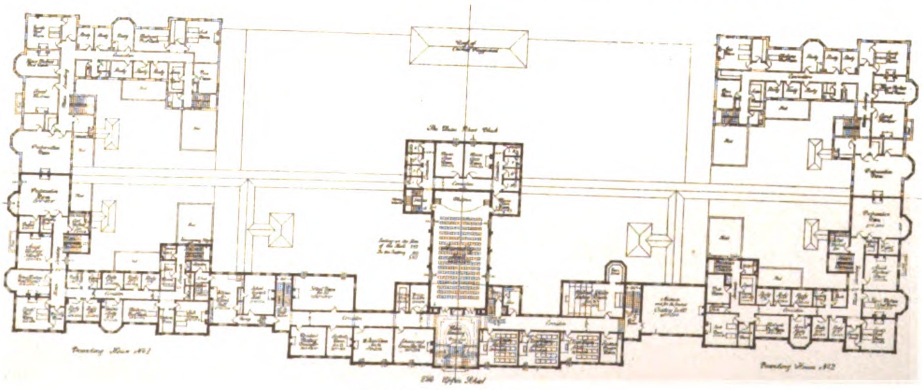
Seniors' Entrance to the School and Exit to Playing Fields

The TERRACE FRONT of BOARDING HOVSE No2



Entrance to Boarding House No1

the BOARDING HOVSES


Boarding House No.1
The Upper School
Boarding House No.2

The FIRST FLOOR PLAN

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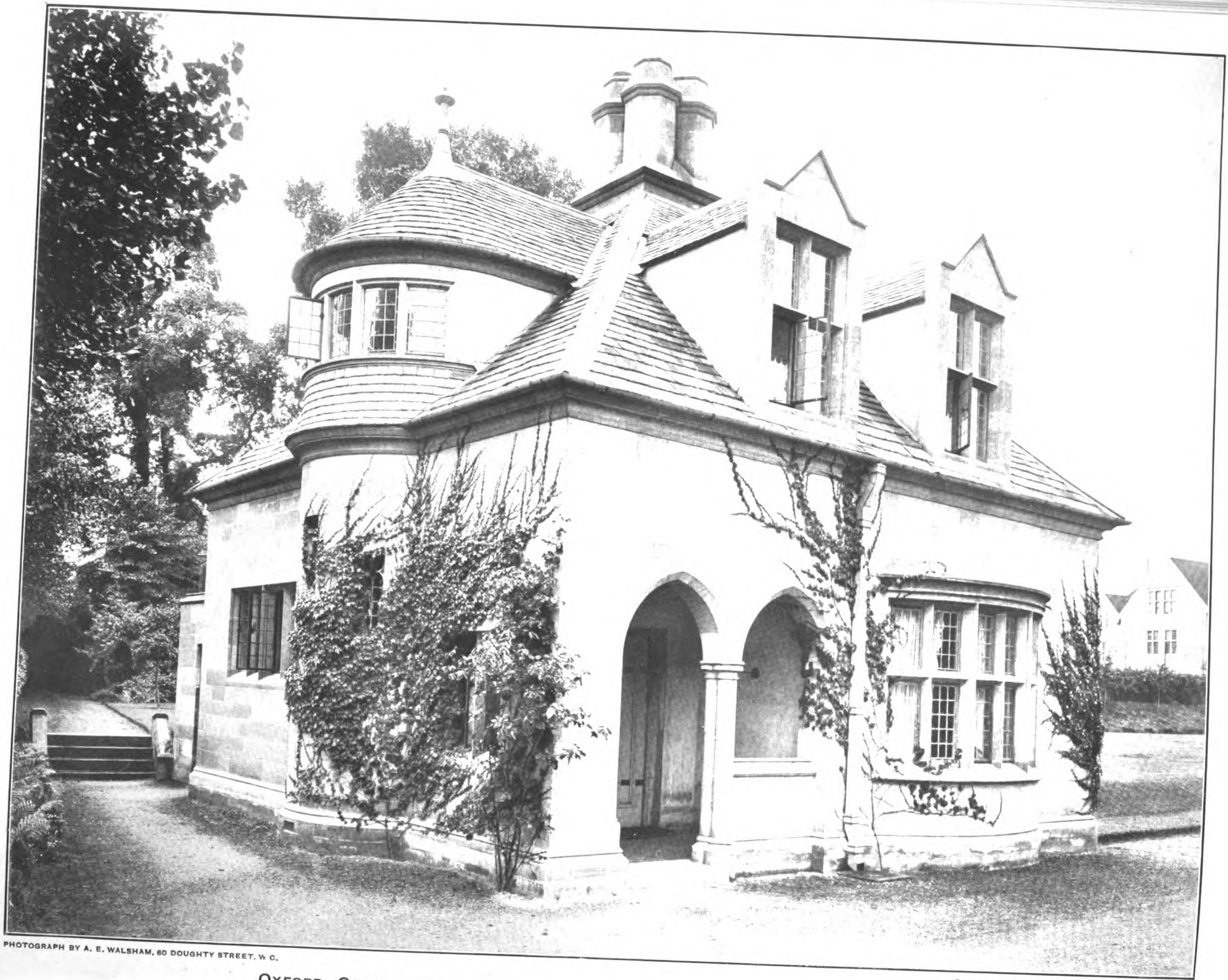

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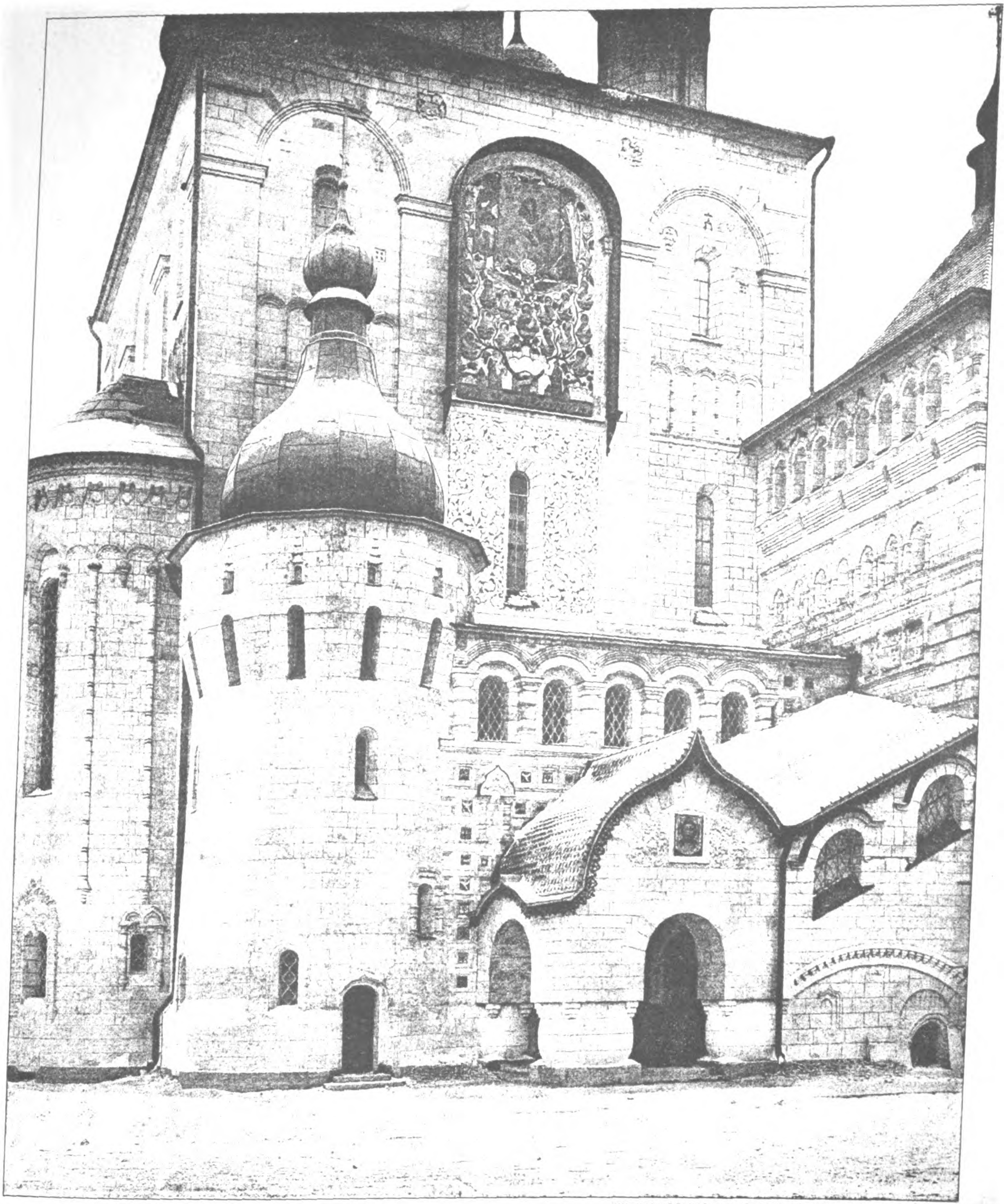

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DETAIL OF MEMORIAL CHURCH OF THE ROMANOV-TERCENTENARY ERECTED AT ST PETERSBURG.

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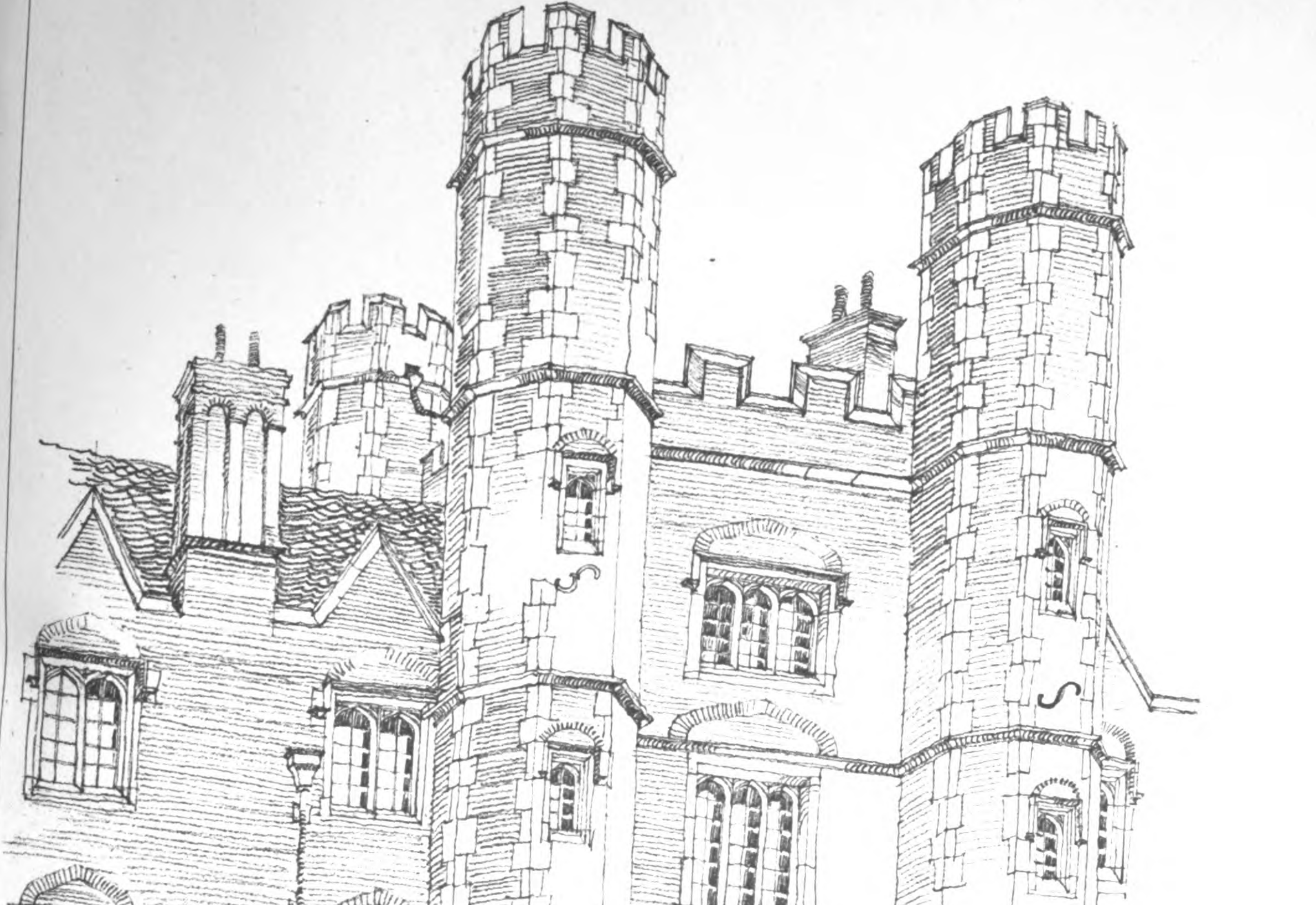

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"THE ARCHITECT" TRAVELLING STUDENTSHIP, 1913.

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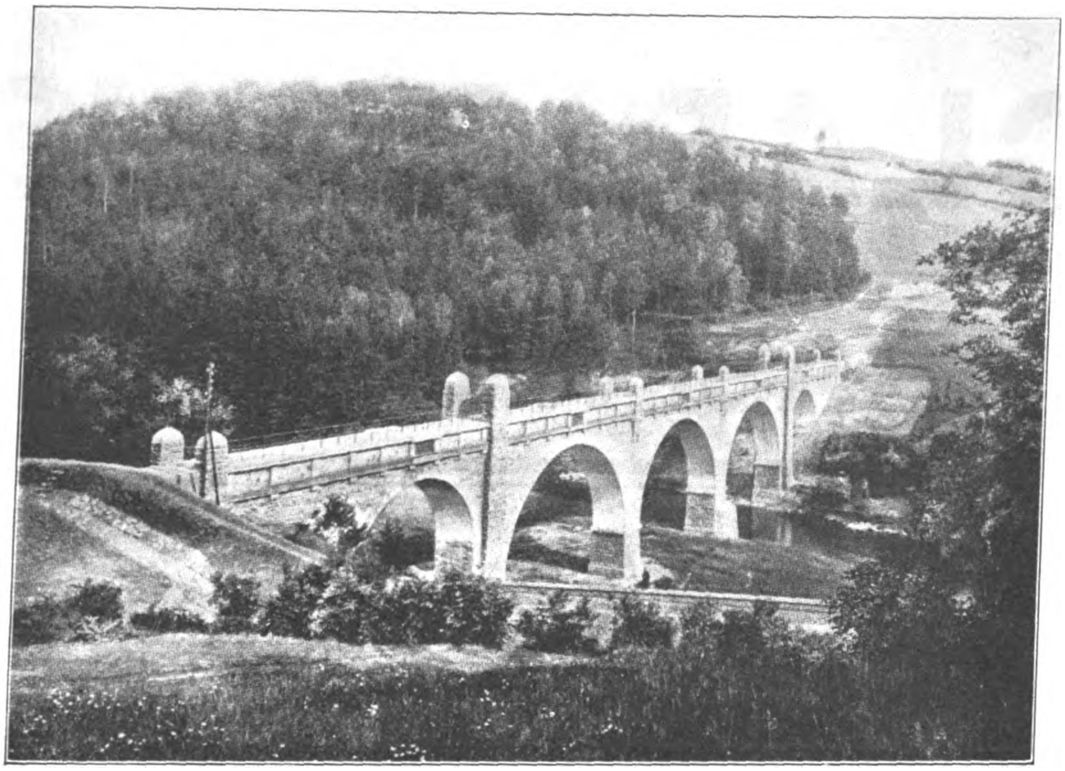
GERMANY.



[From *Deutsche Bauzeitung.*

WATER-SUPPLY OF CHEMNITZ.—AQUEDUCT OVER THE ZSCHOPAUFLUSS.

believe the mediævals actually thought it was real jet. We are always rather liable to underrate their cleverness than to overestimate it, and there is plenty of evidence to show that those skilled craftsmen could discriminate between a precious stone and what was merely coloured glass, and between black glass and true jet.

Mr. Heaton said that amongst the specimens of Roman jet from Silchester which he examined only one was true jet, the others being imitation and made of glass, as are also most of the articles sold to-day which pass for jet.

One of the commonest uses to which this material was applied was in forming the beads of which the *precule*, or rosaries, as we should call them, for counting prayers upon, were formed.

Amongst the list of tools and materials in the glass-painter's shop at Durham in 1404 there were "11 *par de bedys pro deauriacione in vitro colorato.*" Again in 1471 the Dean and Chapter of York were finishing the large tower of the Minster with stained glass and decoration, and Matthew Petty, brother of Sir John Petty the glass painter and Lord Mayor of the city, was doing the glass work; and amongst the plain quarry glazing he placed forty-eight "peynes," or panels, of heraldic coats of arms, and an item appears in the list of materials purchased for the work which shows that they paid "William Teele, of York, for 40 pairs of beads of yellow glass for the colours of the same panes, 12*d.*"

These beads were yellow. We have before seen that a favourite material for beads in mediæval times was jet, but to posssess a rosary made of real amber was, for a similar reason to that which made real jet costly, an expensive luxury. A demand creates a supply, and mediæval MSS. are full of recipes for producing imitation amber beads from all sorts of materials, ranging from albumen (which I shall refer to later) to glass. The latter material had only to be coloured yellow and the thing was done. The Bolognese MS., c. 1435, Art. 272, gives instructions how "to make yellow glass for paternosters or beads," and the recipe contains as much as five parts lead to one of sand; and Walter Gidde (1615) instructs that for a blue enamel you shall "take beades of blew glas, and beat them into poulder in a brazen motter," whilst "The Laboratory or School of Arts" (1755) says: "Glass colours ready prepared are glass enamel which is brought from Venice in cakes of several sorts, also the small glass beads that are brought over from Germany, especially from Franckford on the Main," and for green enamel directs that green rocaille or small green beads shall be ground with brass file dust and menning.

Rocaille was lead flux composed of 1 part silica to 3 parts of lead oxide, which is described by Hardicquer de Blancourt in his "Art de la Verrerie," and frequently mentioned in glass-painting recipes after the sixteenth century. La Vieil says the best kind was brought from Venice, and Whittock, in his "Painter and Glaziers' Guide and Art of Painting on Glass" (1827), says that "when vitrified it does not come out of the crucible in a mass, but in small yellow grains. These are very soft, and are useful in forming common yellow beads; it was formerly used as a flux."

Jet, then, to begin with, was black glass, with a lead base; but as time went on, and coloured enamels were required, the name was retained for flux of other colours, till finally it became a generic term for flux, whether coloured or not, and William Salmon, in his "Polygraphice," 1701, gives a recipe for glass enamel containing jet, which is followed by one entitled, "Artificial Jet for this Purpose," as follows: "Minium or Red Lead p iij. Flint or White Pebblestones pj, mix, calcine, and grind them," which would be practically colourless.

The flux, then, of mediæval as well as long into Renaissance times was a lead flux, but instead of being obtained as in earlier times by pounding up the green window-glass it was used in the easily obtainable and handy form of glass beads, generally black, except where a coloured enamel was required. We are not concerned with that part of the subject to-night, but I think the above evidence taken together fairly bears out the theories which have been advanced as to what "jeate" was, and there we will leave it.

(To be concluded.)

At the last sitting of Airdrie Dean of Guild Court—Vice-Dean Reid presiding—the Town Clerk raised the question as to the right of architects appearing on behalf of applicants for linings, or the applicants appearing personally. The Vice-Dean stated that this question had come up previously, and he personally was quite clear that the Town Clerk's view was correct—namely, that the applicants required to attend personally, or otherwise be represented by a law agent. In all petitions of importance in future this rule would be enforced.

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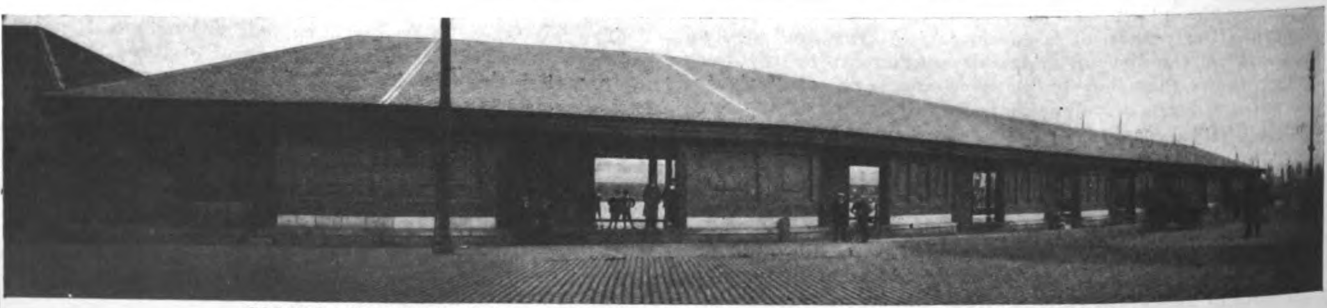

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(N.B.—Local Authorities, architects, and others are invited to submit full particulars for insertion in this weekly list. Where districts are not entered against names of architects and builders the address is as a rule local.)

ENGLAND.

BERKSHIRE.

Hungerford.—Eight workmen's cottages. Mr. G. Elms (of Stockcross), contractor (£1,300).

Maidenhead.—Council stables and depôt (£3,000). Borough surveyor.

BUCKINGHAMSHIRE.

Gerrards Cross.—House. Messrs. Forbes & Tate, architects, 16 Old Square, Lincoln's Inn, London.

North Marston.—House, for Mr. H. J. Buckingham.

CAMBRIDGESHIRE.

Cambridge.—Guildhall extension (£4,500).

CORNWALL.

St. Mewan.—Council School: rebuilding. Mr. B. C. Andrew, architect, Biddick's Court, St. Austell.

Tregonissey.—Children's Scattered Homes, for St. Austell Board of Guardians.

CUMBERLAND.

Carlisle.—Villa, Old Brompton Road, Stanwix. Mr. W. Bell, A.R.I.B.A., architect, 62 Westgate Street, Wakefield.

Cockermouth.—Theatre and two shops. Mr. P. M. Hope, architect, 11 Main Street.

Penrith.—Premises, for the *Herald* Company, Ltd. Mr. R. M. Rigg, architect, 46 King Street.

DERBYSHIRE.

Glossop.—Parish Church, Old Glossop: rebuilding.

Gospel Union Mission Church, Ellison Street: lecture-hall.

Mineral Water Works, High Street West: conversion into cottages, for Messrs. Wilson & Bates.

Stapenhill.—Long Street Church and Schools: rebuilding in Short Street.

DEVON.

Buckhorn.—U.M. Church.

DURHAM.

Bishop Middleham.—Two houses, for Mr. T. Wilkinson.

Brandon.—Proposed Elementary School for 150 places.

Spennymoor.—House, Five Lane Ends, for Mr. W. Troupe.

House, Beaumont Terrace, for Mr. N. Waugh.

Three houses, Burn Terrace, for Mr. T. Peirson.

Sunderland.—Electricity Sub-station (£600). Engineer to River Wear Commission.

Wingate.—Aged Miners' Home, Lake's Field. Mr. J. W. Hays, architect, North Road.

ESSEX.

Brentwood.—Baptist Church, King's Road.

Eastwood.—Tuberculosis Sanatorium (260 beds), for Middlesex C.C. (£53,800).

Galleywood.—Proposed P.M. Church.

Ilford.—St. Luke's Church (£6,700).

Maldon.—Baptist Sunday Schools (£800).

HAMPSHIRE.

Gosport.—Unionist Club-house.

KENT.

Dover.—County Boys' School (for 200 places), Frith Road. Mr. W. H. Robinson, Education Committee architect, Caxton House, Westminster, London.

Folkestone.—P.M. Church and School (£2,500).

Maidstone.—Houses, Buckland Hill, for Messrs. Clarke & Epps; also

House, Bower Mount Road.

Offices, St. Peter's Street, for Messrs. W. A. Stevens, Ltd.

Warehouse, &c., Hart Street, for Messrs. G. F. Clark & Co., Ltd.

LANCASHIRE.

Ashton-under-Lyne.—Maple Mill (No. 2), Dowry Street, Bardsley, for the Maple Mill Company (of Oldham).

Bury.—One hundred municipal houses, Walmersley.

Fleetwood.—Council School, Hatfield Avenue, for 845 places.

Lancaster.—St. Luke's School for 300 places.

Lostock.—Mission Church for St. Thomas's and St. John's (£1,100).

Manchester.—Offices, Grosvenor Street, for Manchester Unity of Oddfellows.

LINCOLNSHIRE.

Lincoln.—Workhouse: infirmary (£16,000). Mr. W. G. Watkins, architect, St. Edmond's Chambers, Silver Street.

MIDDLESEX.

North Finchley.—Three hundred Council dwellings, Woodhouse Estate.

MONMOUTHSHIRE.

Bedwellty.—Isolation Hospital: additions. Mr. D. H. Price (of Aberbargoed), architect.

NORFOLK.

Great Yarmouth.—Council School, Caister Road (£11,550).

NORTHAMPTONSHIRE.

Brackley.—Twelve workmen's houses. Mr. B. Sanderson, architect.

Peterborough.—Catholic Church and Church House, corner of Lincoln Road and Paston Lane; also Church Hall, Old Tithe Barn site, Boroughbury.

Warmington.—Council Elementary School: additions and alterations. Education Committee surveyor.

NORTHUMBERLAND.

Ashington.—Hospital and Infirmary (£7,250).

Denton Burn.—Ten aged workmen's cottages, for Messrs. W. Benson & Son (Collingwood Buildings).

Longhirst.—Cottages, for the Northumberland Aged Mineworkers' Homes Association.

NOTTINGHAMSHIRE.

Mansfield Woodhouse.—Two houses, Morven Avenue, for Mr. J. Lucas.

Two houses, Woodland Grove. Mr. G. Stevenson, builder, Park Road.

Two houses, stables, &c., Crow Hill Lane, for Mr. Gee.

Sutton Bonnington.—Buildings, for the Midland Agricultural and Dairy College (£39,000).

STAFFORDSHIRE.

Stafford.—Postal Sorting Offices, off Newport Road. Mr. E. Cropper (H.M. Office of Works), architect. Messrs. Espley & Sons, contractors, 10 Victoria Road.

Workhouse: children's cottage homes (for fifty children), Stone Road.

Wigginton.—Mission Church, Comberford, for sixty-seven sittings.

Wolverhampton.—St. Patrick's Catholic School, near Springfields.

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House, Warwick Avenue, for Mr. W. E. Bullock.

Five houses, Hearsall Lane, for Mr. T. F. Bird; also Fourteen houses, Sir Thomas White's Road.

Two houses, Holbrooks Lane, for Mr. H. H. Parkham.

Two houses, Allesley Old Road, for Messrs. Patrick & Barratt.

Two houses, Burlington Road, for Mr. A. Jeffs; also Seven houses, &c., Lowther Street and Heath Road.

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Twenty-six houses, Edmund Road. Mr. G. H. Broad, builder, Radford Road.

Six houses, Harefield Road, for Mr. Matthews.

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Eight houses, Kirby Road, for Mr. C. E. Needham.

Thirteen houses, Lewis Road. Mr. A. Broad, builder, Foleshill Road.

Six houses, Orwell Road, for Mr. R. H. Barnacle.

House, Palmerston Road. Messrs. Hallam & Co., builders, New Street.

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Two houses and lock-up shop, Queen Mary's Road, for Mr. J. Isaac.

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Twelve houses, Queen Mary's Road, for Mr. J. Whetstone.

Seven houses, Radford Road, for Messrs. Robinson Bros.

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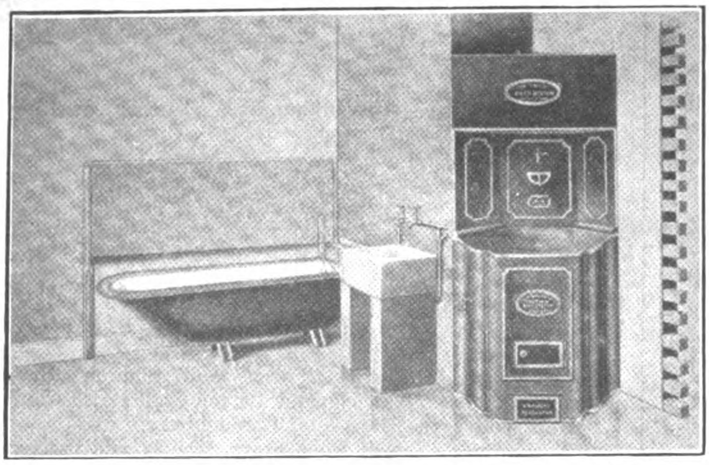
Twelve houses, Sir Thomas White's Road, for Mr. B. S. Chinn.



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Four houses, Welland Road, for Messrs. Gilbert & Griffin.

Six houses, Wyley Road. Messrs. H. Clarke & Sons, builders, Coronation Road.

Two houses, Clara Street. Messrs. J. Cox & Son, builders, Priory Street.

Picture Theatre, King William Street, for Messrs. Bell & Tullett.

Y.M.C.A.: additions and alterations to No. 10 The Quadrant, Warwick Road.

Foleshill.—Four houses, Bell Green, for Mr. A. Lomas.

WORCESTERSHIRE.

Stourbridge.—St. Thomas's Parish Hall. Mr. T. Glazebrook, architect, 82 High Street.

Worcester.—G. F. S. Lodge, Bath Road (£2,700).

YORKSHIRE.

Allerton.—W.M. Church.

Bentley.—Proposed Baptist Church.

Brighouse. — St. Paul's Wesleyan Sunday School (£4,000). Mr. A. G. Sladdin, architect, 39 Briggate.

Hemsworth.—Workhouse: extension (£1,800).

Huddersfield.—"Queen" Hotel, Market Street: additions and alterations.

Hull.—Thirty-one houses, New and Westcott Streets, for Messrs. Johnson & Mullins.

Maltby.—P.M. Chapel, Sunday School, &c. (£1,100).

Thirsk.—Secondary Council School.

WALES.

Holyhead.—Seamen's Bethel.

Llangwyfan.—Sanatorium (King Edward VII. Memorial). Mr. T. T. Rees, F.R.I.B.A., architect, 51 North John Street, Liverpool. Mr. J. Merritt, contractor, 40 Adelphi Street, Birkenhead.

Llantrissant.—Council School, Edmondestown: additional 200 places.

Montgomery.—Institute (£6,000)

Ogmore Valley.—Council School, Pantynawel, for 350 places.

SCOTLAND.

Clydebank.—Four villas, Park Road, Dalmuir (£5,000). Messrs. R. M'Alpine & Sons, builders, Radnor Park.

Leith.—Three tenements of houses, Easter Road. Messrs. G. & R. Cousin, builders, 14 Waverley Market, Edinburgh.

Motherwell.—Hospital: extension for additional twenty-seven beds (£4,500).

IRELAND.

Ardee.—Fifty workmen's houses.

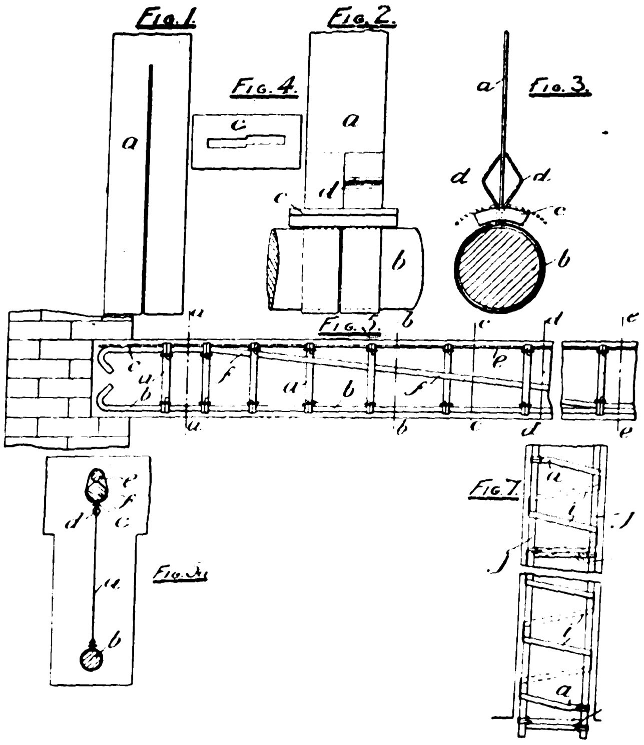
Carlow.—Thirty-three artisans' dwellings, Granby Row and Staplestown Road.

BRITISH PATENT SPECIFICATIONS.

Selected by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

The first date given is the date of application; the second, at the end, the date of the advertisement of the acceptance of the completed specification.

No. 5,192. Feb. 28, 1914.—Ties for reinforcements for concrete work. W. J. Stewart and John Woolcock, both of the firm of J. & W. Stewart, Ormeau Road, Belfast. This invention relates to ties for reinforcements for concrete work, according to which the beam, column, and other reinforcements can be made up suitable for immediate placing in the forms or moulds, tying wire being dispensed with and no risk incurred of displacements during the concreting operations The ties form an effective web action between the tension and compression portion of the beam. They also increase the compressive resistance. The ties are so designed to clip firmly to main bars, and to give perfect mechanical bond distributing the stresses along the full length of the member to ensure that the concrete and steel act together in taking the load. The tie is formed of a band or ribbon (*a*) of hoop steel of the required length, one end of which is shown broken away in fig. 1. This band is split or divided for a short distance at one or both ends, and the divided parts are bent in opposite directions and passed round the reinforcing rod or bar (*b*) in opposite directions and brought close to the main part, as shown in figs. 2 and 3, which are respectively side and edge views of the tie (*a*) as clipped to the reinforcing rod or bar (*b*). A collar or plate (*c*), shown in plan view fig. 4, formed with a stepped slot, is passed along the band and over the ends of same. The ends are then bent outwards from the band in any suitable manner, which will secure the collar in position, such as shown at *d*, figs. 2 and 3, or they may be simply turned down as shown in dotted lines. The ties may be employed to bind two rods together, or a frame composed of rods, and may be made to grip one or more bars and be used to secure diagonal strengthening rods in position, examples being shown. Fig. 5 shows the application of the tie to the reinforcement of a beam. In this case the tie (*a*) at one end is attached to the tension or lower straight bar (*b*), and by its upper end to the compression bar (*e*), and also to the camber (*f*) as shown in fig. 5A. Between the upper and lower straight parts of the camber bar (*f*) the ties (*a*) clipped to the bars (*b*) and (*e*) are placed alternately to pass on different sides of the camber bar. Fig. 7 illustrates the application of the tie to a reinforcement for a column. In this case a spiral winding (*i*) of hoop steel is employed, at each end of which a tie (*a*) is clipped to the vertical rods (*j*). May 13, 1914.



PATENT SPECIFICATIONS PUBLISHED, JUNE 4, 1914.

Selected by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

No. 8,748. April 14, 1913.—H. H. Randolph, 134 South La Salle Street, Chicago, U.S.A. Ceramic materials.

10,799. May 7, 1913. B. A. des Mesnards, Latour par la Force, Dordogne, France. Heating installations.

14,221. June 19, 1913.—Edward Cammiss, 4 South View, Shotton Colliery, Durham, and William Hutchinson, 4 Huntingdon Place, Tynemouth, Northumberland. Machines for pulverising clay and similar substances and separating stones and the like therefrom.

14,492. June 23, 1913.—V. H. Stott & Lee Schofield, both of Vernon Works, Oldham, Lancs. Water heaters, geysers, and the like.

16,274. July 15, 1913.—M. & F. Lutz, 217 Hampstead Road, N.W. Ventilators, chimney-tops, or the like.

18,042. Aug. 8, 1913.—James Henwood, Molesworth Street, Wadebridge, Cornwall. Revolving chimney coil and ventilator and flue cover as a prevention against smoky and damp chimney flues and walls.

18,200. Aug. 11, 1913.—W. B. Heap, Melrose, Stratford Road, Hall Green, Birmingham. Chimney pots or chimney terminals.

23,307. Oct. 15, 1913.—John Barker, 876 Dundas Street, Toronto. Door automatically operated.

27,336. Nov. 27, 1913.—Karl Obermann, Hauptstr. 70, Sulzbach, Germany. Hook for window shutters.

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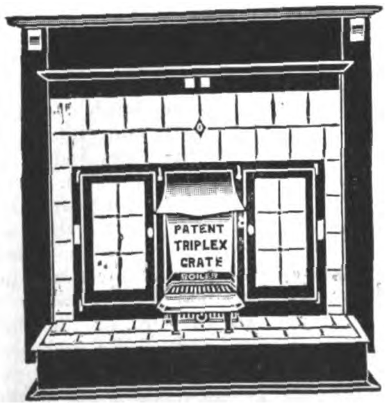

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20,669. Sept. 12, 1913.—Leon Nanquette, 10 Avenue Carnot, Laon (Aisne), France. Apparatus for heating by liquid circulation.

23,770. Oct. 21, 1913.—A. F. Benjamin, architect, 187 Union Street, Southwark, S.E. Pavement lights and the like.

Any of the above specifications may be obtained from J. D. Roots & Co.

Correspondence

[The Editor will not be responsible for the opinions expressed by Correspondents.]

The Proposed R.I.B.A. Charter.

Sir,—The proposed Charter is obviously a serious matter for the architectural profession both in the present and in the future, and I should be glad to be allowed space for a brief criticism of the proposals in these two aspects.

If the present generation of architects is to be registered, it seems to be agreed that registration must be open to *all* who have practised or acted as assistants for a certain period. Architectural practice cannot be so defined as to exclude a man who has occasionally designed some unimportant bit of building, but whose real profession, if he has one, is that of house agent, land agent, or something still more remote from architecture. Registration will hall-mark these men as architects, and they will probably be found as numerous as old-age pensioners in Ireland.

"Registered" architect cannot, therefore, for the time being, be made a title of much distinction. If, as proposed, Fellows and Associates of the Institute are withdrawn and given the separate name of "chartered" architects, it is obvious that there will be too large a proportion of men who are not really architects amongst those entitled to be "registered."

The name will imply very dubious qualifications, and all competent architects will, in self-defence, reject it.

The title of "chartered" architects will kill registration—it will do more, it will leave a very bitter feeling amongst the Licentiates. The Institute will have taken their guineas and their numerical support, and will then have slammed the door in their face.

The outlook for the future is even worse than for the present.

The Institute apparently designs for its members a privileged position with a special name and an arbitrary power of excluding other architects, however competent.

The special name is intended to confer some sort of monopoly by suggesting to the public that those who bear it are superior as architects to those who do not. It may succeed, and then (if history is worth reading) the privileged body will grow stiff and unreceptive, and, as academic atrophy and jealousy set in, will exclude all who show signs of thinking for themselves, and will stifle British architecture.

It may fail, and then the Institute will have suffered a deserved rebuff and architects will have lost a centre where common ideals might have been focussed and the common interests of the profession promoted.

If architects are to be officially graded into two classes, the difference of class ought surely to be based on a difference of capacity. In the public interest and in the interest of architecture it ought not to depend on membership of any particular club, nor on the signing of any unspecified "declaration." Any man who can pass a definite purely technical test ought to be able to demand as a right the full diploma, and the fees ought to be fixed at cost price.

Justice is firm ground to build a scheme on, and for architecture's sake let the foundation be free from all suspicion of unfairness or illiberality.—I am, Sir, your obedient servant,

Ferrers.

12 Buckingham Street, Strand, W.C.

Sir,—There appears to be some misapprehension on the part of a number of the Associates of the Institute as to the Council's attitude in regard to those architects who are not corporate members. The Council has suggested representation in larger measure for its own members than for architects outside its ranks. This should surely appeal to both Fellows and Associates as being a wise policy. It is the aim of the R.I.B.A. to ensure to its corporate members privileges which are not available to those who for one reason or another have not considered it worth while to submit to the test of a qualifying examination. Notwithstanding this, Mr. Topley, who presumably spoke on behalf of a large body of Associates, made the amazing statement on Monday evening that he was prepared to agree to proportionate representation, even though such a course involved three times as many outsiders as members being on the Council. The President emphasised the serious nature of Mr. Topley's undertaking before the vote was taken. It is inconceivable that such a course as this will receive the support of the majority of the Associates.

With regard to the class of Licentiates, this is not, as some Associates appear to think, permanent, but one that is rapidly diminishing in numbers. It is open to every Licentiate to become by examination a corporate member of the Institute, and it seems to me that any measure should be discouraged which would tend to relieve the Licentiate, or for that matter any architect, from the necessity of passing a qualifying examination before he is permitted to have a voice in the Councils of the R.I.B.A.—Yours faithfully,

Sydney Tatchell.

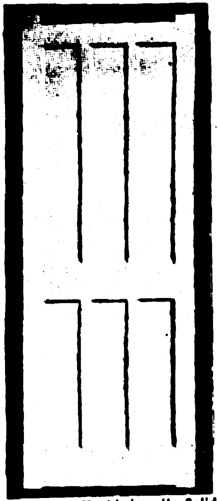
June 10, 1914.

Town Planning in South Wales.

Sir,—As far back as 1909 all public health authorities were endowed by Parliament with powers to control in the public interest the development of building estates within or near their boundaries. They may, with the consent of the Local Government Board, prepare town-planning schemes, providing, amongst other things: (1) The planning and construction of new main roads to serve the needs of through traffic, and of new secondary roads to open up back lands. The widths and modes of construction of such roads will vary according to the amount of traffic likely to pass over them. (2) The allocation of ground to certain purposes. Sites may be set apart for various purposes—*e.g.*, factories, shops, large houses, cottages, public buildings, open spaces, &c., and landowners will not be allowed to utilise their land for any other purpose except that defined in the scheme. (3) The limitation of the number of dwellings per acre. Instead of from thirty to sixty houses per acre, as is now customary, the number may be restricted to ten or twelve. In no part of the country is there greater need for the application of town-planning principles than in South Wales, where development has hitherto been on most undesirable lines. Owners of land have been allowed to lay out their estates regardless not only of public interests, but also of the interests of neighbouring landowners. Public health, convenience, and amenity have been largely ignored, and it cannot be doubted that our bad system of estate development is partly responsible both for the shortage of dwellings and also for their unhealthy and depressing surroundings. Town-planning schemes under the Act of 1909 cannot remedy the evils of past development. In many of our mining valleys, however—*e.g.*, the Ely, Dulais, Rhymney, and Sirhowy Valleys—industrial development at the present time is proceeding at a very rapid rate, yet absolutely no attempt is being made to secure a more satisfactory laying-out of building estates. The evils which we deplore in the Rhondda and elsewhere are being created in new areas to-day, and Part II. of the Housing and Town-planning Act of 1909 is practically a dead letter. Newport alone of all public bodies in South Wales has taken action, and here the third of a series of projected schemes is shortly to be submitted to the Local Government Board. Where Newport leads other authorities should follow. Cardiff especially should not lag behind. The city has been expensively developed in accordance with by-laws which are hopelessly antiquated, because, among other things, they demand the same method of road construction for quiet residential streets and for main traffic thoroughfares. Road construction could be reduced by from one-half to two-thirds, and such a reduction would render easier the solution of the serious housing problem now prevailing in the city. The town-planning of Cardiff's suburban areas is of infinitely greater importance than the widening of Duke Street, overdue though this improvement undoubtedly is—and it will cost considerably less. I would, therefore, urge local authorities all over South Wales to apply themselves immediately to the preparation of town development plans.—I am, &c.

Edgar L. Chappell,
Secretary, South Wales Garden Cities
and Town-planning Association.

3 Pembroke Terrace, Cardiff.



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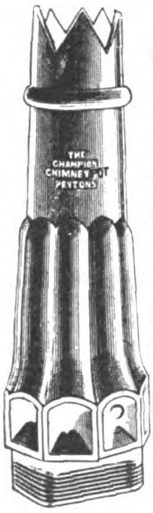
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THE ARCHITECT

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FORTHCOMING EVENTS.

Monday, June 22.

Royal Society of Antiquaries of Ireland: Summer Meeting at Dublin (June 22-27).

Royal Institute of British Architects: Presentation of Royal Gold Medal to M. J. L. Pascal, at 8.30 P.M.

Tuesday, June 23.

University of London: Conversazione in the School of Architecture at University College, at 8.30 P.M.

Somersetshire Archæological Society: Summer Meeting at Bath (three days).

Institution of Heating and Ventilating Engineers: Summer Meeting in London (two days).

Society for the Promotion of Roman Studies: Paper entitled "A Mid-Sixteenth Century Panorama of Rome by Anton van der Wyngaerde of Brussels," by W. St. Clair Baddeley, at 4.30 P.M.

Wednesday, June 24.

Institution of Sanitary Engineers: Visit to Luton Borough Sewage Farm.

Friday, June 26.

Surveyors' Institution: Afternoon Reception at Zoological Gardens, Regent's Park, N.W.

OFFICIAL ARCHITECTURE.

BY official architecture is generally understood the carrying out of architectural work by architects who are salaried officials of some public body entrusted with the expenditure of public money. They are therefore distinguished from those who are in private or independent practice, even if such practice may be partly or indeed wholly made up of work for public bodies expending public money. It will be observed that the position of official architecture is entirely distinct from any question of competency of official architects except so far as the system of official architecture may tend to the deterioration of the ability of a primarily well qualified and possibly highly artistic individual. A public body may make either a wise or an unwise selection of an individual for employment, whether as chief or as subordinate on its official architectural staff. It does not necessarily follow that the public body will have only an inferior grade of candidates as regards ability from which to choose, although it may be probable that those who feel confident that they possess the opportunity or who are actuated with the ambition to attain a prominent position in private practice will not be content to surrender their independence to become salaried officials.

The desirability or otherwise of the system of official architecture may be considered from various points of view—that of the public advantage, that of the art of architecture, and that of the architectural profession. Some light on the question may be obtained from a recently issued "Report of the Committee of Inquiry into the Architects and Surveyors' and Engineering Divisions of H.M. Office of Works, London." The committee consisted of Sir George C. V. Holmes, K.C.B., K.C.V.O., Chairman of the Board of Public Works, Dublin (Chairman), Mr. W. A. Robinson, Assistant Secretary of the Office of Works, and Mr. E. W. H. Millar, First-class Clerk in the Treasury, and their reference was "to inquire into and report upon the organisation of the architects and surveyors' and the engineering divisions of the Office of Works."

From the point of view of the public advantage it is usually asserted by the advocates of official architecture that the cost of an official staff is less than that of the customary fees paid to independent architects. It is also held that the official system is preferable from an administrative point of view. It is extremely difficult to correctly compare the exact financial cost of an official staff with that of outside architects, as it is practically universally the case that the staff is partly engaged in administrative work, partly on maintenance and repair of buildings already erected. In these latter duties there is evidence that, on occasion, the expense of the staff has actually exceeded the cost of the repair. We may, however, here quote from the report before us. The committee say: "From the administrative and financial point of view, the arguments for employing such a staff appear to us stronger" [than from a purely artistic point of view]. "We have considered the return furnished to the Select Committee on Estimates (Appendix No. 7 to House of Commons, No. 277 of 1912) showing the cost of the Board's architectural staff as a percentage of the annual expenditure by that staff for the ten years ended 1910-11. We believe that the correct figure for the ten years ended 1912-13 is about 5 per cent. (instead of the 4 per cent. given in the Return), which will, however, be decreased if our recommendations are adopted. But as the work performed by the Board's architects includes many services for which special fees would be charged in private practice, and a mass of minor works and alterations for which fees would be payable in addition to the usual 5 per cent., we think that, even at present, the cost of their salaries compares favourably with the corresponding outside charges."

In this extract will be noted one item in which difficulty arises in the comparison of the cost to the public of architectural work carried out by officials and that entrusted to outside architects. It is misleading to compare "the cost of their salaries" with "the corresponding outside charges." The latter include office rent, expenses, and stationery. The former do not and therefore compare "favourably." It is notorious that in public offices not only the architectural staff, but all, are more sumptuously housed than in corresponding outside professional establishments, whilst there can be no question that expenditure on stationery, &c., is more lavish. An outside architect who paid nothing for establishment expenses beyond the salaries of his staff could profitably afford to work for less than 5 per cent.

The consideration of the public advantage is, however, not limited to the cost of the architectural staff. There is the far more important question whether the buildings they produce are good value for the public money, leaving out of the question for the moment "the purely artistic point of view." On this question the committee "think the experience of the official architects must often enable them to produce more suitable and cheaper buildings. They have an intimate knowledge of the requirements of Government Departments, and are specialists in certain types of buildings. It is important to remember that nearly one-half of the new work undertaken by the Office of Works is in connection with postal and telegraph buildings, which are of a highly specialised character, unfamiliar to the outside architect, and can, allowing for varieties of site, be treated by the official architect on more or less uniform lines, which must tend to economy of public money."

It must be admitted, we think, that when a public body has a sufficiency of buildings of a particular class to enable them to keep fully employed an architectural staff who devote their whole attention to such buildings and become specialists, the public should reap the advantage of more efficient buildings. We do not, however, agree that they will be cheaper, for the specialist always has a tendency to aim at higher efficiency and improvements, and with public money to spend is apt to let himself go.

The cases in which public bodies can permit their officials to become specialists are limited. The Office of Works can specialise in post offices, the London County Council in industrial housing and fire-stations, many county authorities in schools, but the ordinary borough architect may only see one hospital, one workhouse, one fire-station, and so on erected during his tenure of office, and must obviously be inferior in experience to the outside architect who designs such buildings all over the country.

As regards the art of architecture the report contains sufficient condemnatory evidence of the system of official architecture. "The architects of the Office of Works," we are told, "spend only a comparatively small part of their official time in designing," and also "In a Government Department it is inevitable that technical officers, especially in the higher posts, must spend some of their time in writing on official files." No matter how talented an artist may be on his appointment to an official staff, it is obvious that he must deteriorate in his ability as an architect by becoming an expert manipulator of red-tape. This deterioration will reflect also on his ability as a specialist in the arrangement of a certain class of buildings, even from a purely utilitarian aspect. The public cannot get the best architecture, either æsthetically or practically, from the man whose thoughts and energy are expended on official files and red-tape. The committee admit that "there is a certain class of buildings with regard to which the artistic point of view must obviously predominate—*i.e.*, broadly speaking, public buildings of the first class in London, Edinburgh, and Dublin."

As regards the architectural profession, we must remember that one man's loss is another man's gain. The outside architects lose the opportunity of work in many directions, and, we regret to say, in increasing ratio by the employment of salaried officials. But these latter are often members of the profession who would stand small chance of successful independent practice. They are, as a rule, well paid for the ability they possess and the amount of work they do. For the most part, they have a soft job and a sure one, with a pension at the end. We do not for one moment believe, in spite of figures produced, that the public do get their architecture more cheaply; but, on the contrary, that on the whole the profession of architects get more out of the public for their services by the system of official architecture than by independent and outside practice.

NOTES AND COMMENTS.

In a paper read by Mr. Raymond Unwin, F.R.I.B.A., at a recent meeting of Municipal and County Engineers, held at Dunfermline, and summarised in the *Sanitary Record and Municipal Engineering*, the dominant principles of modern town planning were well and clearly defined. Main roads should be planned primarily for the convenience of traffic, with as few intersecting roads as possible to reduce their efficiency. Subsidiary roads should be designed so that they cannot become traffic carriers, and the cost saved by a reduction in their width would be a set-off for the extra cost of main traffic highways. Great attention should be paid to the orderly arrangement of houses and the decoration of streets with trees and shrubs. Buildings characterised by more handsome architectural treatment should be placed where they will confer distinction upon several street pictures, and regard should be had to contours in arranging building lines, &c. It should be remembered that a town-planning scheme is an extension of the field covered by building regulations. It is a drastic alteration of the character of development which renders many older regulations unnecessary. To achieve the best results there must be considerable elasticity in the number of minor roads, their arrangement on the plan, the maximum of houses to the acre, and in the laying out of buildings around corners. To ensure the most perfect building regulations the co-operation of architects and builders should be enlisted. Regulations should aim at the prevention of anything detrimental to health or injurious to the local amenities, whilst leaving the utmost liberty to the builders to produce artistic and convenient buildings. Regard should be paid to the probable introduction of new building materials. The end aimed at is to maintain a certain average standard in building and the development of a district on artistic lines. This should not be attempted by a committee of laymen, but by co-operation of the architectural and municipal engineering professions the desired end could be achieved.

The meaning of heraldry is nowadays in the minds of most people very much obscured. It is almost universally forgotten that a heraldic cognisance is entirely personal, whether it be crest, badge, coat, flag, or motto. Originally adopted as a means of enabling men encased in armour to distinguish the personality of friend or foe, there is now a vague idea that a particular crest or coat-of-arms may be used by anyone who bears a particular name. Not only is this idea erroneous, but as a fact no one is entitled to a particular coat or crest to whom or to whose ancestor in direct line it has not been directly granted or recognised by the College of Heralds. To wear the cognisance of another is to acknowledge servitude to or dependence upon the rightful owner, as when a soldier wears the Royal arms. We still have true heraldry existing amongst us in the colours of a jockey's coat and cap, the racing flag of a yacht, the colours of an athlete upon the track. These are all recognised as distinctly personal and are used exactly as were crest and surcoat in mediæval times to distinguish individuals and their property. No owner of a racehorse would dream of allowing his jockey to wear the racing colours of another man, and no man has a right to other than his personal crest. The colours of a football team or of a college crew are examples of the servitude or dependence of the wearer who belongs to a corporate body. An interesting discussion recently occurred at a meeting of the Glasgow Corporation on the consideration of a proposal to celebrate the sexcentenary of the battle of Bannockburn by flying the Scottish saltire flag in the public parks. Some members wished to substitute the lion rampant, but Dr. Gemmell, in supporting the proposal for the saltire flag, urged that the Corporation ought to be exact in questions of heraldry, and set an example to the citizens of Glasgow. He reminded them that at the time when the lion rampant came into use heraldry then became known to the Scottish nation for the first time. That was in the reign of William the Lion, but the flag that had been displayed by Councillor Campbell with so much unction was really the personal flag of the King of Scotland. He had said what he believed to be true. It was the flag of William the Lion, and the Scottish nation, following him, and not knowing the niceties of heraldry, adopted it; but it was not the true flag of Scotland. The true flag was the flag of the patron saint. The national flag of England was the Red Cross of St. George on a white ground; the national flag of Scotland was the St. Andrew's Cross or saltire on a blue ground, and when these were combined with the flag of St. Patrick they got the flag known as the Union Jack, which represented the United Kingdom and Ireland. That flag every citizen of the United Kingdom and Ireland was entitled to fly if he chose, but he had no more right to fly his king's personal flag than he had to use his king's personal crest.

A correspondent of the *Liverpool Courier* writes enthusiastically of the unique opportunities of reaching many view points within the new Cathedral which will not be available when once the first part is completed and the scaffolding removed. He had access not only to all parts of the ground floor, but also to the topmost parts above. From the triforium, 82 feet up, he was able to reach the temporary wooden floor that supported the forest of scaffolding upon which has been built the vaulted roof of the choir. From thence he not only had a close and clear view of the massive completed stone ribs, but could actually pass through the tracery of the vast Ismay memorial window on to the scaffolding that remains for use when, in due time, the glass is put in position. We are told that tickets are issued at the Church House, South John Street, for admission on the last Saturday afternoon of each month, so that anyone who wishes to examine at close quarters a great cathedral in the making now has the opportunity.

Of great importance to school managers and in a lesser degree to school architects is the opinion obtained by the National Society from Sir Robert Finlay, K.C., Mr. Robert Younger, K.C., and Mr. A. T. Lawrence, with reference to the Board's powers in regard to playground requirements. It is common knowledge among all persons interested in either provided or non-provided schools that within the last few years the Board of Education has been pursuing a quite novel, and very disquieting, line of pressure in regard to school premises. In every direction, both local education authorities and the managers of voluntary schools have found themselves faced with demands for playground extension which would involve heavy and even crushing outlay, in connection with schools which have hitherto, often at great cost, fulfilled all the requirements made upon them by the Board. Hardly ever, if ever, so far as we are aware, has the Board put forward a demand for the enlargement of playground accommodation by itself. There are cases in which the voluntary school managers, and others in which local authorities also, have endeavoured to isolate the playground question, and to ascertain whether, if other requirements were met, the demand for playground extension would still be enforced. To such inquiry the Board has avoided returning a direct answer. Nevertheless, there can be no doubt that in a considerable number of cases the managers of voluntary schools, and probably local authorities also, have been forced to incur most burdensome expenditure for the acquisition of additional playground space, in order to dispel the cloud of menace which had been created by communications from the Board in which emphasis had been laid on the playground question. In the opinion of the eminent counsel consulted by the National Society, the Board of Education does not possess the legal power to make requisitions for further or better playground accommodation, under the existing Code or Regulations, in the case of schools now recognised; and, further, counsel are on the whole of opinion that no mere amendment of the Code and Regulations, but express legislative sanction, would be required to legalise such demands on the part of the Board in regard to playground accommodation as for some years it has been making right and left.

That local museums should deal with local objects is to our mind so clearly indisputable that we welcome the proposal for the establishment of a separate museum for objects relating to, and illustrative of, the history of Sheffield and its immediate neighbourhood.

The proposal emanates from a sub-committee appointed by the Hunter Archæological Society, who submit the following points amongst others:—

"That at the present time the City Council possesses many valuable objects connected with local history and antiquities, arts and crafts, but that these are now dispersed in different buildings amongst other collections, and in the case of the High Hazels Museum not very accessible to the majority of the inhabitants of this city.

"That a central and separate collection of such objects would stimulate interest on the part of a greater number of citizens in the past history and past records of the city they inhabit and afford greater facilities for those engaged in research work, and be an inducement to owners of private collections in the district to present their treasures or leave them by will to the City Council for the benefit of future generations.

"That a collection of examples of local craftsmanship would act as a stimulus to present-day craftsmen and as an advertisement of Sheffield workmanship to visitors to the city."

An American educational experiment is worthy of trial here. In New York collections from the museums are taken to the schools and the interest of the scholars in the museum thus aroused. Last year 500 schools were visited by these collections, and more than 1,000,000 children studied them. There is no sign of "hands off"; the specimens may be handled freely by the children, as the teacher explains and answers questions. The result is that they have been aroused to the liveliest interest in the wonderful treasures of the great museum, and now find their way thither unurged, to renew acquaintance with their visitors and extend their list of friends. Having once held a bird in the hand, they are naturally eager to see it in its natural setting, and when they are told of the beautiful bird room at the museum, where four or five days in the week they can enter free of charge, they lose no time in pushing open this new door into culture.

The British Fire Prevention Committee has issued a volume recording the results of its earlier fire tests with partitions, the results of the tests being presented in tabular form, which facilitates comparison and makes the record particularly useful for reference purposes. These earlier tests, which were conducted between 1898 and 1905, have been forgotten by many, yet they deal with many materials used to-day in respect to which particulars may be valuable. The seventeen partitions dealt with in the report are grouped according to their classification under the British Fire Prevention Committee's Standards of 1903. They vary in thickness from 2 in. to 5½ in., but for modern everyday uses those of from 2 in. to 3½ in. thickness merit primary attention. Among these a 2½ in. porous terra-cotta partition obtained the two and a half hour classification of affording "full protection," and a 3⅛ in. pumice slab partition the classification of affording "partial protection" on a two-hour test. The fire tests are run up to temperatures of about 2,000° F., and are followed by the application of water under pressure. The issue of the volume is intended mainly for the Committee's subscribers, but a small edition will also be available for the public (at 10*s.* 6*d.*), and will be obtainable at the Committee's Offices, 3 Waterloo Place, London, S.W.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

A meeting of the Institute was called on Monday evening to consider the "Proposed Form of Memorandum and Articles of Association of the Architectural Defence Union (Limited by Guarantee)," but did not take place, as there were only thirty-five members present.

Mr. George Hubbard (Vice-President), in announcing that there was no quorum for the transaction of business, said that the small attendance of members was very regrettable, as the Council and the Board of Professional Defence had devoted much time to the elaboration of the scheme.

Mr. K. Gammell and Mr. Wm. Woodward supported the Chairman, and hoped that the matter might be brought forward again at a more suitable time.

Mr. E. Greenop, in opening an informal discussion, said that much useful information had been obtained, but it was more or less confidential, and could not be put into print. The scheme was based on the constitution of the Medical Defence Union, in which body it had been found that the financial risks were very small, and the benefits obtained by members very large.

Mr. Maurice B. Adams stated that many provincial members had expected help from the Institute in fighting disputed cases, but there were no special powers to do this in the charters, and in any case the Institute had no funds available. Large losses had been incurred by several members of the Institute, which would have been prevented if such a Union had been in existence.

Several members suggested that communications should be sent to the allied Societies and to the general body of architects in the country; and an Associate proposed that the Union should be registered by seven members as a limited liability company and a prospectus sent out broadcast.

Mr. Max Clarke pointed out that a Union with small membership would be powerless, and would have no funds to fight cases. If substantial support was not obtained the scheme had better be dropped.

Mr. K. Gammell stated that a meeting of the Liverpool Allied Society had decided to support the proposed Union.

Mr. Hubbard, in concluding the discussion, said that the memorandum would be pigeon-holed, and could be brought forward again in the next session if members wished. He thought the meeting should express its thanks to Mr. Max Clarke and Mr. Gammell, who had devoted a great deal of their time to the working out of the details of the scheme.

This met with general approval, and the meeting then concluded.

ROYAL INSTITUTE OF ARCHITECTS OF IRELAND.

AN ordinary meeting of the Council of the above body was held at the Institute Rooms, 31 South Frederick Street, Dublin, on the 6th inst. The President, Mr. R. Caulfeild Orpen, B.A., R.H.A., was in the chair. The Council discussed the resolution passed at the general meeting to circularise members of the Institute with reference to the proposed charter of the British Institute, and decided to give effect to the resolution. It was decided to offer the usual prize of £10 10*s*. to be competed for by members of the Architectural Association of Ireland. Mr. C. J. MacCarthy undertook to act as assessor. The question of taking steps to have a survey and record of ancient memorials throughout Ireland was discussed, and adjourned for further consideration.

A special meeting of the Council of the above body was held at the Institute Rooms, 31 South Frederick Street, Dublin, on the 13th inst.

A deputation from the Dublin Building Trades Employers' Association waited on the Council with reference to the privacy of priced bills of quantities submitted with tenders. Mr. John Good put the views of the Association before the Council, and a discussion ensued, and the Council promised to consider the matter. Having transacted other business of the Council, the meeting terminated.

A general meeting of the members of the Institute will be held on Monday evening, June 29, at 8 o'clock, to further discuss the R.I.B.A. proposed charter and registration.

COMPETITION NEWS.

CARDIFF.—The Housing Committee have decided to withdraw their offer to consider plans by outside architects for the proposed housing scheme. A sub-committee will act with the city engineer in the matter.

HAYWARDS HEATH.—In the limited competition recently held in connection with the proposed Congregational church and schools, an award has been given in favour of the designs submitted by Messrs. George Baines & Son, 5 Clement's Inn, Strand, W.C.

HYDE.—The Education Committee have decided to invite plans for the erection of a new elementary school and a special standard school by a limited competition of ten architects, to be selected by the Education Committee, and to offer three prizes, the prize obtained by the successful competitor to be merged in his commission. The elementary school is to provide accommodation for 800 children, provision being made for an assembly hall of the size required by the Board of Education regulations for each department, class-rooms, teachers' rooms, cloak-rooms, lavatories, caretaker's rooms, &c. In the special standard school accommodation will be provided for 400 scholars, and will contain assembly hall, class-rooms, general science rooms, handicraft and housewifery rooms, teachers' rooms, &c. Mr. Percy Worthington has been appointed to adjudicate on the plans submitted.

NEWCASTLE-ON-TYNE.—The Council of Armstrong College, at their meeting on Monday last, adopted the recommendation of the assessor (Mr. Walter Brierley, F.S.A., F.R.I.B.A., of York), and accepted the design submitted by Messrs. Newcombe & Newcombe, Newcastle, for the hostel for women students, to be erected in Eskdale Terrace. It was decided to entrust this firm with the carrying out of the work. The hostel is to accommodate forty students.

SEAHAM HARBOUR.—Mr. William Milburn, F.R.I.B.A., has been nominated by the President of the Royal Institute as assessor of the competition arranged by the Urban District Council for designing a council chamber and offices.

SKIPTON.—A new Congregational church is to be erected to replace the present building in Newmarket Street, from the plans of Mr. James Totty, architect, Rotherham, which were placed first in open competition. The premises are estimated to cost £4,500.

WHITBY.—Members of the Society of Architects are requested not to take part in Whitby saloon and concert hall competition without first ascertaining from the Secretary whether the conditions are approved by the Society.

ILLUSTRATIONS.

ST. AUGUSTINE'S CHURCH, HIGHGATE, N.

THE large plate is a reproduction from the architect's working drawing of the new west front of the above church, and on a separate plate is a photograph showing it in course of erection.

The building was commenced in 1887 from designs by the late J. D. Sedding, but owing to the great cost of the foundations it could not be completed, and for many years has only had a temporary west wall, while internally there was no proper flooring, and the chancel was a wooden structure with temporary fittings.

The ground plan, also illustrated, shows the extensions at the west and on the north; likewise the arrangement of the choir and sanctuary. The floor here is of black and white marble, and the choir stalls are dark oak. The panelling round the east end, later to be enriched by carved cresting, wrought-iron grilles into chapel and decoration, is raised in the centre and prepared as the base of a large reredos, which will be more richly decorated.

The work, which is to be dedicated by the Bishop of London to-morrow, has been executed by Messrs. Ashby Bros., builders, with Mr. J. White as foreman. The stonework, which is Weldon, has been worked and fixed by Mr. J. Bysouth. The tiling is by Messrs. Ames & Hunter; the wrought-iron work by Messrs. Bainbridge Reynolds; the marble work by Mr. Tanner; Messrs. Earp & Hobbs have executed the carving; the panels of the retable have been modelled by Miss Dorothy Rope; and the gesso work and decoration by Mr. G. Tosi, from the designs of the architect, Mr. J. Harold Gibbons, of the firm of J. Gibbons & Son.

ST. STEPHEN'S CHURCH, GUERNSEY.

THE Vicar and Churchwardens wish to place a screen and rood in the church, but it is desired that the work be very light and open. Also there is an existing low stone screen, which, although not very good in detail, has to be retained.

The walls of the church are of granite, and much cutting will be expensive, so the curved braces of the rood beam are designed to carry the weight of this down to the side posts of the screen. The posts will be framed to a continuous head and sill piece, the lower part being quite open and the upper having rich open tracery and carving. This design also is by Mr. J. Harold Gibbons.

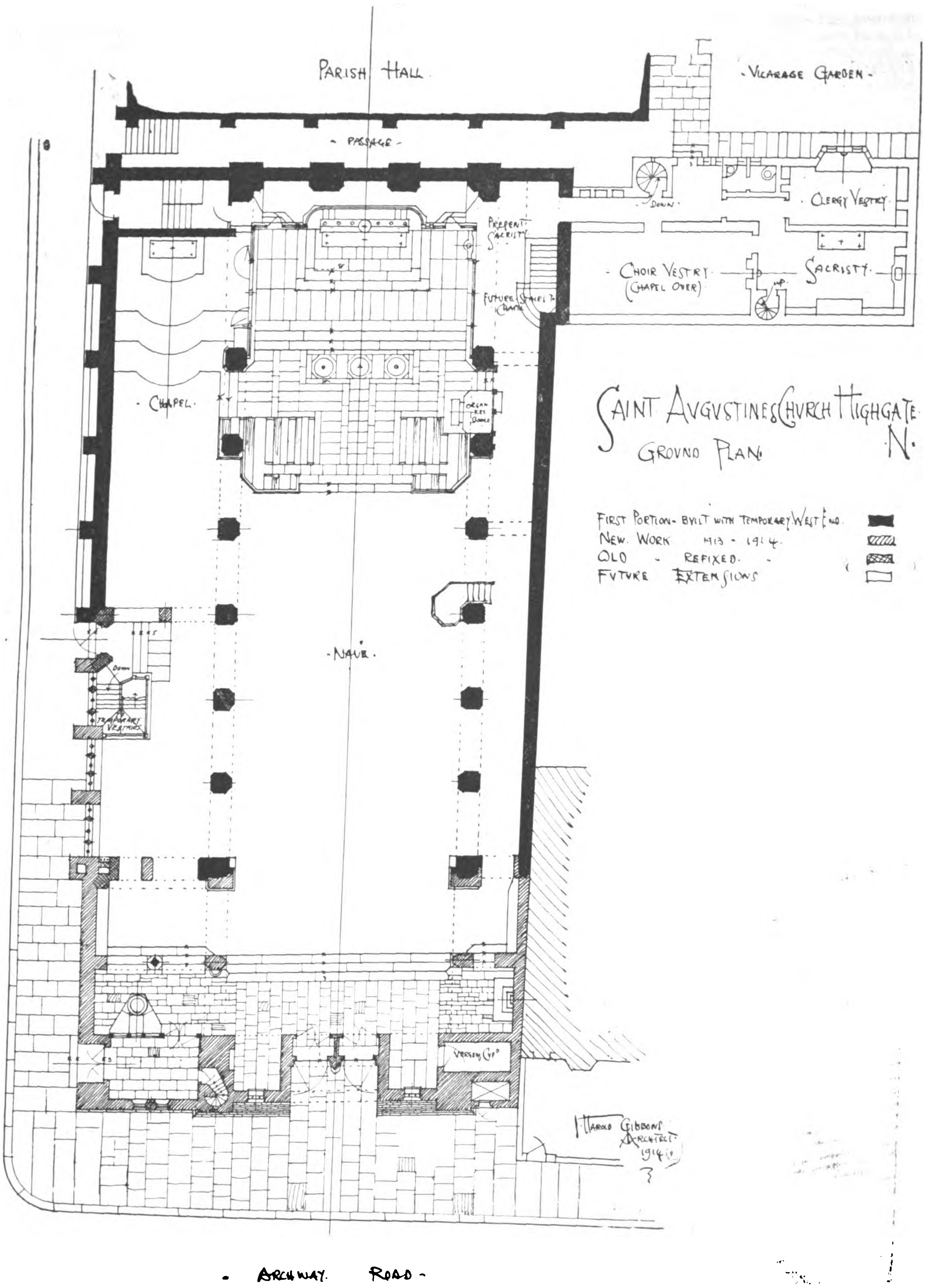
GORTON PARISH CHURCH.

THE parish church of Gorton is one of the oldest foundations in the Archdeaconry of Manchester; the registers in the church date from 1598.

The church was rebuilt in 1871, but the chancel and vestry accommodation is very inadequate for so important a parish, and it is proposed to improve this, at the same time providing a chapel and enlarging the organ chamber.

The suggested additions are shown on our reproduction of the drawing now hanging in the Royal Academy.

Messrs. John Gibbons & Son are the architects.


Parish Hall
Vicarage Garden
Passage
Down
Clergy Vestry
Present Sacristy
Choir Vestry
(Chapel over)
Sacristy
Up
Future Stairs to Chapel
Chapel
Organ Key Board
Nave
Down
Temporary Vestries
Langdon Park Road
Archway Road
Saint Augustines Church Highgate N.
Ground Plan
First Portion - Built with Temporary West End
New Work 1913 - 1914
Old - Refixed
Future Extensions
J. Harold Gibbons Architect 1914

ANCIENT DOMESTIC IRONWORK.—IV.

CONNECTED WITH THE SMOKING OF TOBACCO.

By J. Seymour Lindsay.

Illustrated by the Writer.

(*Concluded from page* 480.)

Domestic metal implements that owe their origin exclusively to the use of tobacco are not to be found in a great variety of type, but amongst them may be found some of the most interesting of domestic bygones.

Before dealing individually with the various types, it may be of interest to call to mind the manner in which tobacco made its debut into the old world.

Tobacco was known and used medicinally in Europe as early as 1560. But it was not till twenty-eight years later that the habit of smoking (or drinking, as it was then and for some time afterwards commonly termed) was first introduced into Europe by Ralph Lane and Sir Francis Drake. These gentlemen, who returned to England from Virginia in 1586, brought with them pipes and tobacco, which they handed over to Sir Walter Raleigh.

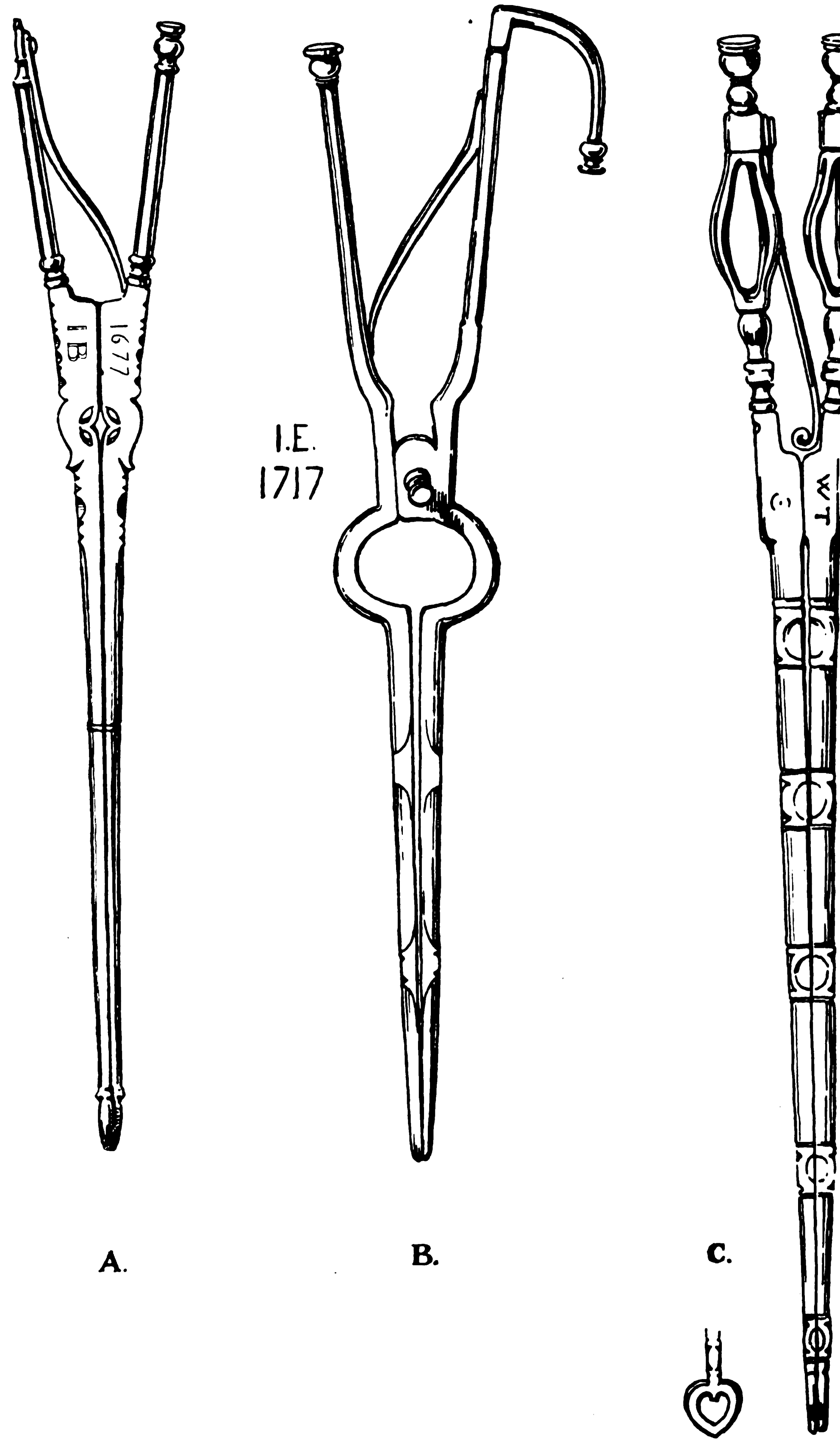


Fig. 1.

That not long after its introduction it was looked upon in many quarters as a dangerous habit is evident from the strong opposition to its use that sprang up all over Europe.

Headed by King James I., who in 1604 published his famous "Counterblast to Tobacco," England was followed by other countries in the endeavour to suppress the habit. In Russia, Fairholt tells us, persons convicted of smoking had their nose amputated; and in the Canton of Berne, in Switzerland, it was ranked as an offence next to adultery. Pope Urban VIII. excommunicated all who used tobacco in church, and in Turkey torture was resorted to in the endeavour to stamp it out.

There is no doubt that what first caused a vast number of people to smoke tobacco was the fact that it was considered a wonderful cure of and preventive from disease. This seems to have been admitted by both Barnaby Rich and Robert Burton, although they were greatly prejudiced against its use for smoking, as the following extracts show.

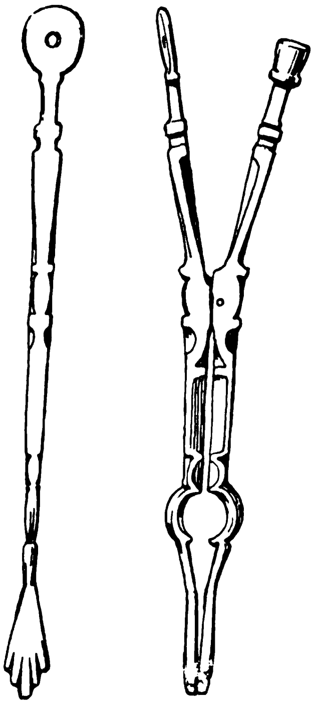


FIG. 2.

Barnaby Rich, writing in 1619, says: "There is no man that doth use to take tobacco, but he must take upon him the imputation of some disease or else he must acknowledge himself to be a foole." And Robert Burton, in his "Anatomy of Melancholy" (1652), gives the following flamboyant description of tobacco: "Tobacco, divine, rare, and super-excellent tobacco, which goes far beyond all the panaceas, potable gold, and philosophers' stones, the sovereign remedy for all diseases. A good vomit, I confess, a virtuous herb, if it be well qualified, opportunely taken, and medicinally used; but as it is commonly abused by most men, which take it as tinkers do ale, 'tis a plague, a mischief, a violent purger of goods, lands, health, hellish, devilish and damned tobacco, the ruin and overthrow of body and soul."

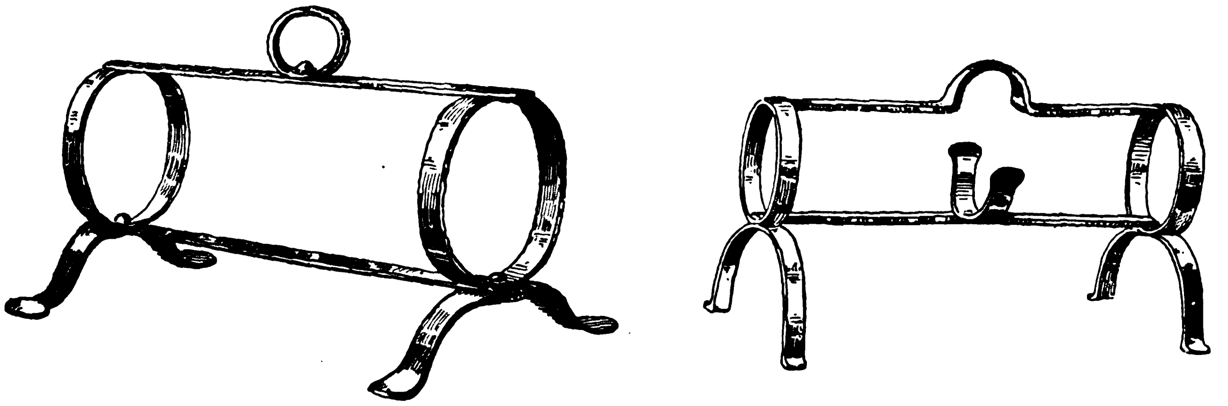


FIG. 3.

During the year of the great plague (1665) all the boys at Eton were obliged to smoke every morning as a precaution against catching the dread disease. (Reliquiæ Hearnianæ.)

This is, to the modern British idea, an extraordinary proceeding, and very different from the sentiment that existed before the last great outbreak of the plague, judging from the rules of Chigwell School, which was founded in 1629, and which definitely state, among other things, that the master must be "no puffer of tobacco."

The cultivation of tobacco in this country was prohibited by both James I. and Charles I., and also during the Commonwealth in 1652. But it appears to have been revived, for Christopher Wilkinson states in a pamphlet written in 1682 that "It is planted in great plenty in Gloucester, Devonshire, and in several gardens about Westminster and other parts of Middlesex." And, further, that "His Majesty sending every year a troop of horse to destroy it lest the trade of our American plantations should be incommoded thereby." Which strikes one as being an early and quite novel form of Colonial preference.

The price of tobacco during the few years immediately following its introduction varied between five shillings and three and ninepence the ounce. At all events, this is the price "Wild" Darrell paid for his tobacco three years after its introduction.

It seems clear that the price fell considerably during the earlier part of the seventeenth century, for Barnaby Rich states in 1619 that tobacco smoking was "an abuse which is so common with every ostler, tinker, &c."; and other opponents speak of it as a habit common among the lowest classes.

First in interest among the various examples of metal work connected with tobacco smoking are the delicately shaped tongs called variously smokers' tongs, pipe tongs, tobacco tongs, and ember tongs, which were used for securing an ember to light the long churchwarden pipes.

There can be no mistaking a pair of these tongs, as apart from their being usually fitted with one or more tobacco stoppers, the jaws are invariably closed with a spring fitted between the handles. The reason for this is a highly practical one, as it allows the user's attention to be directed towards stopping the tobacco in the pipe bowl whilst the ember remains firmly held, and also allows the same ember to be handed round from one person to another.

Two dated examples are exhibited in the Brighton Museum, and are illustrated in fig. 1, A and B. The earlier pair, which is dated 1677, is part of Mr. L. G. Russell-Davies' loan collection, which is one of the finest collections of domestic metal-work in the South of England.

The Guildhall Museum, London, has some interesting specimens of these tongs. The one which is seen in fig. 1, C is unusually elaborate, and has openwork handles finished off in the form of tobacco stoppers, one of which can be removed and also serve as a pricker for cleaning the bowl of a pipe. Another pair in the same museum, which is illustrated in fig. 2, is uncommonly small, measuring 5¼ inches in length, and is made of brass, which is also unusual, as the large majority of these tongs were of wrought-iron or steel.

During the eighteenth and first half of the nineteenth centuries an implement called a pipe kiln was in general use. This was an iron rack used for cleaning clay pipes, and is illustrated in fig. 3.

When the long churchwarden pipes became foul with tobacco juice they were not thrown away, but were laid in one of these racks and then placed in a very hot oven and baked, when they would be taken out quite clean and very much nicer to smoke than new clay.

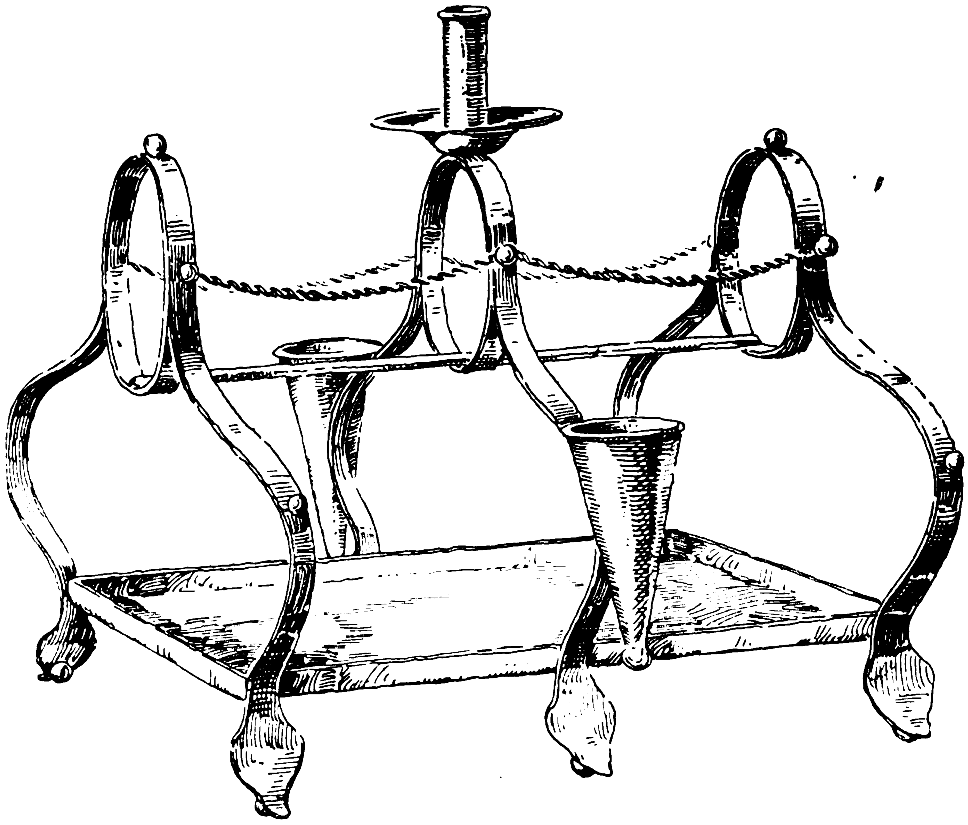


FIG. 4.

These kilns also served as pipe racks.

Another form of pipe rack which was quite a standard type during the eighteenth century has, in addition to a frame for holding churchwardens, a nozzle for supporting a candle, two conical-shaped spill-holders, and a tray at the base for ash and burned spills. There are two examples exhibited in the Victoria and Albert Museum, South Kensington, one of which is shown in fig. 4. They are constructed of thin sheet-iron, tinned or painted.

Of tobacco boxes there are two distinct kinds—namely, those of convenient size and weight to enable them to be carried about the person, and those which were for table use. The latter were usually made in lead, although they are also to be found in pewter, cast iron, and occasionally in leather. The most common form takes the lines of a sarcophagus, which type is illustrated in fig. 5, A.

The portable box of the same period is of wrought iron or steel, and usually quite plain, as shown in fig. 6, A. An exceptionally elegant box, dated 1733, has the lid decorated

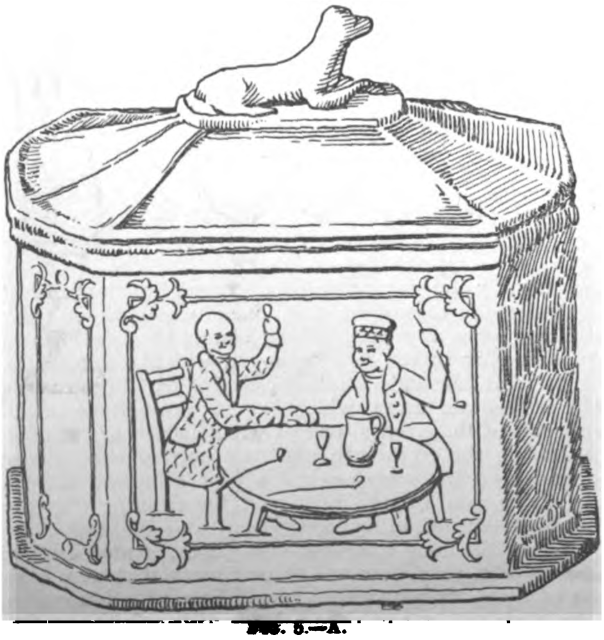


FIG. 5.—A.

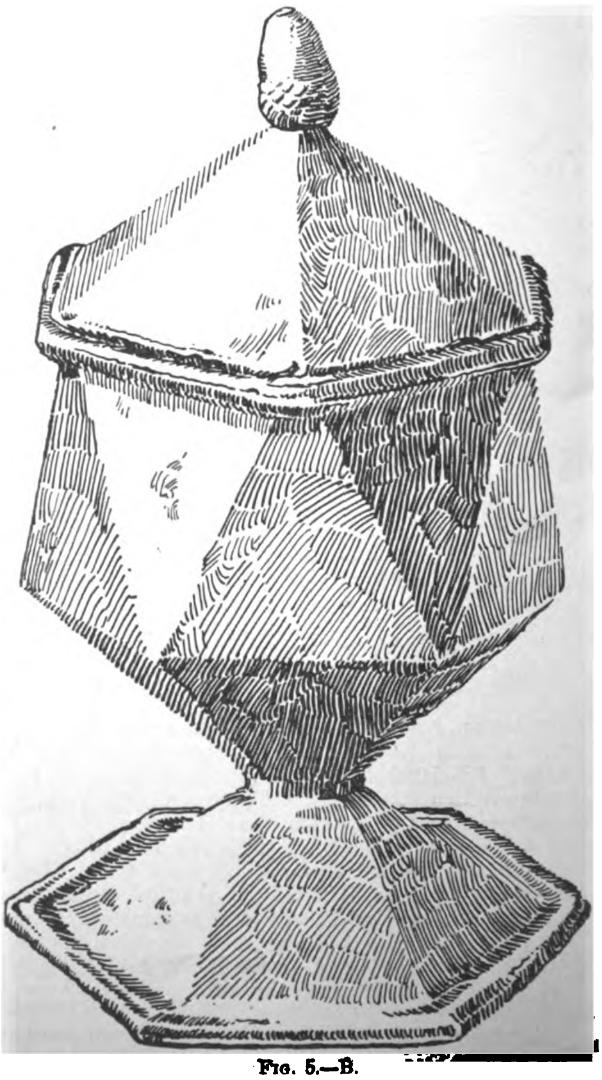


FIG. 5.—B.

with incised ornament. Both the hinge and the spring which regulates the catch are fine examples of workmanship, and are shown in fig. 6, C.

Tobacco stoppers were usually made in brass, in which metal they are to-day largely made to supply the spurious antique market. The most primitive examples have the press barely a quarter of an inch in diameter, owing to the smallness of the early pipe-bowls. Among the uncommon forms are those which are made in conjunction with a finger ring, and those which have the handle made of a coin. These types, together with the more common forms, are illustrated in fig. 7.

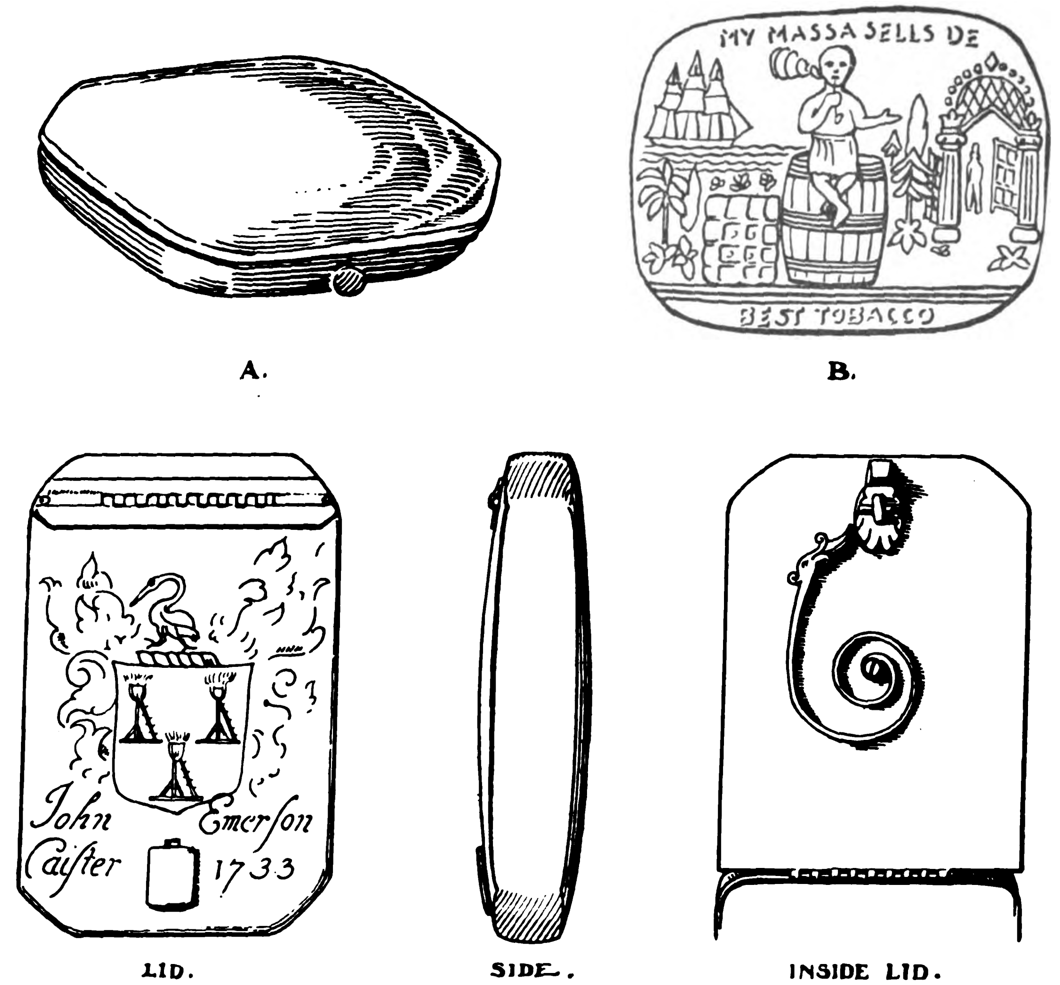


FIG. 6.

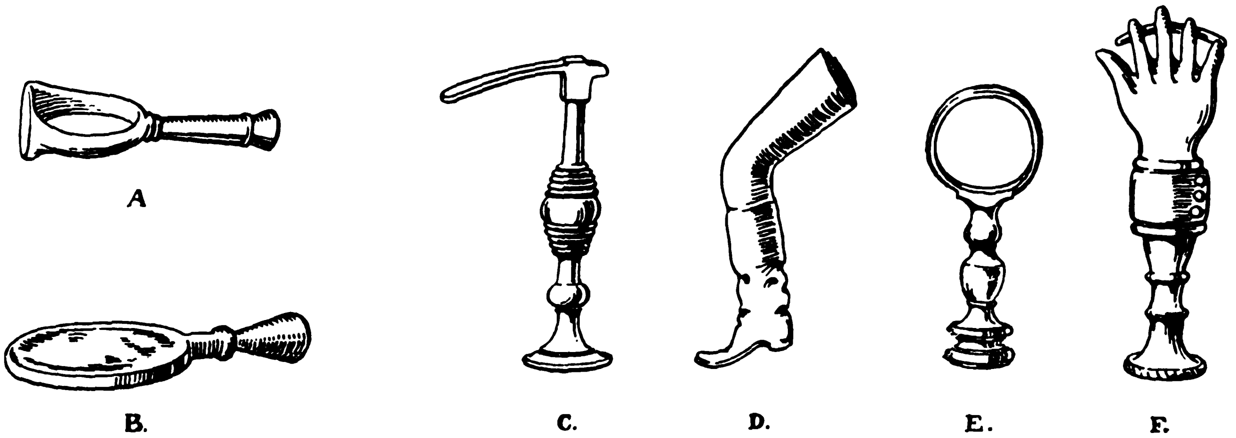


FIG. 7.

Among the articles of tin ware connected with the use of tobacco are the pipe cases shown in fig. 8, which accommodate the short clay pipes and the spill holder shown in fig. 9.

Spills were usually of wood, and a machine for making them was brought out by the Preston Juniors, probably early in the nineteenth century, which is illustrated in fig. 10. It is formed of a heavy piece of iron about 8 inches in length, with a channel in the top and a steel blade fixed and adjusted in a similar manner to a moulding plane. To make a spill, a flat piece of wood, preferably soft pine, is driven by the hand along the channel towards the blade, which cuts off a shaving in the form of a spiral.

Another article which has been ousted from general use owing to the retailing of cut tobacco is the tobacco cutter, which is illustrated in fig. 11. This implement has the cutting blade attached to a wooden slab about 6 inches square, the end of the blade being hinged to an upright pin, which swivels and allows the blade to be moved up or down, and also to travel in a quarter-circle over the cutting surface.

The foregoing articles constituted the smoker's paraphernalia until the advent of the cherry wood and briar pipes and the tobacco pouch rendered them obsolete and caused them to be thrust aside as valueless until comparatively recently, when quite a number have been carefully collected, and have formed the nuclei of some very interesting collections. And a pair of genuine tobacco tongs is one of the most keenly-sought-after relics of bygone domestic metal work.

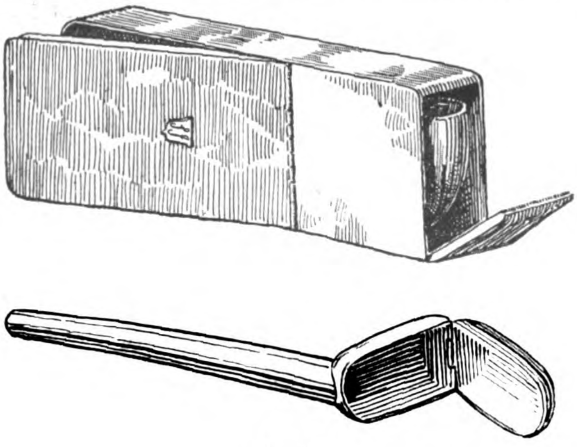


Fig. 8.

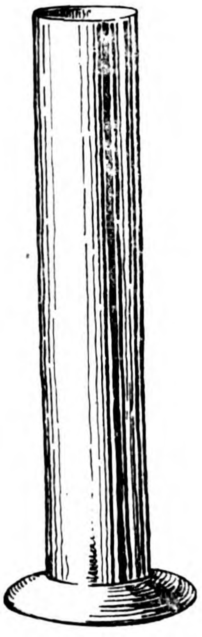


Fig. 9.

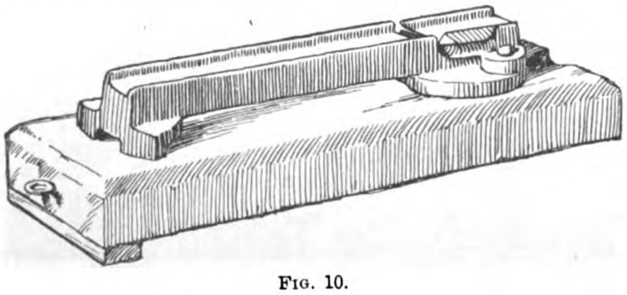


Fig. 10.

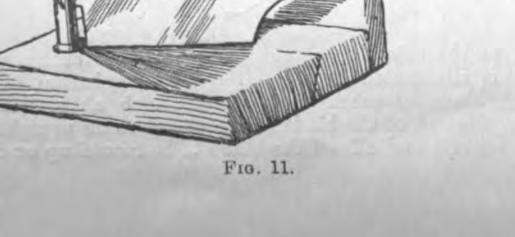


Fig. 11.

DESCRIPTION OF ILLUSTRATIONS.

Fig. 1.—A.—Steel pipe tongs dated 1677 in the collection of Mr. L. G. Russell-Davies in the Brighton Museum.
B.—Steel pipe tongs dated 1717 in the Brighton Museum.
C.—Steel pipe tongs in the Guildhall Museum.
Fig. 2.—Brass pipe tongs in the Guildhall Museum.
Fig. 3.—A.—Pipe kiln in the collection of Mr. Georges, Lewes.
B.—Pipe kiln in the collection of Mr. L. G. Russell-Davies in the Brighton Museum.
Fig. 4.—Pipe rack and tray in the Victoria and Albert Museum, South Kensington.
Fig. 5.—Lead tobacco boxes in the collection of Mr. Ch. M. Escaré.
Fig. 6.—A.—Pocket tobacco box of hammered iron in the writer's collection.
B.—Pocket tobacco box with stamped decoration on lid in the collection of Mr. Ch. M. Escaré.
C.—Pocket tobacco box dated 1733 in the possession of Mr. George Chapman.
Fig. 7.—A. and B.—Brass tobacco stoppers in the Guildhall Museum.
M. Escaré.
C.—Brass tobacco stopper in the collection of Mr. Ch.
D., E., and F.—Brass tobacco stoppers in the collection of Miss M. E. Williams.
Fig. 8.—Pipe cases of tinned iron in the writer's collection.
Fig. 9.—Spill making machine in the writer's collection.
Fig. 10.—Spill holder in the collection of Mr. L. G. Russell-Davies in the Brighton Museum.
Fig. 11.—Tobacco cutter in the collection of Mr. L. G. Russell-Davies in the Brighton Museum.

THE TECHNIQUE OF GLASS PAINTING IN MEDIÆVAL AND RENAISSANCE TIMES.*

By John A. Knowles.

(*Concluded from last week.*)

We now come to the second part of our subject, having determined as nearly as possible of what the mediæval glass-painting colour was composed, and will consider for a few minutes the processes employed in painting it on the glass, and the way the ancient artists overcame the many difficulties of manipulation. I believe there are none of the arts of painting which present so many technical difficulties as painting on glass does, and this is partly on account of the nature of the material or ground, and partly occasioned by the peculiarities of the pigment. To understand these, we will describe the main outlines of the process. The brown enamel, or "colour," as glass-painters call it, is ground up either with water or turpentine, and a sufficient quantity of binder having been added, either gum or fat-oil, or some similar essential oil or varnish, to make it both adhere to the glass and flow properly from the brush, the main outlines are painted on the glass, and these having dried, a wash of enamel, ground as before in water, to which just sufficient gum has been added to enable it to be moved by gradual strokes of a fairly stiff hog-hair brush, is passed quickly over the whole piece of glass by the aid of a broad flat brush, and this coat is then distributed evenly by being lightly dabbed all over with the ends of a flat-ended brush of large size, to give an even coating and eradicate brush marks, or gently smoothed out with a flat brush made for the purpose of badger hair. When this second coat, which is thin and semi-transparent and gives the half-tones, has in turn dried, the lights in the painting are obtained by removing it gradually where wanted with a stiff dry brush, without any pigment, and the sharpest lights are obtained by removing strokes with a quill or stick sharpened to a point for the purpose. These are the main lines of the process put as plainly as I can, and stated in as few words as I am able to put it; but I must here remark that nowhere outside our schools of art, and such places where they profess to teach glass-painting, is it done as simply as this, there being many variations and elaborations introduced by the different studios, not so much to overcome some of the technical difficulties I shall presently point out as to attain a more highly developed technique on the glass, and partly to obtain various effects and bring out the qualities and feeling of design and draughtsmanship which each studio is endeavouring to carry out, each one having its particular point of view or manner and not deviating from it. The first difficulty arises from the slippery nature of the glass surface to which the outlines are applied, which renders it impossible for the colour to obtain any physical hold upon the surface of the glass, as in water-colour painting upon paper, where the pigment is not only held on whilst succeeding washes of colour are washed over it, by the rough surface of the paper, but is partially absorbed into the paper itself, and is not, therefore, liable to be completely washed off except under the hand of a very inexperienced artist. But in glass painting, if the outlines have been mixed with gum only, when the wash or matt is applied all over them and they are then subjected to the friction of the hairs of the brush to smooth out and distribute this second coat, the fine lines are at once completely removed and the thicker ones so blurred, through the water in the second coat dissolving the gum in the traced lines, that they are rendered shapeless. I do not mean that to pass a water matt over a water-traced line is impossible, as the glass-painters in many studios do so regularly, and never wash up a line, even the finest; but it is a matter of great delicacy, and can only be attained by years of practice. To overcome this difficulty various methods have been introduced, the chief of which is either to fire the outline on in the kiln or else mix the outline colour ground in turpentine with an essential oil, so working with alternate coats of oil and water-colour; the oil cannot therefore be removed by the water-colour coat or the water by the oil. So much for the rough outline of modern methods of painting, and now to get back to our mediæval artists and their work.

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* Extracts from a Paper read before the Royal Society of Arts.

We have seen they had four methods of procedure at their disposal: they could either first fire the traced lines on and then shade the work without fear of losing the drawing, or they could mix the outline with water and paint over with a colour mixed in oil; or they could reverse the process and pass over the traced line which had been ground in oil with a matt of water-colour (the more likely procedure of the two), or else, if very expert, they could put on both coats, outline and matt, in water-colour. To take the last question first, was the mediæval glass painting done entirely in water? To arrive at a conclusion as to how a piece of artistic work, such as an oil-painting, for instance, was produced, you are more likely to see the method from an unfinished piece rather than from a completed one, and from the work of an inferior artist rather than of a highly trained one, and we have documentary evidence in the St. Stephen's Chapel Account Rolls, if we cannot rely on the ordinary grounds of reason, that there were inferior artists, men who carried out the less important parts of the painting of windows, as well as apprentices, in those days, just as there are to-day; yet not in the most obscure corners of a window nor the most unimportant pieces of tracery work do you ever see a traced line over which a matt has been washed that has moved or blurred in the slightest degree. One would surely think that somewhere a fine line would have moved, perhaps under the inexperienced hand of a learner; but no, they are always clear and crisp. Were they, then, fired on? If so, being indelibly fixed, they cannot be removed with the stick or quill point to obtain fine lines in hair, &c., when the shading of the piece is being done, and this is thought to be a great drawback amongst glass-painters, as the freedom with which lights can be flicked off, through traced lines or across them, according to the will of the artist, is one of the charms of glass-painting. Besides which the process necessitates the glass being fired twice—once for the traced lines and once for the shading colour; and when we remember the enormous amount of painted glass produced in mediæval times, certainly more than is being done to-day, and the primitive methods available in those days for firing, this would entail considerable work. The evidence of actual glass-paintings from the earliest times till almost our own day is, however, emphatic that the traced line never was fired on first. And I am able to make this statement with more assurance, having had an opportunity of closely examining work both mediæval and Renaissance, and also a wonderful collection of clever Swiss work, at close range, whilst it was being restored in the studio, and I have prepared slides from portions which serve to illustrate the methods of painting.

I am unable to show you a photograph of any work earlier than the fourteenth century which authenticates this statement, as corrosion and so forth would obscure the points I should like to draw your attention to in the photograph; but of various pieces of glass of early date I have examined none gave evidence of having been fired before being shaded.

The first specimen I can bring before you is a piece of fourteenth-century glass, the head of a donor, from St. Denys Church, Yorks. You will notice the head has been outlined and then a tone placed under the eyes, and, as was usual at that period, entirely over the hair, so as to give it a brown tone. From A to B a scratch, evidently caused through careless handling before firing, has removed the second tone, and also passed right through the traced lines. This could not have occurred if the traced lines had been fired on, proving that they were not.

Coming to Renaissance times, in the panel in Normanton Church, Yorks, though the photo is not on a large enough scale to show it, there are many places where the stick-lights have been taken with the utmost facility through traced lines and three succeeding coats of matt. The traced line, then, was not fired on, nor was the glass painted entirely in gum colour, so unless the old glass-painters understood some method which, if not unknown to-day, at least has been allowed to fall into disuse, the glass must have been painted either by mixing the outline colour with oil and passing a water matt over it, or reversing the process and tracing in water and shading in oil. But there are many reasons why it is most unlikely that either of these methods was adopted. In the first place, if the traced lines have been done in oil—*i.e.* turpentine and fat oil, or similar unctuous vehicle—and dried, they adhere fairly firmly to the glass, and offer some resistance to the free passage of a quill through them for taking out lights; yet on mediæval and Renaissance glass paintings the outlines have yielded at once to the freest quill work, and the examples of scratches which have accidentally occurred before firing, which we have previously noticed, show that the traced lines were only sufficiently tightly held to the glass to allow of the after manipulation. On the other hand, if the outlines had been put in with gum colour and the shading in oil, it would have been necessary to have had a slight matt, as it is called, or thin smooth coat of water-colour all over each piece, in order that the shading of folds of drapery, &c., could be successfully carried out, as the smooth surface of the glass does not allow of oil colour being manipulated on bare glass, but a ground becomes necessary in order partially to absorb the oil in the colour and give a ground for working on, yet I have never come across a case in mediæval work where this method has been adopted.

Coming to later times, I am able to show you a collection of Swiss panes, dating from early sixteenth to the end of the seventeenth centuries, and larger photos of details. None of this glass has been sent into the kiln, though it has as many as three coats of matt and traced lines, and the stick-lights pass freely through many coats right down to the bare glass; and, lastly, coming to Peckitt's time (1731-95), you will see that round the head of this cherub a shadow has been painted with another upon that, and a matt over all, through which rays of light have been taken with a brush, showing nothing was fired on at the time. The head has certainly been done in oil. Yet, without labouring the point, there is plenty of documentary evidence, from the time of Theophilus, in the various treatises on glass-painting that exist, to show that oil technique was not adopted till it became necessary in painting in coloured enamels, when the shading of the piece having been carried as far as possible in water, the enamels were applied, very often ground in oil. Theophilus does not say anything about oil. After describing how the glass should be traced, with the enamel ground up with wine or urine, and the first shadows washed on and then modelled, by being brushed up into the darker parts of the drapery, so that the tone will begin faint and end dark, he goes on to say: "When you have made the first shadows in draperies and they are dry, cover the rest of the glass with a light colour which should not be so deep as the second tint of the shadow nor so light as the third, but a medium between the two. This being dry, make with the handle of the brush, near the shadows which you first made, fine strokes in every part, so as to leave between these strokes and the first shadows fine strokes of the light colour." This is a very clear account of a well-developed technique of traced lines and two coats of shading colour, by which four separate tones are obtained, besides the solid blacks of the traced lines and the clear glass of the stick-lights, and this without having recourse to oil, either for traced lines or shading.

Eraclius tells us to grind the glass colour with gum, and in 1351 we find from the exchequer accounts of St. George's Chapel, Windsor, that no less than 1 lb. of gum-arabic was bought from John Madfray for painting the glass windows, and in the following year a further quantity of gum-arabic was bought. These windows, then, were certainly painted in water technique; nor is there any mention of oil in the manuscript entitled "Segreti Diversi," called the Marciana MS. of the beginning of the sixteenth century, which directs that the glass colour should be ground on a porphyry stone, "like any other colour," and that you should then "distemper the mixture with gum-water, and draw your subject on the glass with this, letting it dry in the shade."

William of Marseilles (16th century) mixed colours with gum, according to Vasari, but his biographer makes no mention of oil; and Walter Gidde (1615) only instructs the use of gum-water. Pierre Le Brun (1635) gives a good account of glass-painting technique in his time, but says nothing of oil; Walpole (*c.* 1770), in his "Pantologia," makes no mention of it either, nor do any of the encyclopædias and similar works published at that period, such as "The Laboratory or School of Arts." If, therefore, by working backwards from present-day methods we are unable to account for the effects produced, we shall have to come to the conclusion that the mediæval craftsmen knew of some method of work which has since become lost to us, and search around amongst the old recipes distributed through the various manuscripts and books which treat of glass-painting to see if we can recover their method of work.

This consisted, as we have seen, in being able to put on traced lines as fine as a hair, and, in Renaissance times at any rate, coat after coat of water colour, to build up the lights and shades, "badgering" or "stippling" each one out smoothly without fear of removing anything beneath, and finish the work with all the depth of tone wanted at one fire. It is obvious that if the colour could be ground in gum with the addition of some chemical which would render the gum, when once dry, insoluble, so that it could not be again dissolved and removed from the glass, this end would be attained. Now, though all the recipes do not mention the addition of gum to the glass colour, Theophilus being a notable instance in this connection, there can be no doubt that it was regularly used, as the very nature of the process depends upon the gum to bind the colour to the glass to just the right extent, neither too strongly nor insufficiently, so that the pigment can be removed without difficulty, and at the same time gradually. Many kinds of gum are indicated in mediæval MSS. for different arts of painting, such as panel, illuminating, &c.; and in connection with these Theophilus mentions cherry-tree gum, white of egg, fish-glue, and gum-arabic. In a manuscript of the fifteenth century in the Ormsby-Gore collection there is a typical recipe for preparing white-of-egg gum, which is similar to many more distributed throughout the different treatises in manuscript on mediæval painting: "Take the whytes of xx egges, and make clere gleyre of heme, and thane take a bledder of a beste that is newe slayne, and put therein thy gleyre and knyt faste the bleddere, and honge hit in the sone or overe the fyre, in the smoke xl days, and thane hast thou good gume." This process would evaporate the excess of water from the egg-whites and leave the albumen in the solid state. Now, all these materials—gum-arabic, white of egg, and fish-glue—are nitrogenous compounds, and susceptible of coagulation; hence their property of being rendered insoluble, and converted into a substance which is virtually leather.

There are many ways in which this coagulation may be effected. In the case of white of egg, if, before it is properly dry, a colour which has been mixed with it and spread upon a surface for painting on, be heated to a temperature of 70° C., it cannot be again dissolved in water, having been converted into the insoluble form. This change has been taken advantage of in tempera painting, where the powdered pigments ground up in yolk of egg can be made to cohere and also adhere to the ground, and after being exposed to the fire or the heat of the sun are rendered insoluble and irremovable by succeeding coats of pigment. The same result can be produced by the addition to the pigment ground up with gum of some substance which, by its tanning action, converts the gum into the coagulate and insoluble form. Many compounds can be used to produce this effect, but in stained-glass work, where the adhesive or binder most commonly used is gum-arabic, or senegal, the handiest is vinegar; but, under favourable circumstances, urine, which has an acid reaction—and until about 1750 was the chief source from which the phosphates of soda and ammonia were obtained, and within living memory was largely used in Bradford and the West Riding of Yorkshire in dyeing woollen stuffs—will produce the same effect. There is ample documentary evidence to show that, from the earliest times to almost the present day, such a process of rendering the colour ground with gum, with which the outlines and first coats of shading colour were painted on the glass, insoluble, so that the succeeding coats could not remove them, was well understood and commonly used, and in many other of the arts, besides that of glass-painting, the property which nitrogenous compounds have of being coagulated and so hardened as to become as hard as leather was made use of.

Theophilus put three coats of colour on his glass, and instructed the glass-painter to grind the ingredients we considered before, copper and iron oxide and flux, "together on the same stone very carefully with wine or urine." The wine, if it were an acid rather than a sweet wine, or "sac" as it was called, would produce the same result, as wine, in common with all solutions containing alcohol, when exposed to the air gradually becomes oxidised or turned sour, being converted into acetic acid or vinegar. And this was the general method of making vinegar before the modern process was introduced, where it is obtained by the destructive distillation of wood. The following recipe from the thirteenth-century MS. of Petrus de S. Audemar shows how well the mediæval craftsmen understood and made use of this in the different arts: "How to make Vinegar.—Take good wine or wine as sour as you can get it, and put it into a jar not entirely closed, in order that it may feel the changes of the air, which cause it to turn sour, and let it acidify by exposing it to the sun." Theophilus then instructed that the enamel should be ground on the slab with wine or urine, in order that, when painted on the glass, the acid would convert the gum with which the enamel would be mixed into the coagulate or insoluble form, so that the outlines would not be washed up by succeeding coats of water-colour.

Pierre Le Brun, who wrote in 1635, gives a very complete account of glass painting. He says: "To make good black for drawing the outlines on the pieces of glass, you must take equal parts of scales of iron and rocaille, and grind them on a copper plate for five hours with a little urine. The glass being dry, you must have a pencil with a brush at each end, which is used for washing and shading the figures. Observe that the under-coat of colours must be dry before laying on more colour. The secret of this kind of painting consists in making the black properly. It is said the addition of a little urine does everything when it is neither in too great nor too small quantity."

Felibien, in his "Principes de l'Architecture" (third edition, Paris, 1699), says: "The outlines are to be painted with the black enamel mixed with gum, and then allowed to dry for two days. A wash is then to be applied to them, made of six or seven drops of gum-arabic mixed with six or seven drops of urine, and as much black as necessary . . . after which the work is to be permitted to rest for two more days."

Walpole gives directions which evidently date back long before his time, and which have been copied into many books and encyclopædias, so that it is difficult to trace the origin of the source of the information given. He tells us that the glass painters "copy or transfer this design (*i.e.* the cartoon) upon the glass with the black colour diluted with gum-water. . . . When these strokes (*i.e.* the traced lines) are well dried, which will happen in about two days, the work being only in black and white, they give a slight wash over with urine, gum-arabic, and a little black, and repeat it several times, according as the shades are required to be heightened; with this precaution, never to apply a new wash till the former is sufficiently dried." The "Laboratory or School of Arts," 1755, gives several recipes for glass colours, and directs that the operator shall "grind them with good vinegar to an impalpable powder," and "dilute all colours with gum-water"; and again instructs that some colours shall be ground "first with vinegar very fine and then with brandy."

In the painted glass which remains to us to-day we can see the development of the technique onwards; from the bold traced lines of Theophilus' time, through the Perpendicular period, where the lines, fine as a hair, in the portraits of donors and saints have remained clear and sharp whilst the artist worked over them with his shading colour, down to those masterpieces of technique in Swiss panes and cabinet glass-paintings of the seventeenth century, the admiration and envy of all good craftsmen, so skilful are they, where, in minute space, the artist, having all the resources of a highly developed technique at his command, and after building up the shadows with three or more shading coats to the point where they might almost appear heavy, whips out lights with his needle through traced lines and matts innumerable and gives his work life.

There is very little more to say. If our modern technique differs from the ancient, the difference is one of method and not of aim, and in Art there is no such thing as only one way—all ways are right if rightly used; and the artist who, striving to do something worthy—and whilst studying as closely as he can the achievements in design and technique of the past—is not at the same time neglectful of the added power which the resources of modern science give him, cannot go far wrong.

WESTMINSTER HALL ROOF.

A VALUABLE report (Cd. 7436) has been prepared by Mr. F. Baines, M.V.O., one of the principal architects in the Office of Works, on the condition of the roof timbers of Westminster Hall, together with suggestions for maintaining the stability of the roof.

The report opens with a summary of the historical evidence relating to the building as far as it has been examined. This has been written by the Chief Inspector of Ancient Monuments. Of the hall begun in 1097 and finished in 1099 the walls still remain, though much refaced and altered. Just three hundred years later John Godmeston, clerk, was appointed to cause the Great Hall in the Palace of Westminster to be repaired. A contract still exists, dated March 18, 1395, for the heightening of the side walls of the hall and the insertion of corbels, &c., in preparation for the new roof. The oak timber for this latter came partly from the King's Park at Odiham, the Abbot of St. Albans' wood at Bernan, and a wood by Kingston-on-Thames. By 1400 the work was practically complete.

The first repair of Richard II.'s roof of which a detailed account exists took place in 1663. The lead was partly taken off and recast and partly made good in position. Two hammer-beams and two collar-beams were mended and pieced, and three new purlins put in, with iron bolts and stirrups to them; the rafters were firred up where necessary to take the lead, and a good part of the lathing renewed. The gutters were also repaired and in part new made. Various other repairs were executed during subsequent years. At what date the lead of the roof was replaced by slates is not clear, but a repair of the slating with Westmoreland slates is mentioned in 1782, and the change seems to have been made between 1760 and that date. In 1819 the Treasury approved a report by Sir John Soane recommending repairs estimated to cost £20,000. In 1850 Sir Charles Barry prepared a scheme for strengthening the hall roof with iron ties, which was carried out, and nothing more seems to have been done to the roof until 1885, when Mr. J. L. Pearson removed the twelve dormers on the west side. The dormers on the east side were removed in 1889, and in 1891 the ironwork of the roof was painted. In 1896 Sir John Taylor reported that the roof was in fair condition, but recommended the substitution of lead for the slate roofing on the score of lightness. At this time, and for some years afterwards, the roof was dusted yearly by two men, formerly sailors, who called attention to any defects which came under their notice, and certain minor repairs were done from time to time.

When the care of Westminster Hall was assumed by the Ancient Monuments Branch in March 1912, it was decided, in view of the lack of information as to its general condition and safety, that approval should be sought for spending the whole yearly provision upon a light scaffolding erected simply for the purpose of examining the timbers. This examination proved not only necessary, in spite of the general opinion that the roof was satisfactory and in a safe condition, but unless it had been actually carried out and the real defects ascertained there was a serious possibility of the occurrence of a fall of certainly four out of the thirteen trusses in the hall.

Eight trusses and six bays only out of thirteen trusses and twelve bays were scaffolded for the full height and examined.

These were scaffolded in two sections for the full height of the roof, a distance of over 90 feet, and as previous examinations were made without the aid of any light, arrangements were made in this case to carry electric wires in steel tubing up the scaffolding with flexible lead-covered extension wires for hand lamps for use on the various stages of the scaffolding. Precautions were taken against every danger of fire, and patent extincteurs were provided on each stage should any accident occur.

Had naked hand lights been used the gravest danger of an outbreak of fire would have occurred, as great quantities of dust from the disintegrated timbers exist in all portions of the roof.

The total cost of the scaffolding, if purchased outright, would have amounted to some £1,275, but by an arrangement with one of the foremost firms in London this vast bulk of scaffolding was hired for £509. To this must be added the sum of £78, which represents the cost of engineering services in the provision of electric light, extincteurs, &c. The cost of erection and labour in supervision while the examination was being carried out was £539. In addition to this, the most dangerous of the hammer-beams have been shored up by erecting a dead shore from the concrete beneath the present floor slabs of the hall, and wedging up under the end of the hammer-beam to secure it from collapse. The total amount spent in labour, supervision, cost of scaffolding, cost of providing electric wiring in steel tubing, &c., during the financial year will be roughly £900. It should be noted that this scaffolding is not of the slightest use as a method of centering and shoring these great trusses, as even a load of ten tons on the topmost stage of the scaffolding would possibly cause it to collapse. The cost of erecting a scaffold capable of sustaining the load of the trusses, which amounts to roughly seventy tons per truss and bay without calculations for wind pressure, would have been absolutely prohibitive for eight trusses and six bays, and it was therefore not attempted.

Causes of the Defective Condition of the Roof.

The various forms of decay and degeneration which occur in the timbers of the roof are as follows: (*a*) Dry rot, (*b*) incipient surface decay, (*c*) decay due to the attacks of the *Xestobium tessellatum*, (*d*) decay due to the attacks of a smaller Anobiid beetle, (*e*) the ravages of the goat moth.

With regard to (*a*), the condition of the roof in its present state is in no way due initially to the effect of dry rot. Dry rot has occurred in a few places where the wood has so deteriorated that it has been compressed into the forms of the members adjacent to it, but in no case, except perhaps in the instance of the wall posts, has dry rot been of sufficient extent to threaten the safety of any portion of the roof. Undoubtedly the roof in its present condition is in great need of ventilation, and unless this is considerably increased there will always be the danger of dry rot in the new timbers which it will be necessary to insert. There are, however, methods of providing against this.

(*b*) Incipient surface decay is of a very curious nature, and has resulted in the wonderful golden-brown tone of colouring of all the original timbers, which is the most distinctive feature of the roof. This colour is apparent even from below, but from the scaffold it is seen to be of a most extraordinary richness, and through it the hard grain of the wood clearly shows.

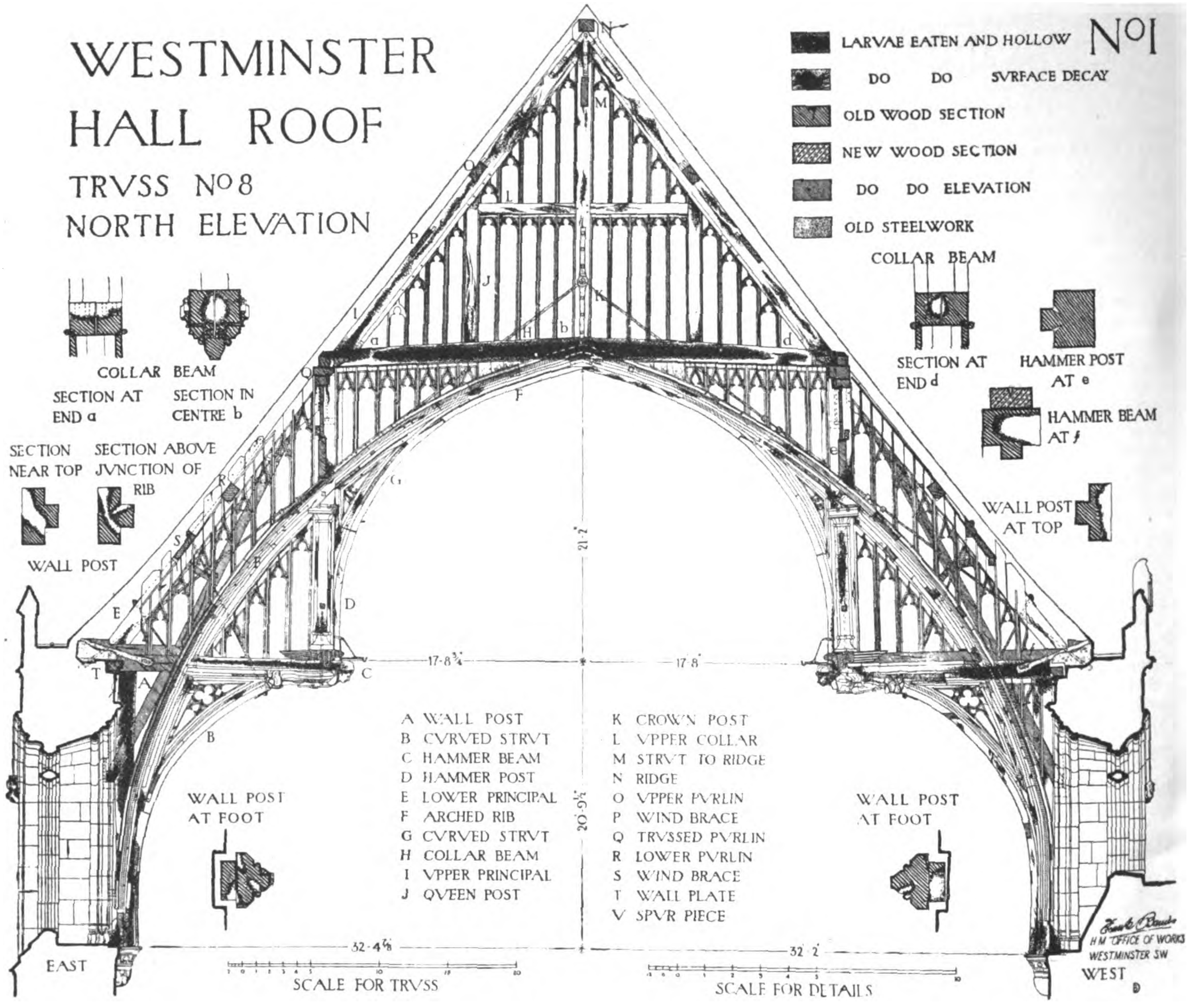
The fungoid growth which seems to have produced this colour is not apparently of any importance in relation to the question of the preservation of the timber, as in no case has it been found to extend more than ½ inch into the surface of the wood. The colour which it has produced, however, is so distinctive that every effort should be made to retain it, if possible, in any suggested works of preservation. In no other oak roof has this colour been apparent; and that it should be retained under the conditions of our modern London atmosphere is sufficiently extraordinary to justify an attempt to preserve it.

(*c*) The main cause of the decay, and of the present grave structural instability of the roof, is due to the ravages of the insect which has been identified by Dr. Gahan and others as one of the Anobiid beetles, *Xestobium tessellatum*. Like all beetles, it undergoes a complete metamorphosis—a larval stage, in which it is a white grub, slightly curved, known as "wood-worm"; a chrysalis, or pupal stage; and then the perfect beetle. It is in the larval stage, however, that all the damage is done to the wood. This stage is indeterminate, since the life-history of the insect has apparently not been completely worked out. This particular species is rarely found in any wood other than oak, and it would appear that a despairing attitude is usually adopted by those who know its habits when it is found firmly established in an oak structure. Live larvæ have been repeatedly found in small numbers during the period of examination of the roof, and numberless dead beetles have also been found on the upper surfaces of the timbers, and on the window sills, &c., of the hall, when they were being brushed down.

It would appear that one of the most effective ways of dealing with insects of this class in timber is by the total impregnation of the timber through the whole of its section with some approved solution under pressure. It is obvious that if an attempt is made, as indeed it is hoped it will be, to preserve intact every vestige of the roof in its present position, as far as possible, impregnation of the original timbers as they stand is utterly impossible. The difficulties of applying any remedies to the roof timbers are almost insuperable, while the enormous areas and extent of the surfaces to be treated would render any operation one of great cost and trouble. The difficulties which have arisen over the question of obtaining a liquid satisfactory are considerable, and the problem is at present unsolved. Indications exist, however, as the result of a series of experiments conducted by Dr. Dobbie and Dr. Westergaard, to show that two liquids out of a great number examined present very hopeful features as to their applicability and usefulness as insecticides under the difficult conditions imposed by the problem. Any liquid selected must (1) penetrate well into the timber by its mere application to the external surfaces, (2) not be inflammable, (3) not smell offensively, (4) not discolour the wood, (5) not be a volatile poison, (6) be a perfect insecticide, (7) be a good timber preservative. These conditions would not appear to be easily met.

[The report then proceeds to review briefly some eighteen liquids, &c., which are possible as a form of treatment of the problem.]

(*d*) With regard to the decay due to the ravages of a beetle which has not been identified, but which is smaller than the *Xestobium tessellatum*, it would appear from an examination that these are not of serious moment. The signs of its action are seen throughout the roof in conjunction with the *Xestobium tessellatum*, but in almost all cases the ravages of the latter constitute the serious problem.


WESTMINSTER
HALL ROOF
TRVSS Nº 8
NORTH ELEVATION
Nº I
▇ LARVAE EATEN AND HOLLOW
▇ DO DO SVRFACE DECAY
▨ OLD WOOD SECTION
▩ NEW WOOD SECTION
▇ DO DO ELEVATION
▒ OLD STEELWORK
COLLAR BEAM
SECTION AT END a
SECTION IN CENTRE b
SECTION NEAR TOP
SECTION ABOVE JVNCTION OF RIB
WALL POST
COLLAR BEAM
SECTION AT END d
HAMMER POST AT e
HAMMER BEAM AT f
WALL POST AT TOP
WALL POST AT FOOT
WALL POST AT FOOT
A WALL POST
B CVRVED STRVT
C HAMMER BEAM
D HAMMER POST
E LOWER PRINCIPAL
F ARCHED RIB
G CVRVED STRVT
H COLLAR BEAM
I VPPER PRINCIPAL
J QVEEN POST
K CROWN POST
L VPPER COLLAR
M STRVT TO RIDGE
N RIDGE
O VPPER PVRLIN
P WIND BRACE
Q TRVSSED PVRLIN
R LOWER PVRLIN
S WIND BRACE
T WALL PLATE
V SPVR PIECE
17-8¾
17-8
21-2
20-9½
32-4⅝
32-2
SCALE FOR TRVSS
SCALE FOR DETAILS
EAST
WEST
Frank Baines
H M OFFICE OF WORKS
WESTMINSTER SW

(*e*) Where the tunnellings of the goat moth have been found they have not been, in any case, of sufficient importance to cause any grave structural defects. They mostly occur in the common rafters of the upper section of the roof, and in nearly all cases are in the sapwood, and not in the hard portions of the timbers.

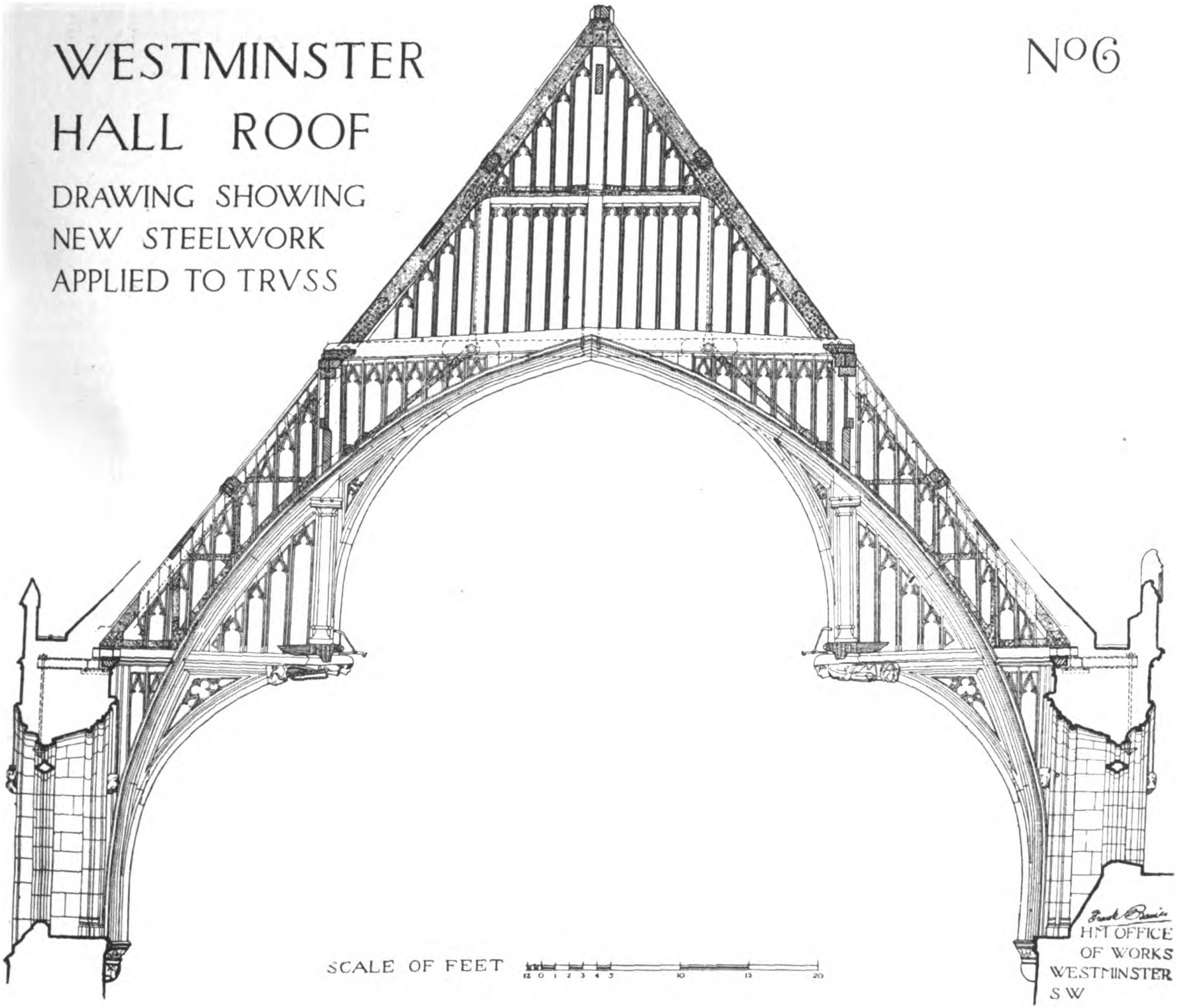
Other defects which occur in the roof, and which are particularly commented upon in the detailed schedules, are large dead knots, shakes, and unseasoned timbers.

With regard to the first, this defect has in many instances constituted a serious menace to the structural safety of even some of the principal timbers. The most serious result of the large dead knots, however, is the fact that the beetle of the *Xestobium tessellatum* has used these places as positions for laying its eggs. Almost universally through the roof it will be found that the action of the *Xestobium tessellatum* occurs round these dead knots, and in many cases they have provided the points of entrance for the insect, resulting in the complete hollowing out of the whole of the timber. It will be obvious that in the future piecing up with new oak great care must be taken to prevent the use of oak in which large dead knots occur.

Many shakes have arisen from the overstraining of the original timbers. This has particularly occurred in the case of the purlins, which appear to be the weakest part of the design of the original structure. So serious are some of these shakes that the action of the purlins is rendered completely nugatory. In other cases, such as in some of the upper principals, large shakes run right down the timbers, due to the general deflection and distortion of the roof. This has resulted in an unequal bearing at the joints of these main timbers. Further serious cases of shakes have occurred in the whole series of hammer-posts examined. Only a very small proportion of the shakes in the roof are due to other than structural causes, and although it is doubtful whether the original timbers were thoroughly seasoned, they must have been cut for some years before they were used, otherwise the green wood would have certainly opened in extensive and numerous shakes under the stresses which it was immediately called upon to carry. The serious feature, however, of the shakes which have occurred is that they provide a starting point for the action of the *Xestobium tessellatum*, and it is obvious from detailed examination that much of the decay has commenced from the points where these shakes have been open for a great period of time.

Hammer-beams.

On the safety of these members depends the structural integrity of the roof. In almost all cases the hammer-beams have dropped or tilted at the inner or free end—*i.e.*, the end farthest from the wall. This movement is due in all cases to the superimposed weight of the hammer-post above it, which in turn carries the main collar-beam and the whole of the upper portion of the roof. The hammer-beam, being



a cantilever, is a highly dangerous member should it perish in any portion of its length, but in three cases the hammer-beams have been actually cut across at a distance of some feet from the wall, and pieced up in modern oak, so that, in consequence, they are completely inoperative as cantilever supports. One of these hammer-beams, which has a calculated reaction of fifteen tons at the foot of the hammer-post (without wind pressure), could actually be shaken by the hand.

In almost every case the hammer-beams are badly decayed, particularly at the end where they join with the wall and the foot of the lower principal. Some of the hammer-beams have large cavities in them at this point, which reduce them to the merest shell at a position where the greatest stress occurs. Many of them had been patched up by inserting pieces of oak, in some cases actually in the cavities, and in others on the top of the hammer-beam, in order to give at least some effective support to the foot of the decayed lower principal rafter. This piecing up has been done in various ways, but in every case cast-iron shoes have been inserted to receive the defective wall-ends of the hammer-beams, which would sometimes appear to have been actually non-existent at the time of the work.

In every case where the hammer-beams have been attacked by the larvæ it would appear that the centres have suffered most; though signs of these attacks occur on the outer surfaces of the hammer-beams, the centre of the timbers has been attacked first, until large cavities have developed. Into and over these cavities modern pieces of oak have been wedged, evidently from the back or the wall side, and in some cases the foot of the principal has been cut so that a modern piece could be slid in under it on to the top of the hammer-beam. Frequently this modern wood has again been attacked, showing that the destructive action of the larvæ is continuing at the present time, as, indeed, can be proved by the discovery of the insects at work, many of which have been found and used for the purpose of experiment.

Principal Rafters.

These members are in two sections, the great length of the roof slope necessitating this. The lower principal runs between the wall end of the hammer-beam and the top of the hammer-post, into which it is double-tenoned, forming the third side of a triangle with these members. The weight of the lower principal rafter, coming on to the back or wall end of the hammer-beam, and so on to the wall, is designed to counterbalance the weight of the hammer-post and its superimposed loads at the free end of the hammer-beam. The upper section of the principal rafters rises from the end of the main collar-beam to the ridge of the roof.

Almost invariably the feet of the principal rafters are found to be worm-eaten, in many cases to a considerable extent. In some cases no support whatever is given to the timber and its superimposed load, owing to the feet of the members being reduced to mere shells by the action of the larvæ. Some of the principal rafters would appear to have shrunk, and the mortices in the supporting members are exposed. In most of such cases the decay would appear to have started at this point, the cavities developing at the mortice holes, and running into both members where they join. This occurs also at the junction of the purlins with the principal rafters, where the mortices have been exposed by the sagging of the purlins and the decaying of the tenons. Decayed heartwood has been found in a few cases on the side of the timbers. This can be torn off by the hand comparatively easily.

Main Collar-beams.

The decay in many of the collar-beams, where it results in large cavities, is one of the most serious structural defects of the roof, for not only are the collar-beams affected, but all the surrounding timbers where they join with them are seriously weakened, particularly the upper principal rafters, as previously mentioned. These appear to have been attacked by the larvæ at the same time as the collar-beams, the beetle probably laying its eggs in the crevices of the mortices where the principal rafters have shrunk or twisted.

Hammer-posts.

These members, standing vertically upon the free ends of the hammer-beams, are, owing to the weight they have to carry, the cause of the dropping of these beams. They are the largest sectional timbers of any of the members of the roof; in height they are about 22 feet, and 2 feet in width, increasing to 3 feet and sometimes even to 3 feet 9 inches at one point. They weigh approximately 3½ tons, which will perhaps give some idea of the scale and size of the trees from which they were originally cut.

With regard to the actual decay occasioned by the attacks of the larvæ, the hammer-posts do not appear to have suffered so badly as have many of the other members. The chief cause of the defects appears to be large dead knots where the larvæ have worked.

Great Curved Rib.

This member would appear to give the most important constructional support afforded by any of the original members of the old roof at the present time. It does, in effect, carry a relatively enormous additional stress which it was never intended to carry. This is largely due to the defects and decay which have developed in other members of the roof, such as the hammer-beams, hammer-posts, collar-beams, principals, &c. A great deal of the load is transferred to this member by the puncheons of the decorative tracery filling in the spandrils, and although serious signs appear of overstrain, and small defects due to decay, this rib is undoubtedly in a fair condition for carrying some proportion of its present load. It is built up of three separate timbers, two external and one internal.

The members of this rib on the whole are in a fair condition, the major portion of the decay being due to perished sapwood. On the back edges of the timbers a considerable amount of the hood moulding has been renewed in modern oak, as can be clearly ascertained by the fact that the modern mouldings are cut out of two pieces, while the original moulding was cut out of solid timber.

The design of this great rib is, apparently, somewhat exceptional in hammer-beam roofs, but as a great main brace and stiffener it is of the utmost service and structural value to the roof. In certain of the trusses where the decay is of a highly dangerous nature I have been led to think that they are only standing to-day because of the assistance afforded by this great member.

Wall Posts.

These members, as a general rule, are in an extremely dangerous state. Occupying, as they do, an unventilated position against the walls, and, in certain cases—particularly at the north end of the hall—being actually embedded in the wall and packed round with soft rubble, they have suffered very largely from dry rot. This, together with the action of the larvæ, has so seriously affected the timbers that in almost all cases they are practically useless. One post is reduced to a completely honeycombed state resembling a sponge; in another, the whole timber has been completely hollowed out for its full length.

New Struts.

It is proposed to remove these members completely, as when the proposed steel reinforcement is carried out they will no longer serve the purpose for which they were inserted. They are not at all happily designed, either from the point of view of the appearance of the roof, or from the actual stresses they impose upon some of its members and on the hammer-beam in particular.

Purlins.

These members, referred to as lower purlins, trussed purlins, and upper purlins, appear from an examination theoretically inadequate for the loads they are called upon to bear. They bridge the space between the trusses, a distance of 19 feet, and in almost all cases they have bent considerably under their load. In many instances this bending is so great as to fracture the timbers, and in every case it has been sufficient for the tenon at each end to draw out of the mortice from 1 to 2 inches on each side.

Common Rafters.

These members appear throughout to be cut out of small trees and used green, or else cut out of the external sections of large trees, and inserted with a portion of sapwood on them. The latter shows serious signs of decay, and the common rafters throughout will require considerable renewal. They appear to be adequate for their purpose, provided the timber is sound throughout. Many of them are firred up at the back, owing to their considerable deflection, which has been mainly caused by the weakening of the timber.

Proposed System of Steel Reinforcement.

Mr. Baines then proceeds as follows:—

I will now consider the question as to what advice I should tender to the Board with regard to the general treatment of the problem of the roof.

The cubic content of oak from which the whole of the roof timbers were cut is so great, amounting, as it does, to roughly 40,000 cubic feet of timber, exclusive of the roof boarding, that, should any very considerable cutting away and reparation be intended, the cost of supplying and fixing the materials would indeed be very large. I am led to the conclusion that not only would the method I intend to suggest be the most economical, but that by it the historical and archæological claims would be given the fullest consideration.

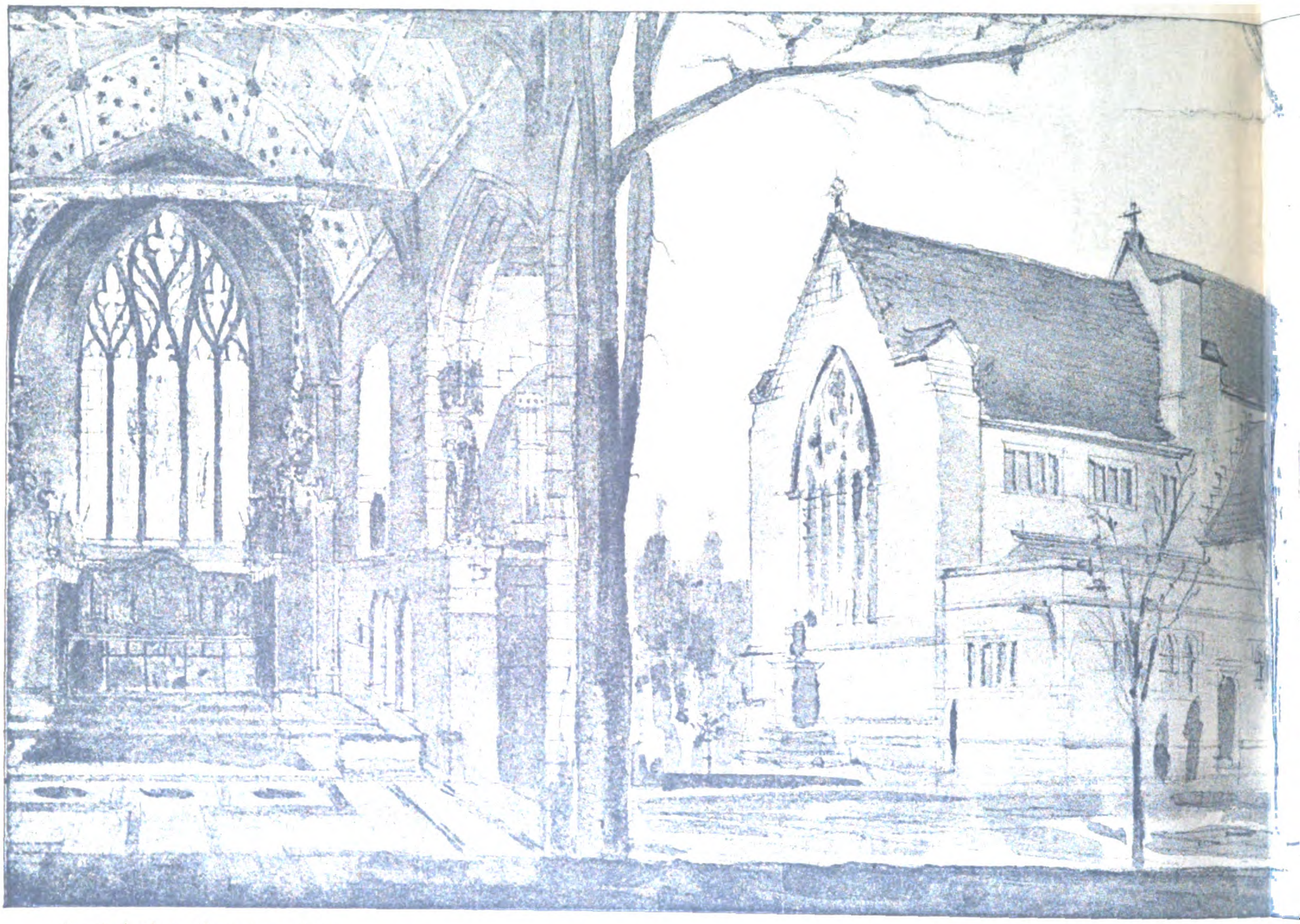
The method is, broadly, as follows: To maintain the roof in its integrity by a full scheme of steel reinforcement, designed so as to affect the appearance of the structure as little as possible, and to afford adequate support to every one of the members. Should some such scheme not be approved, not only will it be impossible to render the roof safe by piecing up the timbers, but it might even be necessary in certain cases to take the whole of some of the trusses down, renewing in their entirety many of the constructional members. It will be realised that the gravest danger would be involved in merely cutting and piecing up many of these defective members, as their whole effectivity is relative to their being complete members in themselves, and not jointed members. To cut and piece up the hammer-beams would be the gravest of constructional errors, should they be called upon to carry unrelieved the present stresses of the roof. I am therefore of opinion that by agreeing in principle to some system of steel reinforcement the whole of the timbers examined up to the present may be so treated that every vestige of the original wood unaffected by decay can be retained, and that only certain portions, such as entirely perished purlins, would have to be wholly renewed.

Should the principle here outlined not be adopted, I would not advise the Board to attempt to secure the roof by only piecing up the defective members. It would in my opinion be absolutely necessary to renew wholly a great many of the main structural members, which would involve such an enormous rearrangement of the roof that it is doubtful whether the result when completed would be of any historical value.

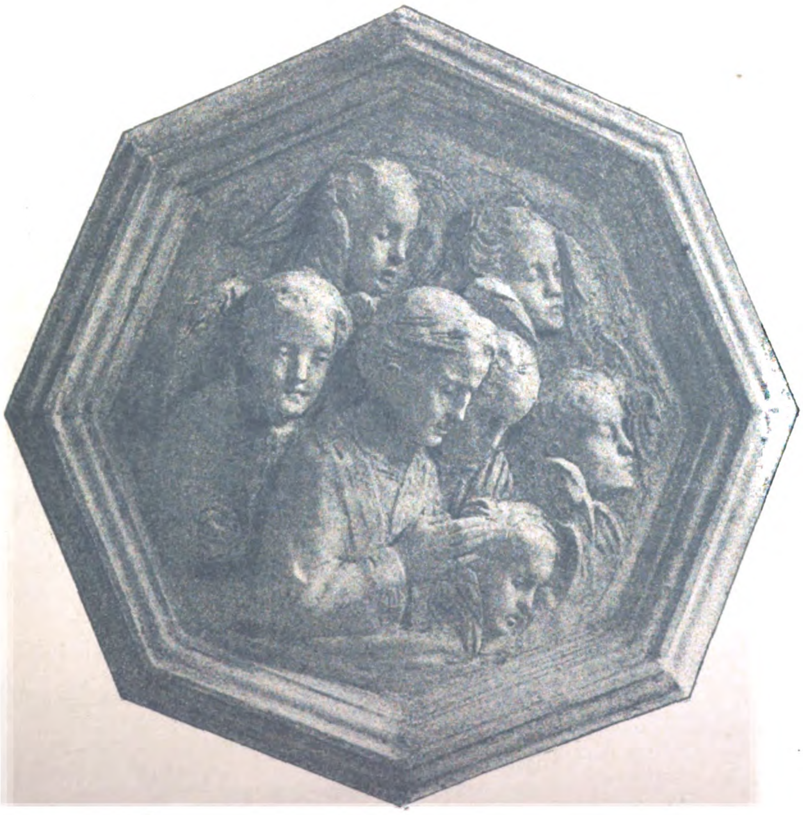
It is impossible to arrive at a close estimate of the exact amount of timber which will need to be supplied, but I roughly estimate that about 35 to 40 per cent. of the present wood in the roof will have to be renewed by piecing and patching in places of decay. Should the system of steel reinforcement, however, not be approved, this percentage would most certainly be increased to 70 or even 80 per cent., as it would be impossible to save many portions of sound timber in certain members that are badly perished at their joints and ends.

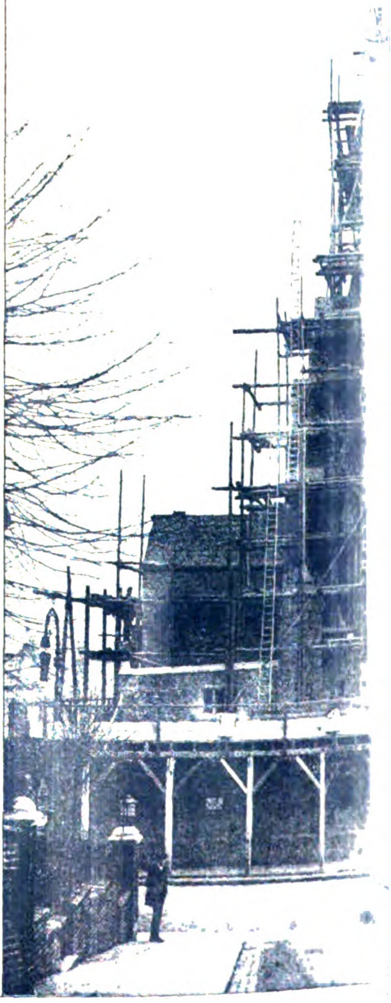
In piecing up to the roof, every attempt will be made to preserve the smallest part of the original moulded work and the faces of the various members, so that the general effect and colour of the old work may be retained. This can certainly be arranged for if the system of steel reinforcement is adequate.

The system suggested by Mr. Baines, as shown in the drawings attached to the report, consists of a complete steel truss, which follows the outlines of the principal rafters on the top, and the outlines of the great arched rib on the underside, and finishes at the bottom by horizontal members at the level of the wall plate. In providing for the insertion of this steelwork, the existing unsightly reinforcing timbers and steel tie-rods can all be removed, leaving the roof in this respect almost entirely as it was originally built. The erection will be a matter of extreme danger and difficulty. The total weight of one complete bay of reinforcement—*i.e.*, taking a truss and its purlins, bed-plates, and all purlin and ridge reinforcement—will work out approximately at twenty-seven tons of steel. The total cost, on an approximate estimate, will be £60,015.



(Royal Academy Exhibition, 1911)

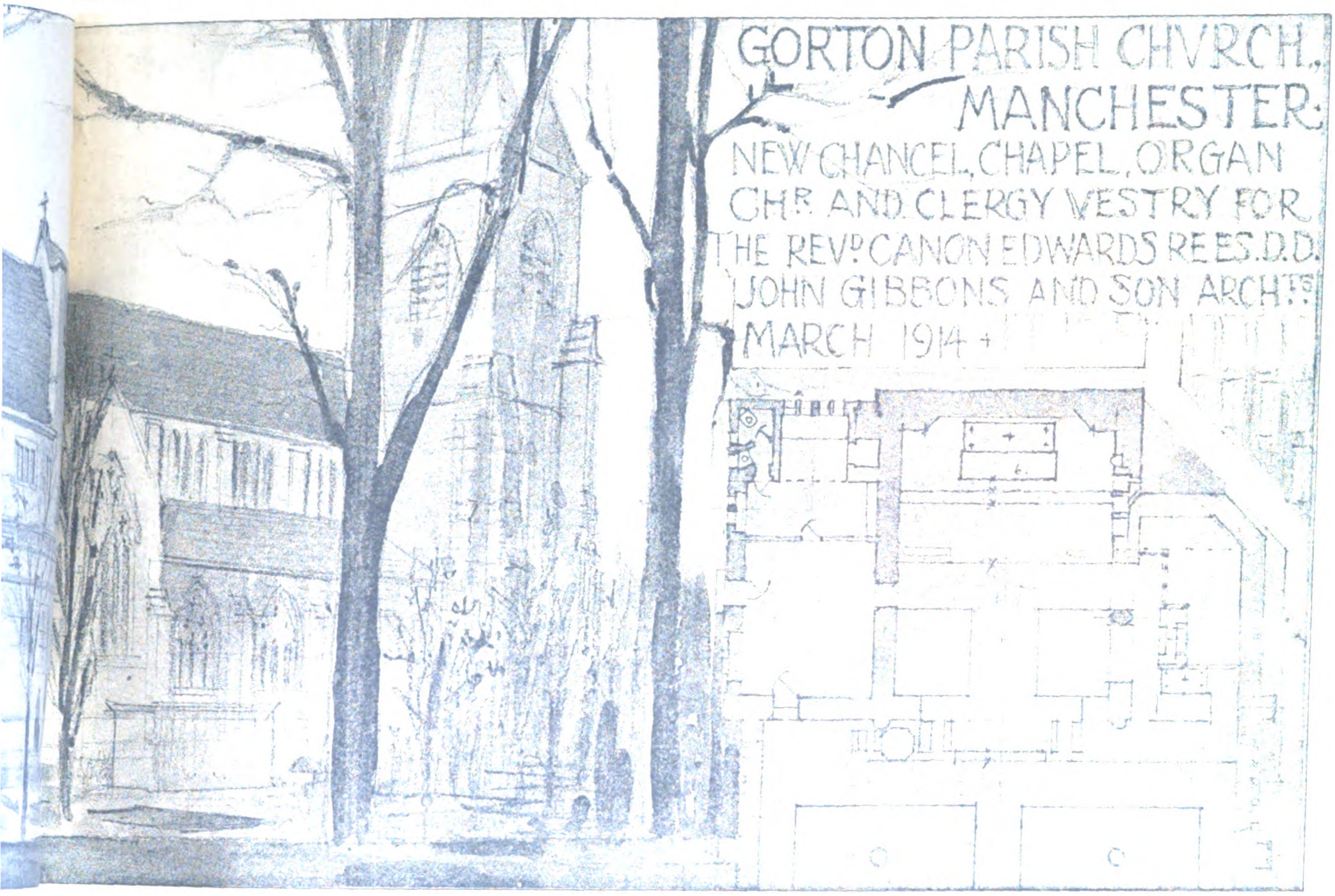




Low Relief Panel from Retable, S. Augustine's Church, Highgate.

Modelled by Miss DOROTHY POPE

S. Augustine's Church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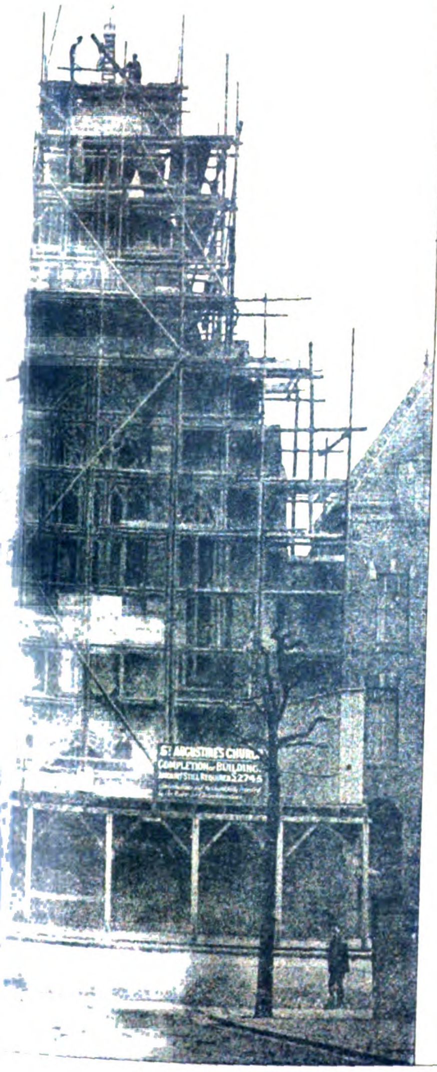
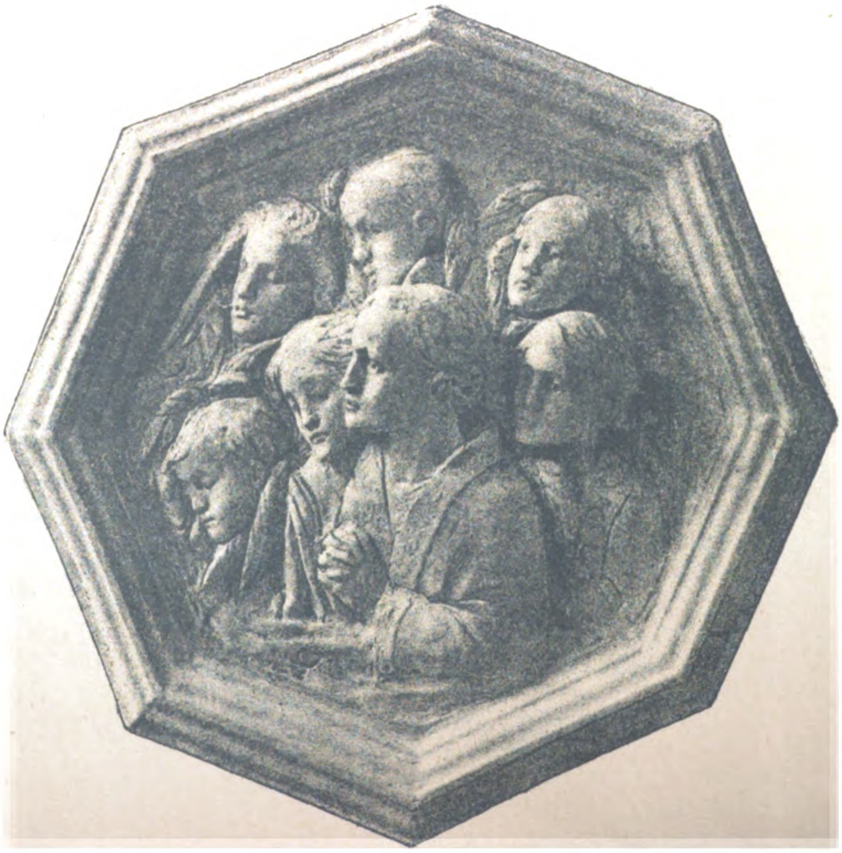

St. Augustine's Church.
Completion of Building.
Amount still required £2274



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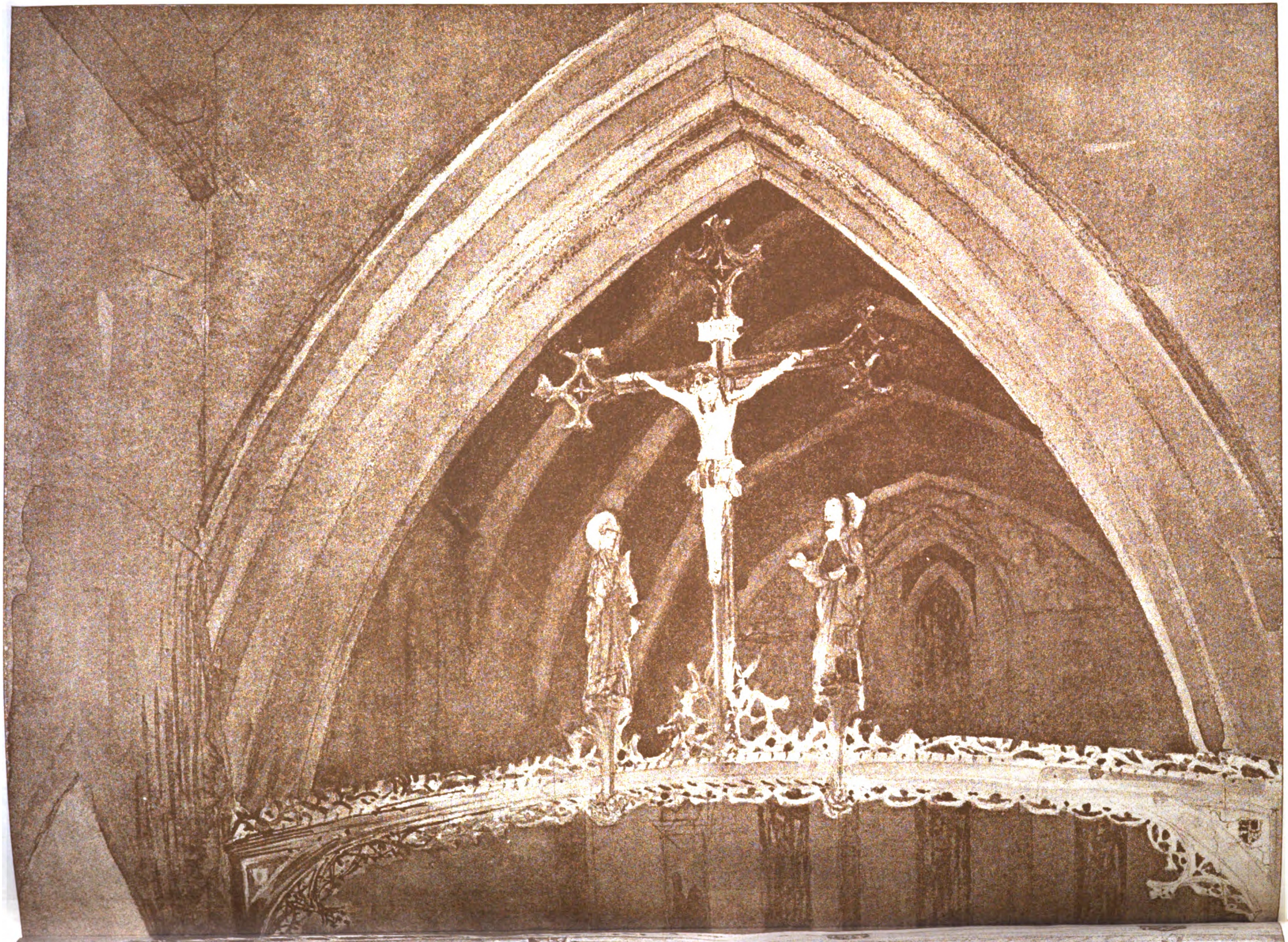

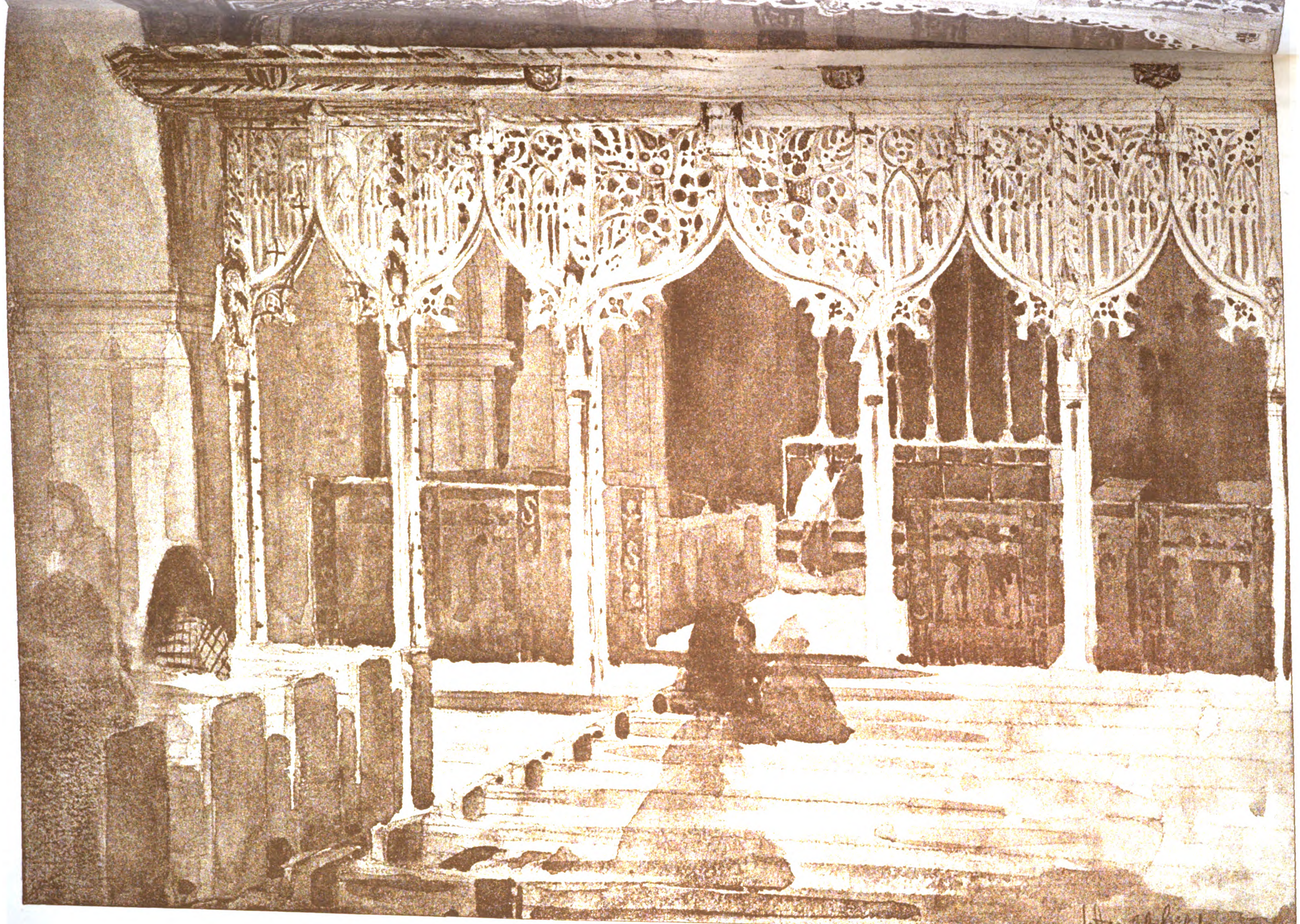

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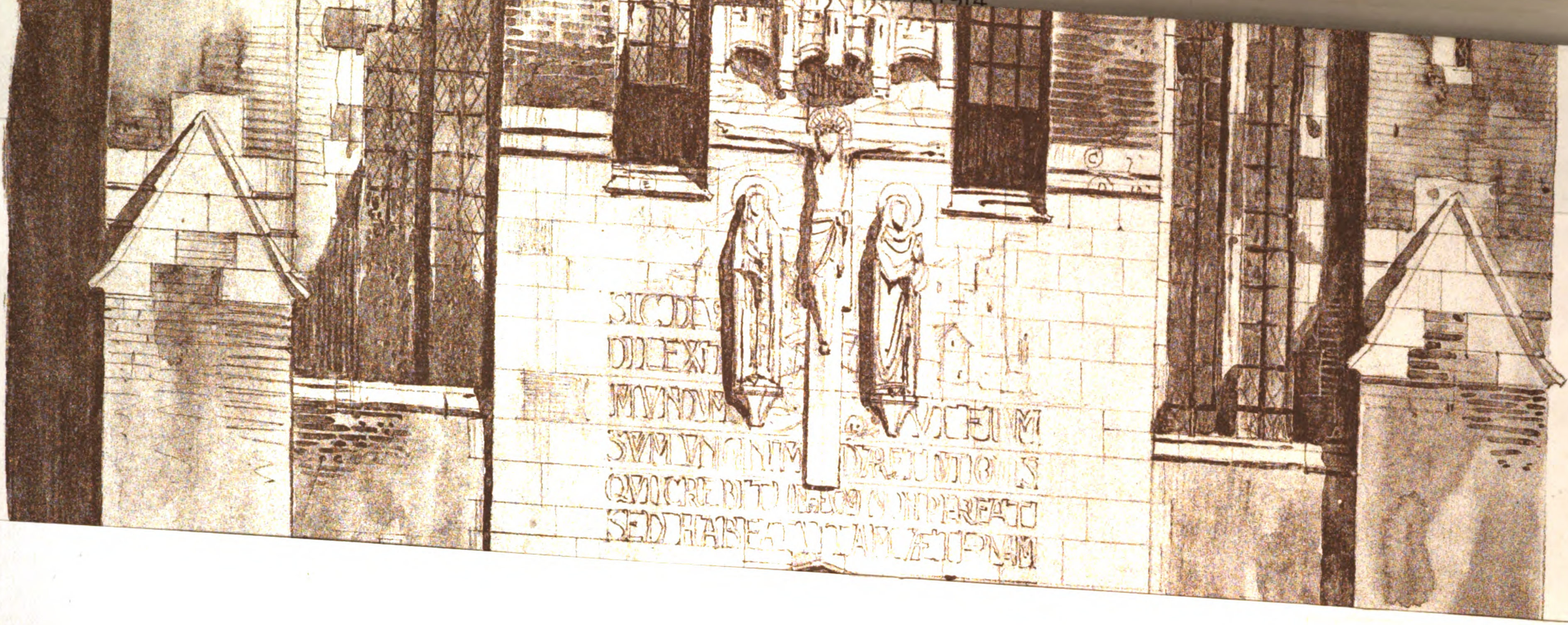
ROOD AND SCREEN, S. STEPHEN'S CHURCH, GUERNSEY.

Mr. J. HAROLD GIBBONS, A.R.I.B.A., Architect.

The Architect, June 19th 1914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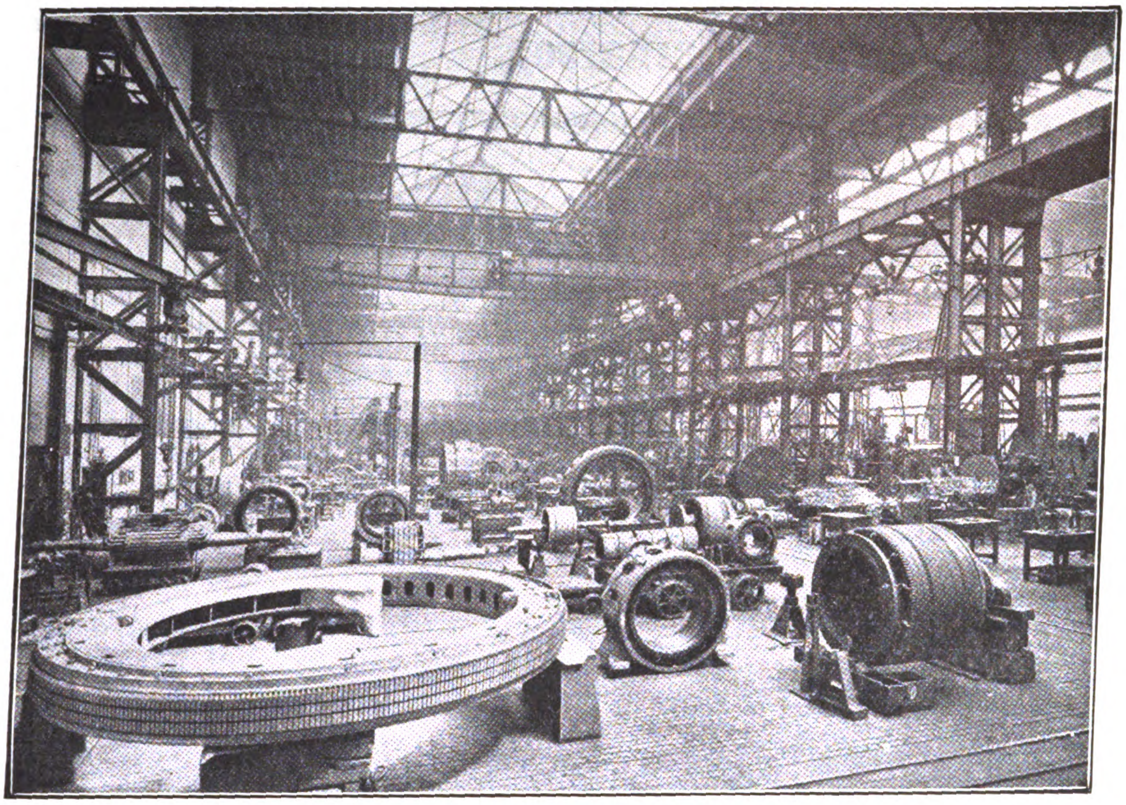
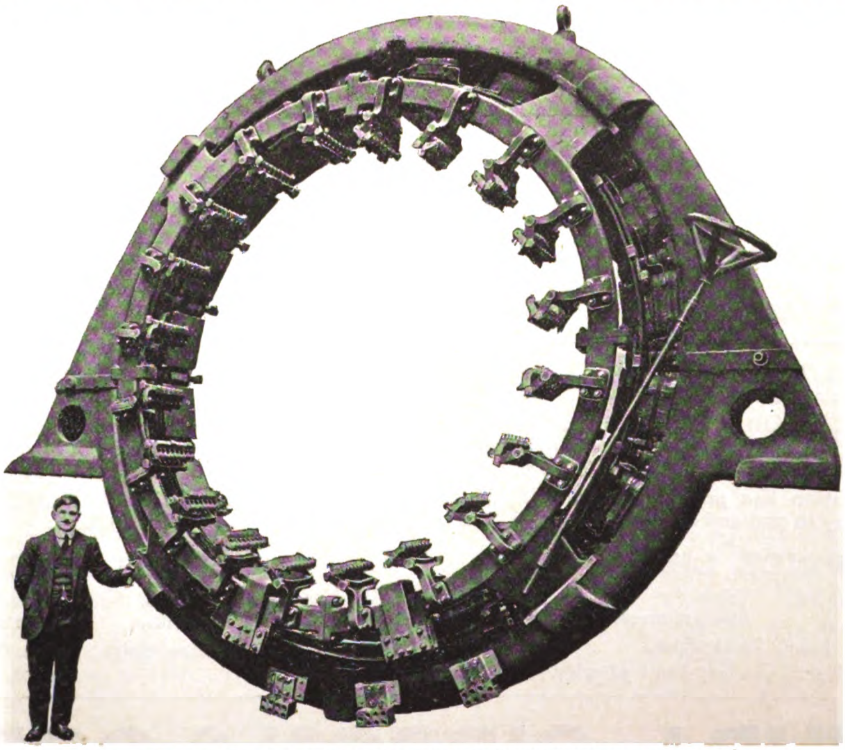
THE GENERAL ELECTRIC COMPANY.

IT is significant that the first visit which the Incorporated Municipal Electrical Association should pay in connection with their annual convention just finishing at Birmingham should be to the Witton works of the General Electric Company, Ltd. This is a testimony both to the importance of that organisation, as also to the instructiveness of what is to be seen at Witton. Though the works in this suburb works will soon be in full swing at Southampton. But none the less a tour of the remarkably commodious, well-lighted and equipped series of buildings at Witton is a real education. Here is, indeed, a huge hive of industry in which not a drop of honey is lost. Nothing is concealed. Nature's inmost mysteries of electricity seem on the point of revelation.



A BAY IN THE "WITTON" ENGINEERING WORKS.

Little can be conveyed to the reader by a bald statement of Birmingham stand upon an area of 120 acres, and are no older than fourteen years, they represent but a portion —albeit no mean one—of this company's manifold activities. This is scarcely surprising when one has grasped the literal truthfulness of their boast to make "everything that there are here made on the grand scale such heavy goods as dynamos, 9,000-kw. turbo-alternators, 7,000-kw. motor-generators, large switchboards for lighting and traction, and 52-in. lifting magnets, as well as light goods for domestic use. And what a stupendous amount of brains,



1,250 K.W. "WITTON" CONTINUOUS CURRENT GENERATOR

electrical." The visitor who wants to see their electric-light supplies must go to Southwark; their telephone and telegraph factory is at Manchester; Osram and Robertson lamps are turned out at Hammersmith. The cycle of their operations is just on the point of completion, for cable labour, and machinery must go to the production of some—one is almost tempted to say all—of them! In works on the scale of these at Witton, where each small operation has its own distinct portion of floor space, and seems for the moment of almost equal importance with any other,

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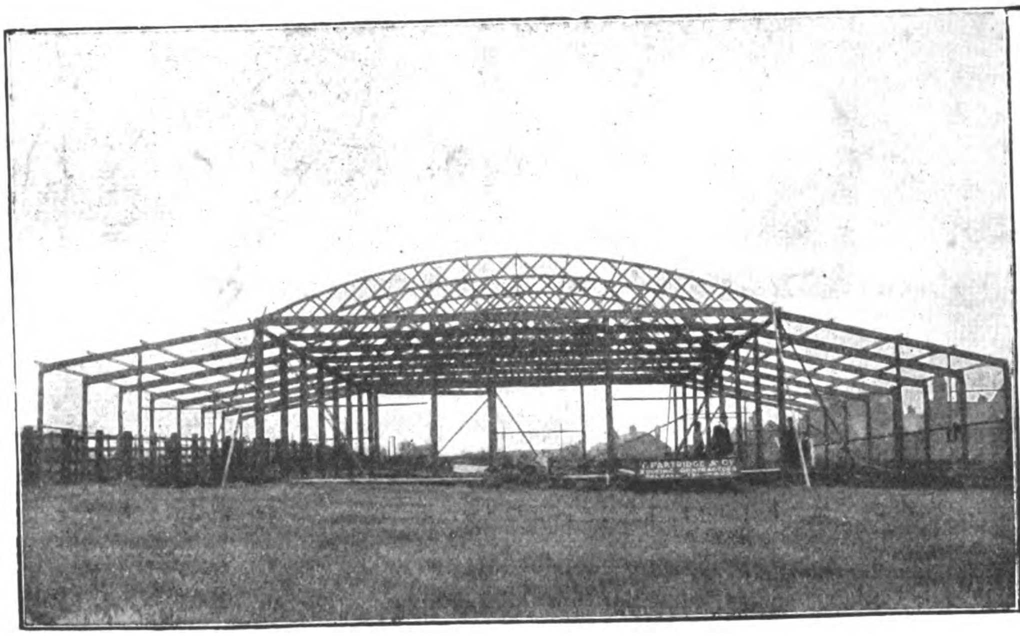

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this fact is emphasised. Witton may not be the only electrical factory whose engineering works alone are 350 feet long by 210 feet wide, but we can hardly believe that any other has a stores alongside sufficient to accommodate stocks of 30,000 different articles. Some other competing companies, no doubt, possess their own foundries; but at Witton there is the only arc-lamp carbon works in the United Kingdom, and on it our Admiralty and War Office will be entirely dependent in the unfortunate event of war. With regard to this latter department, we have heard it stated that the carbon works were for many years kept open in the face of a consistent loss for patriotic reasons. The foreigners can under existing tariff and other conditions undersell the home producer of carbons.

In addition to the Witton Works, the General Electric Company have on the other side of Birmingham a large factory in Wheeley's Lane, Edgbaston—the Ileene Works—devoted to the production of electric fittings, electroliers, lamp-holders, as well as heating and cooking apparatus on the well-known "Magnet" principle. This factory finds employment for over 550 hands, and consists of a large building with a floor space aggregating 40,000 square feet, exclusive of stores, offices, and sundry departments which are accommodated in separate buildings. The art of making fittings is one to which the company have applied themselves for a number of years, and Ileene Works turn out all classes, from the small bayonet lamp-holder to the most elaborate electroliers employed in the illumination of cathedrals, municipal buildings, and large hotels. A recent example of an important building illuminated by General Electric Company fittings was the new Adelphi Hotel, Liverpool.

The General Electric Company would be the first to confess that this country has permitted Germany, to go no further, to take a long start in the electrical manufacturing industry. But we believe that at Witton and their other factories the company are overtaking this formidable rival. It is, by the way, not always understood that the General Electric Company have no connection with any manufacturing concern of that name in Canada, America, or Germany. However, their own organisation extends throughout the world. Whilst it is particularly active in every corner of the British Empire, subsidiary companies or agencies have been established in South America, France, Holland, Belgium, China, Spain, and other countries. Witton serves as the manufacturing centre of this world-flung web, and accounts for about 3,000 of the 10,000 men employed throughout the General Electric Company's organisation. Considerable extensions to the Witton Works are already urgently needed, though the site itself was meadowland as recently as fourteen years ago.

It is no mere figure of speech to describe the story of the rise and growth of this company as a romance written by shrewd, far-sighted business men. The same adventurous spirit is evidently animating them still. The General Electric Company are inspired by the conviction that they have as yet only reached the beginning of things.

IONA MARBLE.

THE fame of the island of Iona rests upon its connection with the early teachings of Christianity in these islands and the more or less traditional history of St. Columba, but not only to the ecclesiologist and the archæologist is the island of interest; there is also for the architect and artist the circumstance that it is the repository of one of the most beautiful native marbles to be obtained in the kingdom of Great Britain and Ireland. There can be no question that we have in the past been too much accustomed to import our marbles rather than to utilise the deposits in our own country. The reason has been rather economic than aesthetic, for we have as beautiful marbles in Devonshire and Ireland, though not so exact in resemblance as those we import. Iona marble in particular has suffered from inefficient commercial handling, unskilful quarrying, and badly organised transport and supply. One could never be sure when an order for Iona marble would be filled. Now, we understand, a new and energetically managed company has taken up the business and changed the conditions, and there are at the present moment over 200 tons of the marble in London. The colouring of Iona marble is mainly an extremely variegated blending of green of many shades and creamy white. It is one of those marbles in which the colouring is highly speculative; one can never be sure in cutting a block what arrangement of the component colours will be revealed, but in the samples we have seen all are beautiful. For church work the sentiment of marble from Iona is attractive, but to the artistic mind its beauty is far more compelling. Like all marbles of similar character, this should be used only in simple slabs or plain surfaces of a fair size; certainly not in mouldings or in quartered or matched panels.

BUILDING PROGRESS IN THE PROVINCES AND SUBURBS.

A LIST OF WORKS PROJECTED OR COMMENCED.

(N.B.—Local Authorities, architects, and others are invited to submit full particulars for insertion in this weekly list. Where districts are not entered against names of architects and builders the address is as a rule local.)

ENGLAND.

BERKSHIRE.

Windsor.—Drill Hall, High Street.

BUCKINGHAMSHIRE.

Aylesbury—Generating Station.

Beaconsfield.—House (£2,500). Messrs. Forbes & Tate, architects, 16 Old Square, Lincoln's Inn, London.

High Wycombe.—Church Schools, Loake's Meadows. Mr. Thomas Thurlow, architect, 25 High Street.

CHESHIRE.

Hazel Grove.—The "Cock" Hotel: alterations, for Messrs. Bell & Co., Ltd.

Whaley Bridge.—The Goyt Mills: enlargement. Mr. J. W. Swindells, contractor, Church Road, New Mills (Derbs).

CORNWALL.

Torpoint.—No. 10 Fore Street: additions and alterations.

Truro.—Electric Generating Station, Newham Road.

CUMBERLAND.

Carlisle.—Picture Palace, Botchergate, for the Carlisle Picture House Company, Ltd.

Picture Palace, English Street, for the Associated Provincial Picture Houses, Ltd. Messrs. Atkinson & Alexander, AA.R.I.B.A., architects, 199 Piccadilly, London. Messrs. J. & R. Bell, contractors, Nelson Street.

Wigton.—Bolton Hall: works, for Lord Leconfield.

DERBYSHIRE.

Derby.—Branch Library, Vulcan Ground, Normanton.

Derby School: St. Helen's House: alterations (£1,200).

Works, Stuart Street, for Messrs. W. A. Hiscox, Ltd.

DEVON.

Cornwood.—House and bakery, for Major W. F. Parker Hynton.

Congregational Sunday School; also Manse.

Plymouth.—Two houses, Welbeck Avenue. Messrs. Carder & Carder, architects, 4 Buckland Terrace.

Plympton St. Mary.—Workhouse Infirmary: new wing. Mr. F. A. Clark, architect, 83 Old Town Street, Plymouth.

DORSET.

Winfrith.—W.M. Church.

DURHAM.

Hebburn.—Four workers' houses, Hedgeley Road, for Mr. R. Finn (of Gosforth).

Houghton-le-Spring.—Business premises, Colliery Row: extensions, for Messrs. G. Graham, Ltd.

Business premises, No. 81 Newbottle Street, for Mr. C. E. Tymms.

Shiney Row.—Eight houses, Mill Pit, for the District Tramways, Ltd.

Silksworth.—Two houses, Margate Street, for Messrs. J. & W. Hodgson.

Sunderland.—Training College (£8,000).

Town Hall: extension.

Thornley.—Twelve cottages, The Villas, for aged miners; also quarters for eight bachelors (£3,000).

Willington.—Presbyterian Church.

Parish Church Hall and Institute (£2,500). Mr. W. A. Kellett, architect, 2 South Road, Bishop Auckland.

GLOUCESTERSHIRE.

Alderton.—Six cottages (£1,150), for Winchcombe R.D.C.

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Southampton.—Branch Library, Portswood (£2,000).

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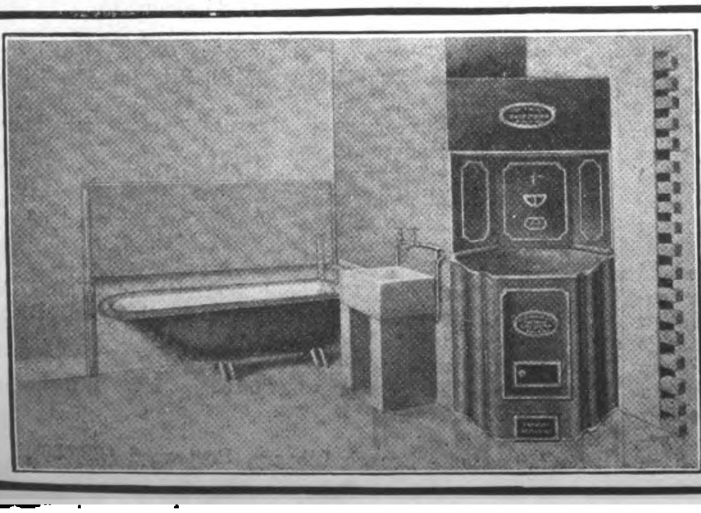

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KENT.

Sittingbourne (*near*).—Hospital: pavilion for consumptives, &c. Mr. W. L. Grant, architect, High Street.

Walmer.—Baptist Sunday Schools.

LANCASHIRE.

Accrington.—W.M. Church, Clayton-le-Moors (£3,000).

Ashton-under-Lyne.—Council School, Mossley Road.

Bolton.—Twenty houses, Dudley Avenue, Tonge, for Messrs. Leigh Bros.; also

Two houses, New Hall Lane.

Twenty-one houses, Longfellow Avenue, Hulton. Mr. F. H. Cartwright, builder, 283 St. Helen's Road.

Twenty-one houses, Higher Swan Lane, Great Lever, for Mr. A. A. Booth.

Ten houses, Deane Road, for Mr. J. Higson.

Thirteen houses, Musgrave Road, Smithills, for Mr. G. Duxbury.

Two houses, Westcliffe Road. Mr. J. Arrowsmith, builder, Primrose Street, Eagley.

House, Bentley Street, for Mr. H. Seddon.

House, Mitre Street: rebuilding, for Mrs. W. Turner.

Mill, Swan Lane: extension, for Swan Lane Spinning Company.

Victoria Mills, Cross Street: additional storey, for Messrs. Johnson, Hodgkinson & Pearson.

No. 2 Mill, Grant Street: extension, for Messrs. Crosses & Winkworth.

Shippon and stables, Bank House Farm, for Right Hon. Earl of Ellesmere.

Stables at Lostock Junction Mills, for Messrs. W. Heaton & Sons.

Warehouse, Princess Street. Mr. T. E. Smith, architect, Central Chambers, Fold Street.

Darwen.—Congregational Church, Lower Darwen.

Didsbury.—Christian Scientist Church.

Liverpool.—Exchange Station Hotel: addition, for the Lancs. and Yorks. Railway Co.

Royton.—St. Anne's Church: new school.

LINCOLNSHIRE.

Lincoln.—Two houses, Whitehall Grove. Mr. R. L. Holland, builder, 195 West Parade.

Two houses, Carline Road, for Messrs. Trowell & Bolton.

Fifteen houses, Devon Street, for Messrs. Oldfield & Hayes.

Ten houses, Severn Street, for Mr. W. Hopes.

Shop, Stamp End, for Messrs. Clayton & Shuttleworth, Ltd.

MIDDLESEX.

South Ealing.—Council School for 900 places.

South Mimms.—Twelve cottages, High Road, for the R.D.C. (£2,750).

Wembley.—Council School.

NORFOLK.

Wendling.—P.M. Church.

NORTHUMBERLAND.

Jesmond.—Synagogue, Eskdale Terrace (for 322 sittings). Mr. M. K. Glass (of Newcastle), architect. Messrs. Elliott Bros., contractors, Otterburn Terrace, Newcastle (£2,500).

Newcastle.—Junior Day Technical School, Shields Road.

NOTTINGHAMSHIRE.

Warsop.—Market Hall and Theatre.

SHROPSHIRE.

Church Stretton.—Congregational Hall, High Road.

SOMERSET.

Mells.—Thirty-seven houses, for the Colliery Company.

Taunton.—The old "Nag's Head," North Street: conversion for the London City and Midland Bank.

St. Saviour's Home, Park Street: additions and alterations, for the Trustees.

Town Hall.

Wells (*near*).—Proposed County Sanatorium, Dulcote Estate.

STAFFORDSHIRE.

Stafford.—The "Staffordshire Knot": rebuilding, for Messrs. Charrington & Co.

Wigginton.—Mission Church, Comberford.

SURREY.

Addlestone.—Factory, for the Chertsey Soapmakers, Ltd.

SUSSEX.

Bexhill.—Proposed Church Schools (£500).

WARWICKSHIRE.

Bell Green.—Four houses, for Mr. A. Looms.

Kenilworth.—Parish Church: additions and alterations.

Keresley.—Mission Church. Mr. C. J. Johnson, architect, Central Chambers, Broadgate, Coventry.

WORCESTERSHIRE.

Dudley.—Training College: Men's Hostel and Principal's house (£9,000).

Evesham.—Proposed Working-class dwellings.

Feckenham.—Ten workmen's dwellings, Astwood Bank (£1,600).

YORKSHIRE.

Huddersfield.—Girls' High School: additional 100 places (£5,000).

Lartington.—R.C. Church (£800).

Maltby.—Ninety six houses, for the Maltby Main Colliery Company.

Sheffield.—Lodge Moor Hospital: alteration and extension (£68,000).

Sowerby Bridge.—Sixteen houses, off Milton Street. Messrs. Helliwell & Shaw, builders, Hill Crest.

Lock Hill Mills: additions, for Messrs. W. & R. K. Lee, Ltd.

Stocksbridge.—Bungalow. Mr. S. E. Minns, architect, 34 Bank Street, Sheffield.

WALES.

Aberdare.—Isolation Hospital (£10,000).

Penygraig.—Twenty-five houses, for the Trustees of the Crawshay Building Club. Mr. E. I. Evans, architect, 55 Dunraven Street, Tonypandy.

Pontypridd.—Workhouse: additions and alterations (£27,000).

Swansea.—Training College: rebuilding.

Girls' and Infants' School, Cwmbwrla (£19,000).

Towyn.—Isolation Hospital: administration block (£650).

SCOTLAND.

Ayr.—Y.M.C.A. Institute, High Street.

Cambusnethan.—School for defective children, for the School Board.

Colmonell.—Public School, Lendalfoot: additions, for the School Board.

Edinburgh.—No. 15 Union Place: alterations, for the Bank of Scotland.

Glasgow.—Bakery, McLellan and Vermont Streets: additions and alterations for Messrs. G. Milne & Co.

Electricity Works, Dalmarnock Road and in Strathclyde and Woodhall Streets, for the Corporation.

Offices at No. 301 Great Eastern Road, for Messrs. R. & J. McCrae, Ltd.

Port Glasgow.—Two tenements of twenty-three houses, Mary Street and Glen Avenue. Messrs. N. G. Gillespie & Co., builders, Mary Street.

IRELAND.

Cashel.—Forty working-class houses (£5,700).

BRITISH PATENT SPECIFICATIONS.

Selected by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

The first date given is the date of application; the second, at the end, the date of the advertisement of the acceptance of the completed specification.

No. 23,770. Oct. 21, 1913.—Pavement Lights. A. F. Benjamin, of 187 Union Street, Southwark, Surrey, architect.—This invention relates to improvements in the construction of pavement or sidewalk lights, and the like. The pavement light consists of a metal frame of bars and cross-bars all made in one piece, and forming pockets into which the glasses or lenses are inserted. The glasses or lenses are provided on their undersides with lips, the lips of adjacent glasses or lenses closely approach each other to partially or wholly cover the metal bars and cross-bars. Each glass or lens is put into its pocket in the frame from the underside. The glasses or lenses are provided with grooves or projections, and are secured in the pockets by cement either with or without strips, or wedges. In the case especially of repairs a glass or lens may be temporarily held in place before the cement is run in by strips, one edge of a strip entering a groove, whilst the other is supported by the frame. The upper or outer side may be finished with plain cement or with tiles, marble,

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or mosaic, as desired. Fig. 1 is an underside view, and fig. 2 is a section either on the line A, A, or the line B, B. Fig. 1 *a* are the bars and cross-bars forming pockets into which the glasses (*b*) are inserted. The glasses (*b*) have lips (*c*) on their four sides which closely approach the lips on adjacent glasses and so partially or wholly cover the bars and cross-bars (*a*). In the glasses (*b*) are grooves (*d*) into which cement or the like (*e*) is run to secure them in place. Tiles (*f*) are placed above the bars. May 20, 1914.

Fig.2.

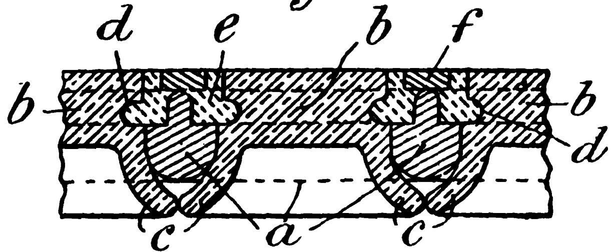
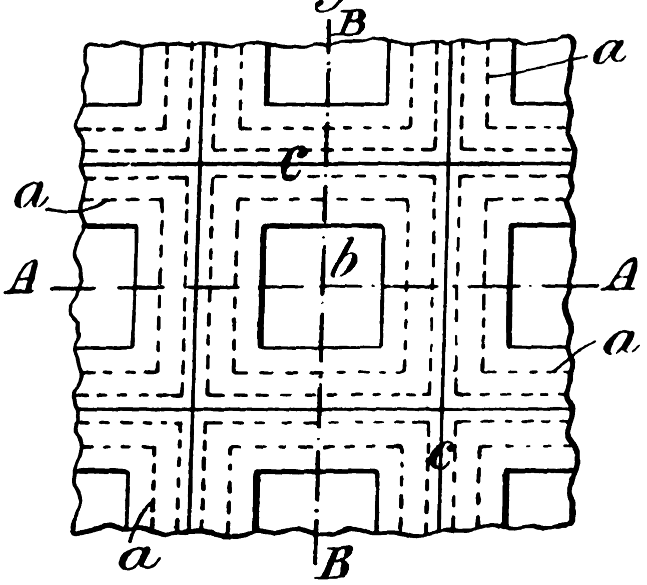


Fig.1.



PATENT SPECIFICATIONS PUBLISHED, JUNE 11, 1914.

Selected by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

No. 3,930. Feb. 15, 1913.—E. R. Calthrop, Eldon Street House, Eldon Street, London, and Richard Churchill, 48 Albemarle Street, W. Joints and couplings for pipes and tubes.

5,896. Sept. 10, 1913.—A. L. Winser, 38 Holmesdale Road, Hampton Wick. Fastenings for doors, gates, and the like.

11,405. May 10, 1913.—James Bray, 86 Queen Street, Portsea, Hants, and J. J. Talbot, 95 Telephone Road, Southsea, Hants. Fire escapes.

11,533. May 17, 1913.—Dante Tessieri, 467 Boedo Street, Buenos Aires, Argentina. Regulation of lifts, elevators, and the like.

11,616. May 19, 1913.—Dated under International Convention May 20, 1912. Firm Albert Wigand, 7 Bismarckstr. and the Firm Paul Schwarz, 6 Innern Georgendamm, Elbing, Germany. Hot-water boilers.

11,745. May 20, 1913.—S. J. Call, 68 Queensway, Wallasey, Cheshire. Apparatus for cleaning chimneys, flues, and the like.

11,924. May 22, 1913.—T. A. Parkington & Chas, Macintosh & Co., Ltd., of Cambridge Street, Manchester. Manufacture of composite floor coverings.

12,255. May 26, 1913.—J. L. Hodgson, 199 High Holborn, W.C. Means for indicating the quantity of liquid flowing through a pipe.

13,588. June 12, 1913.—J. B. Meiklejohn, 115 Bath Street, Glasgow. Sunk electric switches, wall sockets, and brackets.

16,555. July 18, 1913.—E. G. Tewson, The Rosary, Radlett, R.S.O., Herts. Windows, doors, and the like.

17,457. July 30, 1913.—J. & W. Meadowcroft and W. Meadowcroft & Son, Ltd., Regent Street, Blackburn, Lancs. Syphon rinsing apparatus.

17,512. July 30, 1913.—Arthur Hebden, F.C.I.S., 7 Union Court, Old Broad Street, E.C. Silencer for windows and the like.

17,519. July 30, 1913.—Dated under International Convention Aug. 2, 1912. Carl Fohr, 26 Romerstr, Munich, and Emil Kleinschmidt, 7 Hynspergstr, Frankfort-on-Main. Manufacture of briquettes.

18,322. Aug. 12, 1913.—Alexander Spencer, 77 Cannon Street, E.C. Fastening device for windows, doors, and the like.

19,184. Aug. 23, 1913.—E. B. Wilder and A. B. Wilder, 3912 North Broadway, St. Louis, Missouri, U.S. Process of and device for die-cutting wood and other materials.

19,820. Sept. 2, 1913.—Uriah Kimber, 9 Albert Road, Morice Town, Devonport. Metallic ridge for detachable-roof purposes.

21,702. Sept. 26, 1913.—A. W. Dyer, 30 Rathbone Road, Warley, Birmingham. Pencil compasses and the like.

22,071. Sept. 30, 1913.—J. K. Robinson, 406 Louisiana Street, Little Rock, Pulaski, Arkansas, U.S. Chimney and ventilating shaft tops.

27,630. Dec. 1, 1913.—H. J. Shinkfield, 20 Lordship Lane, East Dulwich, S.E. Staples and locks, latches or bolts.

28,626. Dec. 11, 1913.—J. W. Vinall, 8 Caterham Road, Lewisham, S.E. Floor coverings.

3,159. Feb. 6, 1914.—C. C. Carpenter, D.Sc., 709 Old Kent Road, S.E. Gas fires; and 3,160, Feb. 6, 1914.—Backing for gas fires.

6,514. March 14, 1914.—William Turnbull, 215 Lambton Quay, Wellington, New Zealand. Flushing apparatus for water closets.

7,105. March 20, 1914.—F. J. J. Gibbons, St. John's Works, Church Lane, Wellington. Fanlight openers.

25,007. Nov. 3, 1913. Chubb & Sons' Lock and Safe Co., Ltd., 128 Queen Victoria Street, E.C., and F. J. Butter, 11 Merridale Road, Wolverhampton. Panels or slabs for doors, walls, partitions, and the like.

Any of the above specifications may be obtained from J. D. Roots & Co.

Correspondence

[The Editor will not be responsible for the opinions expressed by Correspondents.]

Doubtful Business.

SIR,—Some months ago I received a letter from a stranger in London informing me that he was the architect for an hotel to cost upwards of £100,000 for a company in this neighbourhood, and asking me if I would be prepared to take up £1,000 worth of shares, in which case he would give me instructions to prepare the bills of quantities at 2 per cent. commission.

As I had to see a client the following week in London, it gave me an opportunity of calling on my correspondent, who was an "estate agent." In answer to my first question, "Why had he selected me?" he replied: "In a business like mine I naturally know the name of the best quantity surveyor in the North of England, just as I know the best in the West of England and the best in London." He introduced me to his architect, who showed me the plans of an extremely extensive and fine building, and everything would have been satisfactory, but he wanted me to take up the shares forthwith and pay a deposit, and I ascertained later that he had neither formed the company nor bought the site.

He was negotiating with a Yorkshireman, and no great harm was done; but I think it better to warn other surveyors, and it would be interesting, too, to know if my friend has approached in like manner "the leading quantity surveyor in the West of England and the best in London," and with what result.—Yours obediently,

W. HOFFMAN WOOD.

Queen Square Chambers, Leeds: June 9, 1914.

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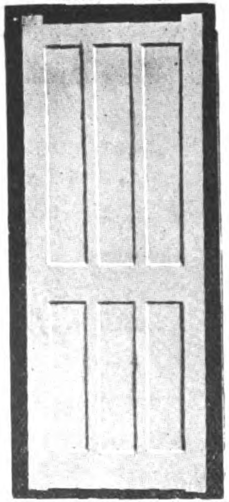

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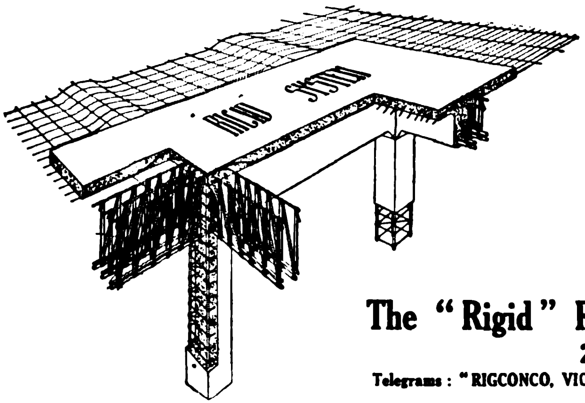

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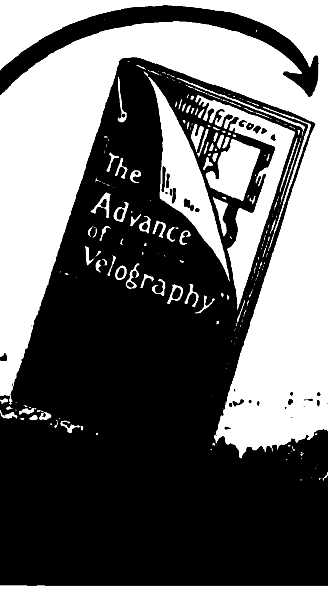

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THE ARCHITECT

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FORTHCOMING EVENTS.

Saturday, June 27.

Institution of Municipal Engineers : Visit of Eastern and North Eastern Districts to the Enderby and Stoney Stanton Granite Company's Quarries, near Leicester.

Monday, June 29.

Royal Institute of British Architects : Special General Meeting, at 8 P.M.

Tuesday, June 30.

Society for the Promotion of Roman Studies : Paper entitled "A Mid-Sixteenth-century Panorama of Rome by Anton van den Wyngaerde of Brussels," by Mr. W. St. Clair Baddeley, at 4.30 P.M.

Wednesday, July 1.

Royal Archæological Institute : (1) Paper entitled "Indications of Earthworks in Ashdown Forest," by Mr. Gordon Home, F.S.A.; (2) Paper entitled "Further Examples of English Mediæval Alabaster Work," by Mr. Philip Nelson, F.S.A., at 4.30.

Thursday, July 2.

Institution of Civil Engineers : Annual Conversazione at the Institution, at 8.30 P.M.

THE APOTHEOSIS OF THE COTTAGE.

AMONGST the most interesting problems with which the modern architect has to deal, and at the same time amongst the most fruitful sources of successful accomplishment, is the remodelling of an old cottage or farm building to serve the purpose of a modern residence. Occasionally the opportunity occurs for the judicious adaptation of an old house of even higher pretensions than the cottage or the farm. Then the architect blessed with a sympathetic soul for ancient art has before him the chance that will thrill his enthusiasm to poignant vibration.

He who would do justice to such opportunities must free himself from all adherence to the principles of the grand manner, to the methods of the Beaux-Arts. Symmetry and axial planning must, for the nonce, be rigidly and firmly set aside. The utmost care must be given to preserve the accidentalism that is so characteristic of the unfettered architecture of the countryside, untrammelled by considerations of frontage and party boundaries and seeking only, without obvious intention or pretence of picturesque composition, to satisfy the particular needs and requirements of the builder or building owner.

More especially must every evidence of vernacular building and the influence thereon of local material be respected and followed. No importation foreign to the genius loci should on any account be allowed. The texture as well as the colouring of the new building work must assimilate as closely as possible with that of the old. This is not to advocate falsity of expression, for the new work can proclaim its modernity without harshly jangling with the spirit of the old.

Perhaps, indeed, one of the chief difficulties—which, after all, only go to enhance the pleasure of overcoming them—that confront the architect who is dealing with an old house is the right treatment of his new work, whether in repair or in addition, so that it may sufficiently be recognised as new and yet not too obtrusively so nor in violent opposition to the character and feeling of the old.

Another point which requires careful consideration and wise judgment is the degree of reverential treatment that should be accorded to the accretions which in almost every instance have been superimposed on the original structure. Ought the doctrine to be religiously accepted that whatever has been done in the past should be maintained as evidence of history? The old half-timbering may have been covered with stucco, the old casements replaced by double hung sash windows glazed in single sheets, the tiling or thatch supplanted by Bangor countess slates. Should such things be retained for the sake of history?

It is interesting to turn to the forty examples of modern country houses made, with more or less addition, out of old buildings, that have been collected by Mr. Lawrence Weaver,* to see how various architects have dealt with the problems involved in the apotheosis of the cottage.

The village of Broadway, Worcestershire, is famous as an example of old-world Cotswold architecture, and many of its little houses have found purchasers who have required more modern and extended accommodation than the original buildings contained. From amongst these three have been selected by Mr. Weaver for illustration. Mr. Guy Dawber has dealt with the Court House, originally a gate-house to the estate of Middle Hill. He has added a wing of completely new building in strict harmony and accordance in detail with the old and such that the original designer might have planned. This and slight modification of the interior make an unity of the larger building compounded as it is of old and new. In their modernisation of West End, Broadway, Messrs. Bateman & Hunt adopted a more drastic procedure. The old front was pulled down and re-erected in a new position, reversed on plan so as to face the garden instead of the road, and new servants' quarters were added in extension of the rebuilt old structure. The determining factor in the scheme was the jerrybuilding of the old workmen who put up their stone walls with clay for mortar and without either foundations or damp course. At the Orchard Farm, Broadway, Mr. A. N. Prentice had before him a little house built about 1620, added to about a hundred years later, when also a great barn was built at the back, and in the nineteenth century divided into two cottages with the substitution of wood sashes for decayed mullion windows. Adding a new kitchen wing, Mr. Prentice has completely transmogrified the old buildings, though keeping the old front towards the road, with "restored" mullions to the windows. The barn has now a huge fireplace-ingle in place of its old cart-door, and the roof has been raised to allow of a second storey. A very charming and convenient house is the outcome—but what of the history? After all, are not Mr. Bateman and Mr. Prentice right? They have retained the beauty of the old craftsmen's productions, although the "history" of the misfortunes and faults of the old work has been obliterated. The charm of the old has been maintained, sympathetic and equally charming new work has been added, and the present houses are as much suited to their present owners as were the original.

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* *Small Country Houses:* Their Repair and Enlargement. Forty examples chosen from five centuries. Lawrence Weaver. (London: *Country Life* and George Newnes, Ltd. New York: Charles Scribner's Sons. 15*s.* net.)

An entirely different problem was presented to Mr. Williams-Ellis when he was called upon to unite in one at Wolverton Court, Stratford-on-Avon, an old half-timbered structure and a nineteenth-century block, "comfortable but bald." The architect elected to make his connecting link essentially modern, a twentieth-century version of Renaissance detail. Mr. Weaver gives praise to the decision of Mr. Walter Cave in his treatment of a small house at Sutton Courtenay, Berkshire. Here there was a picturesque brick and half-timber barn as the groundwork from which to start. Mr. Cave metamorphosed the barn into a two-storey building of sitting-room and bedroom over, and built an entirely new house of quite different character separated from the barn, which thus becomes something to look at from the house instead of a part of it.

Nethergate House, Clare, Suffolk, and Paycocke's, Coggeshall, Essex, are examples of East Anglian half-timber houses in which judicious removal of the "history" of vandalistic alterations and concealment has been the chief activity and, we think, duty of the architects entrusted with their restoration from ignoble uses to a level with their original importance and consequence as well as suitability to modern requirements. Surely such instances are sufficient refutation of the claims of "history." When beautiful work of the past has been covered with plaster and paint of an unappreciative age, it cannot in seriousness be contended that we should acquiesce in such ill-treatment and preserve the evidence of the misfortunes to which admirable productions of bygone artist-craftsmen have been subject.

Many other interesting examples of varied treatment by skilful artists of to-day to render old cottages and other modest houses suitable for modern use without impairment of their old-time sentiment and beauty are to be found in the volume compiled by Mr. Lawrence Weaver, and produced with the admirable illustrations that are characteristic of the publications of *Country Life*.

NOTES AND COMMENTS.

It is a happy coincidence that Monday last should have been the occasion of the presentation to M. Jean Louis Pascal of the Royal Gold Medal for Architecture, even although he was unfortunately prevented by temporary ill-health from attending personally to receive it, and the announcement on the same day that the honour of knighthood had been bestowed upon Dr. J. J. Burnet, one of the British architects who have passed through M. Pascal's atelier. We may be allowed to say that Dr. Burnet is to be congratulated upon a well-deserved honour without hiding our opinion that there are other members of the architectural profession equally deserving of reward. Dr. Burnet's knighthood may be taken as a recognition of the work he has done in the carrying-out of the extension to the British Museum, for which job, be it remembered, he has to thank the Council of the Royal Institute of British Architects, on whose recommendation he was appointed by the Government.

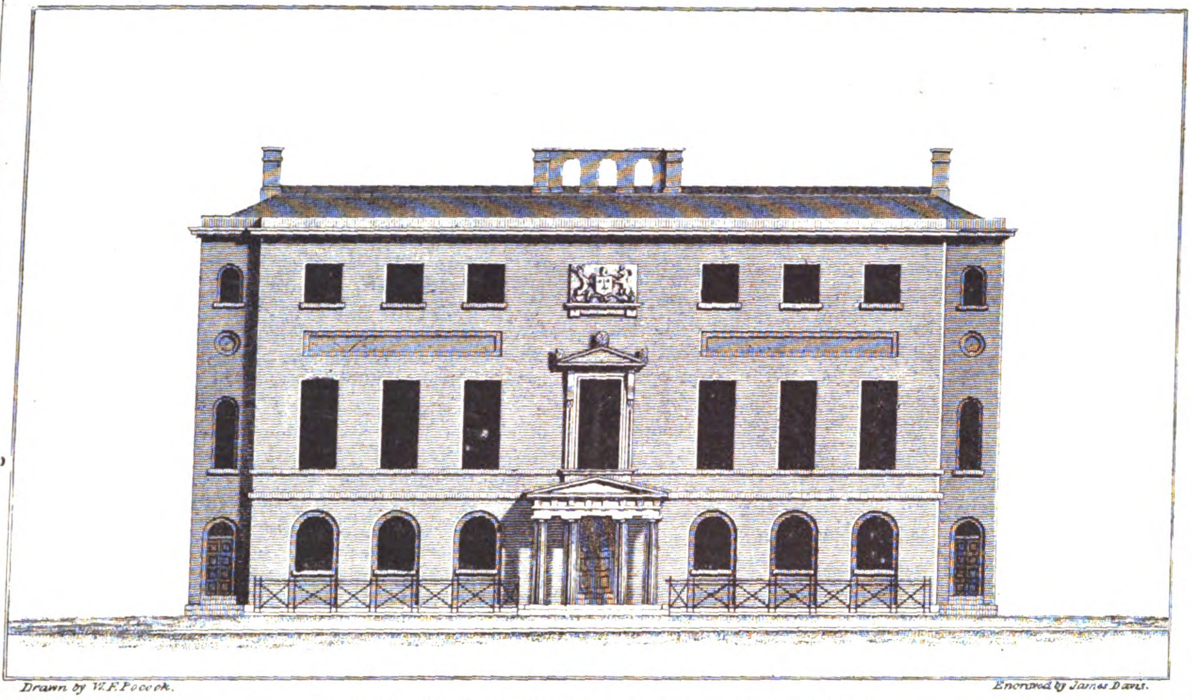
The Camera, Sketch, and Debate Club of the Architectural Association is a very live institution—a fact which we are glad to note, in view of the circumstance that it is practically the only survivor of the originally vital principle of the Association—mutual and voluntary self-help and camaraderie. The Club now announces the programme of a most attractive foreign excursion to Bayeux and district, extending from July 17, when the party leaves England by the night boat from Southampton, to July 31, when they leave Havre at midnight on their return to England. The district of Bayeux includes the city of Caen, and that city is to be the headquarters of the party for several days. Following the usual practice of the Club, the programme of the excursion demands for its full accomplishment the use of a bicycle. It should be noted that these excursions arranged by the Club are particularly intended for younger members of the architectural profession who do not desire to waste money on luxurious travelling. Consequently, the cost is kept down as low as possible. The summer programme of the Club includes, besides the foreign excursion, week-end visits in August to Chichester, and in September to Canterbury. There is besides an attractive item of a week on the Norfolk Broads from September 5 to 14.

A leading article in the *Times* discusses the shape of theatres, or, rather, of their auditoria. The writer calls attention to the fact that when James Burbage put up the first public playhouse he made it round, thus following the principle adopted in the Greek and Roman theatre, the Roman amphitheatre, the bull-rings and bear-rings. The writer then makes the point that the Elizabethan theatre had its stage out in the arena with the audience on three sides of it, and the Restoration stage had its "apron" projecting so far out into the auditorium that the people in the side boxes must have seen a good deal of the action from behind. The modern theatre, it is pointed out, has entirely altered the relative position of stage and audience. The stage is no longer amongst the audience, but a framed picture in front of them, and the writer therefore suggests that the proper shape for a modern theatre auditorium is rectangular, and the retention of side galleries a solecism. Theoretically the principle of the writer is sound, but he forgets that galleries on the side walls enable a larger audience to be grouped within a theatre of a given size, thus with any given audience bringing a larger proportion nearer to the stage, and as theatres are commercial ventures—often we might say speculations—making for economy in cost of erection. It may be remembered that in many large concert halls of rectangular form side galleries are used as well as those at the end.

Professor Leonard Hill, who has done so much to revolutionise our ideas of ventilation, has invented a new instrument—the katathermometer—for recording the rate of cooling the air, which, in accordance with the Professor's teaching, is a matter of great importance. The katathermometer is a large bulb spirit thermometer, which is warmed in hot water until the meniscus rises above 110 deg. F. It is then suspended in air, the time occupied in the meniscus falling from 110 to 90 deg. F. is simply noted, or the position of the falling meniscus is recorded accurately every half minute as it falls from 110 to 90 deg. F., and the readings plotted out as a curve. In the investigation of the ventilation of the House of Commons it has been shown that the rate of cooling at the foot level is 50 to 100 per cent. greater than at head level, which makes for discomfort and is scientifically wrong.

An action which was brought by Mr. John McLure Hamilton, an American artist residing at Kingston-on-Thames, against Mr. J. H. Beddington and others, with reference to the ownership of valuable panelling and other things which were in a house at St. John's Wood, occupied by the plaintiff, has attracted considerable notice in the daily Press, but there does not seem to us to be any very valuable information to be gained from it as to how far the articles in question were the property of the tenant or the landlord. Mr. Justice Shearman decided against the plaintiff on the ground that, whatever right he had had to the panelling, &c., he had forfeited by leaving them on the premises when he quitted. The only point of law, therefore, that is illustrated by the case is that a tenant's right to tenant's fixtures ceases at the end of his tenancy.

At the nineteenth annual convention of the Incorporated Municipal Electrical Association held last week



Drawn by W.F.Pocock. Engraved by James Davis.

WEST ELEVATION OF THE NEW HALL

built by the Worshipful Company of Leather Sellers.
in St. Helens Place, Bishopgate Street, London.
W. F. Pocock, Architect, 1821.

THE Leathersellers' Hall, in St. Helen's Place, Bishopsgate, E.C., was erected in 1815. Beneath it were the remains of the crypt of the Benedictine nunnery of St. Helen, founded between the years 1204 and 1216. The conventual dorter long served as the hall of the Company until it was pulled down at the beginning of the last century. The hall above illustrated has, in its turn, been demolished to make way for newer buildings.

at Birmingham the suggestion was made that the further development of electricity for the provision of cheap power and cheap transit depended upon nationalisation—whether by means of a Government department or a public board of management, such as the Port of London Authority, or a private company, subject to limitations as to dividends and prices to be charged for current supplied, is yet to be seen. Until some such scheme is brought into operation, we are told, it is useless to expect any marked reduction in the cost of producing and distributing electrical energy below that obtaining in the large power stations now operating in this country. It is only by tackling the problem boldly, by being prepared to supply current at prices much lower than are ruling at present, and recognising that for a few years there must necessarily be a deficit on the large initial expenditure incurred, that it will be possible to attract and develop the large volume of business that will be necessary to make such a scheme a financial success in the future.

In the discussion that has taken place with regard to the safety of St. Paul's Cathedral, considerable emphasis has been laid upon the vibration presumed to have been occasioned by modern heavy and fast motor traffic. It is, therefore, a relief to know from the observations made for the Home Office by the staff of the National Physical Laboratory that this element of danger to the Cathedral is very much less than had been suspected. The observations which have been made showed that during the daytime there were small vibrations of about one ten-thousandth of an inch in certains parts of the Cathedral. At night three fully-laden motor omnibuses, when driven past at the rate of six miles an hour, did not disturb the seismograph. When the speed was increased up to twelve miles an hour the vibration, though extremely small, was noticeable. The vibration in the Clock Tower at Westminster was found to be much greater than in the Cathedral.

The modern movement in favour of reducing the size of classrooms in the elementary school presumably in theory should affect the amount of superficial area per head, on which it has been the practice of the Education Department and the Board of Education to determine the size of classrooms. Therefore it is not surprising that in the House of Commons Mr. King asked the President of the Board of Education whether his attention has been drawn to the fact that a classroom for forty scholars, built on the rule of ten square feet per scholar, gives less space for the scholars than a classroom for sixty or eighty scholars built on the same rule, owing to the fact that the portion of the classroom required for teacher's desk, cupboards, blackboard, and other demonstration purposes is practically the same in either case; whether, in the new building rules now under consideration he will provide that any reduction in the size of a classroom owing to the reduction in the size of classes shall only take place in regard to that portion of the room which is occupied by the scholars; or whether, if the total floor space of the classroom is to be measured technically on the basis of square feet per child, he will provide that classrooms intended for not more than forty scholars shall be built on the basis of twelve square feet or more per child instead of ten square feet, so that scholars in small classes shall have as much space for their desks and gangways as scholars in larger classes, and that the space reserved for the teacher and furniture shall remain the same?

The answer to this by Mr. J. A. Pease was: I am aware of the facts mentioned in the first part of the question. In the preparation of the new edition of the Building Regulations, which I hope will shortly be issued, the point referred to has not been lost sight of, but, as at present advised, I do not think it will be necessary to prescribe twelve square feet for a class of forty scholars

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It is interesting to learn of the ingenious methods adopted by the Dean and Chapter of Lincoln Cathedral in restoring to quasi-usefulness the chapels of the Cathedral, and enlisting sympathy and contributions. About thirty or forty years ago two were brought into use. One of the two is at the extreme east end of the Cathedral, and has been used for celebrations of Holy Communion frequently, whilst the other, at the north-west end, has been in use daily for morning prayer. The next chapel to be made use of was the Fleming Chantry, shortly after the coming of the present Dean (Dr. Fry) four years ago. This is one of the three charming little chantry-chapels added to the Angel Choir by bishops of the diocese. The chapel began to be used for daily service for the workmen of the Cathedral, and has now been completely furnished and restored to use.

Recently attention has been paid to the chapels in the great or western transept. One of these, the Chapel of St. Edward, was anciently called the Chanters' Chapel, and belonged to members of the choir as an oratory. Last year, after complete restoration, it was re-dedicated by the Bishop, and is now again the place of prayer and union for members of the choir.

Another of the chapels is set apart as a Soldiers' Chapel, and at the present moment is being restored. This will receive all the memorials which are now in the Cathedral. It is expected that it will be reopened and rededicated in the presence of the officers, past and present, of the Lincolnshire Regiment, on October 11. The cost of the restoration is being borne, for the most part, by the members and friends of the regiment.

The Chapel of St. Hugh is situated in the extreme south-west corner, near the base of St. Hugh's Tower, and is one of the most beautiful features of the Cathedral. The Dean, who is president of the Bell Ringers' Association of the diocese, invited co-operation in the work of restoration, and the chapel—also known as the Ringers' Chapel—has now been perfectly restored, and is about to be re-dedicated.

The other restorations in progress, or contemplated, indicate that the Dean and Chapter have planned a thorough and constant work. For instance, at present the women of the diocese are working for the restoration of a Women's Chapel, and members of such societies as the Girls' Friendly Society and the Mothers' Union are co-operating eagerly for this purpose. It is understood that of the chapels still untouched one is to be assigned to fishermen and sailors of the Lincolnshire coast, one to foundrymen and workmen generally, one to farmers and village folk, and one to theological students.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

The final ordinary general meeting of the session of the Royal Institute was held at Conduit Street, W., on Monday last. Mr. Reginald Blomfield, R.A. (President), occupied the chair. After some formal introductory business had been done,

The President said they were met there that night to pay honour to one of the most distinguished of living French architects—Monsieur Pascal. To a certain extent he was afraid the ceremony must be like "Hamlet" without the Prince of Denmark, because owing to advanced age M. Pascal had felt unable to face the Channel in order to join them that evening. But M. Roux, secretary of the French Embassy, had very kindly attended in order to receive the gold medal and to read the address which M. Pascal had sent them. In a recent letter their *confrère* said that almost up to the last moment he had hoped to be able to reply to the kind invitation of his British colleagues by presenting himself in person to receive from the President's hands the gold medal awarded this year with such exaggerated approval of his long devotion to architecture—a ceremony both very moving and very honourable to himself. But, continued M. Pascal, it was only out of regard for the Institute and those who would be present at the meeting—which affects other interests as well as his own—that he did not want to expose them to any risk of disappointment. However, his doctor that morning could not assure him of his ability to undertake the journey. Therefore he could only send his profound regrets at being absent on such an occasion.

That letter, continued Mr. Blomfield, in its courtesy and delightful modesty was characteristic of the services which M. Pascal had rendered to architecture, and which had in point of fact established him in a first-rate place among the living architects of the world. His name was a household word amongst the architects of this country.

M. Jean Louis Pascal was born in Paris in 1837, and received his training at the Beaux-Arts and at the atelier of M. Questel, where he met their old friend Mr. R. Phené Spiers. Mr. Spiers was perhaps his only living English contemporary, and for the same reason as M. Pascal was unable to be present with them that evening. In 1866 M. Pascal won the Grand Prix de Rome, subsequently going to the Villa Medicis in Rome, where he remained till 1870. At the end of that time—*i.e.*, in 1871—he was appointed auditor of the Conseil Général des Bâtiments Civils and inspector of works under Lefuel at the Louvre and the Tuileries. This latter was a rather singular fact. It will be noticed that M. Pascal did not start serious work as an architect till he was something like thirty-three or thirty-four years of age. That was remarkable in view of the scanty and superficial training which many consider sufficient nowadays. It will also be noted that on his return from Rome as an ex-prizeman he got Government employment at once—that is to say, he got some regular employment which did not deprive him of his right to practise as a private architect. This was an important matter, and an example which our English Government might well follow in connection with the English Prix de Rome. It was quite a different thing to absorbing all our brilliant young men and swallowing them up in the net of the Office of Works. For the essential thing was that these young men should find some such employment as that, but not to sink their individuality in the official net.

M. Pascal started his atelier in 1872, and from that time his career was assured. He was appointed judge or assessor in various competitions, became Vice-President of the Conseil Général des Bâtiments Civils, President of the jury of the Beaux-Arts, and finally a Commander in the Legion of Honour, inspector-general of civil buildings, and Officier de l'Instruction Publique. In addition, Mr. Pascal was carrying on a good private practice. His work is to be found in all parts of France, and includes such splendid buildings as the splendid addition, only recently completed, to the Bibliothèque Nationale. In spite of all this, M. Pascal had found time for literary work—a side of architecture which was inclined to be neglected. When one gets an architect of the attainments of M. Pascal to write the result becomes extremely valuable to the architects of all countries. Amongst other works, he edited Blondel's "Architecture française" with M. Guadet.

In all M. Pascal's work there is distinction, fastidious scholarship, and the simplicity of manner which can only come from innate genius for the art, guided by profound knowledge. He is a many-sided man, and has done good work as a writer and a teacher. One might well wonder how many fine architects—French, English, Scotch, American, and others—owe their training to M. Pascal during the forty years which have elapsed since he opened his office. Those who have been able to visit that fine addition which Sir J. J. Burnet has made to the British Museum would feel that the master's teaching has not been in vain. (Incidentally the members of the Institute must offer their sincere congratulations to Sir J. J. Burnet for the well-deserved honour announced in the papers that morning.)

He had been studying the list of the Royal Gold Medallists, and found that in the sixty odd years since this was established no less than ten of M. Pascal's compatriots have been inscribed on the Institute's list of honour. It was to be hoped that their colleagues in France would consider the honour offered M. Pascal to be also offered as a renewed mark of their appreciation for the architecture of that great country. At the recent exhibition of British work in Paris they found that the work of Englishmen received a most generous appreciation from their French *confrères*. And they in this country hoped the French architects would return the visit next year. He felt quite certain their visitors would find the same feelings of sympathy and admiration among Englishmen.

In nominating M. Pascal for the gold medal presented annually by the King, the Royal Institute not only

honoured the most worthy representative of the splendid school of French architecture, but it expressed in the most emphatic way possible to it their admiration for the high personal and artistic qualities that have won for M. Pascal the great place he occupies in the admiration of all architects.

Mr. Blomfield then presented the Royal gold medal to M. Roux as the representative of M. Pascal.

The following reply in French by Monsieur J. L. Pascal was then read by Monsieur Roux:—

Ladies, Mr. President, Gentlemen,—Although in your invitation you kindly gave me permission to speak in my native tongue, it would have given me even greater pleasure had I been able to express my deep gratitude in the English language.

I should have liked on this eventful day of a long life, not unacquainted with anxieties and disappointment, to have shown my joy in a manner which could have been fully understood by all. It is for this reason I cannot resist the temptation of saying how grateful I am to my English colleagues for having considered me worthy of such honour, although my sole claim is to be found in a life of hard endeavour in furthering the interests of our beloved art. My first visit to London was a very long time back—in 1851. I was a young lad, and for the first time your gracious hospitality—the effects of which I can feel to this day—took the form of an intimate family life with boys and girls, all of whom have disappeared, to whom we promised ourselves to return in Paris that which had touched me so profoundly at that first absence from my country.

Although my recollections of that time still include vivid first impressions of visits to Windsor, Hampton Court, Oxford and Cambridge, to the Royal palaces of London, to its parks, museums, and theatres, there was scarcely any question of architecture, yet a budding taste for literature and art made me appreciate and fix in my mind works then recently completed of the Houses of Parliament, whose author, Sir Charles Barry, and his son I saw.

The names of the distinguished architects to whom I had the honour of being introduced during subsequent holidays when I came back to London might place me in the light of one risen from the dead and talking about the people of another world. But it is well to mention these recollections, because they produced in me an attitude of mind which has never left me, for I received a strong impression at an age when the emotions are deep and consequently lasting. Thus it was given to me to see from afar and on a great eminence such artists as Ashpitel, Owen Jones, Digby Wyatt, Alfred Stevens, Donaldson, Cockerell, and Penrose; to listen to some of them four years later, in 1855, on the occasion of the great Paris Exhibition, whilst they were fraternising with French architects such as Gilbert, Hittorf, Lefuel, Baltard, Lebas, Duc, Labrouste, and later, in 1867, with Questel, Garnier, and other celebrities.

Subsequently it was through a spirit of curiosity and a love of information as to what was being produced abroad in the art which I had embraced, and a study of the widely differing methods of study among the various nations, together with the spirit such study evoked, that I was kept awake to the achievements of English architecture.

Some thirty years ago a commission from the French Government caused me to visit in the North of Scotland those buildings devoted to the teaching of medicine at Edinburgh (where a school had just been finished), at Aberdeen, and as far as Inverness, and I came away with various published designs. Just at this time the erection of the Faculté de Médecine at Bordeaux was begun, a building which I have but now completed by the addition of the Faculté de Pharmacie—doubtless my final work.

It was at this period I had opportunities of meeting and talking with Messrs. Aitchison, Alfred Waterhouse, Sir Arthur Blomfield, and Pugin, and a long time afterwards it was as a result of the appeal made to us that I joined with Mr. Norman Shaw, at Antwerp, in assessing the first part of the Phoebe Hearst competition for San Francisco—a connection which later won me a warm reception in the home of that great architect. Later events carried me still further—as far as California, in the company of Mr. Shaw's substitute, in the same train and same compartment, both going and returning with your past and much-regretted President, Mr. John Belcher and his charming wife.

I should scarcely include in my list of recollections the names of Sir Aston Webb and some others if it were not for my desire to recall the ever sympathetic dealings I have had with your compatriots. Friendship bids me specially mention the name of Phené Spiers, my old fellow-student in Paris—Spiers, whose designs and beautiful water-colours have kept him in your esteem, and whose love of knowledge has never left him. I myself have been working during a somewhat similar period—i.e., since 1872, the date when I succeeded M. Questel, my master, and Phené Spiers' also.

So I have been kept in touch with English and Scotch affairs—not to mention American, for their Institute of Architects has shown me their sympathy by the recent presentation of a medal corresponding to that of the Royal Institute.

You are aware that in France the practice and teaching of our art are never divorced, and all our professors are practising architects. Consequently I, as an old master, was able to see amongst those who figured recently in the beautiful English exhibition in Paris the names of old pupils such as Burnet, whose kindness to his master is unwearying, together with several other Scotchmen and Englishmen who have kept up the tradition. I could also mention pupils who have won the English Prix de Rome, and so been faithful to the same tradition.

If I seem to have dwelt too long on this side of my work it is because in assigning to me the high honour which you have done under the auspices of his Majesty the King—an honour of which I desire to show my deep appreciation—the services which I have been able to render to education have been referred to in a very special manner.

Nevertheless, it would be a contradiction of the truth to accord that feature of my career too prominent a place. So I trust you will permit me to extend the scope of [illegible] reply and to pay homage to the practical side of our noble profession. For having been the collaborator with Questel, Lefuel, and, above all, with Garnier during five years I have been led to prefer practice to theory. Incidentally I must congratulate you on the high level at which practice seems to have been maintained in your country—higher than with us.

You living in the home of liberty would gain nothing, however much other differently situated countries might do, by cramping the exercise of the profession. At any cost it ought to be left free, leaving to the future the task of separating the good from the bad.

Heavy responsibilities must be ours, from the time of the initial conception, based upon schemes which are often incomplete and contradictory, until the realisation of the minutest detail is reached, never betraying the confidence reposed in us, but ever seeking the best way of transforming into a work of art that work of utility which has been confided to us.

In national monuments, whether the apotheosis of war or peace, in our palaces, our museums, in ecclesiastical buildings, the heaviest responsibility must weigh upon the architect, even though it may seem to disappear at the moment of the inauguration or other official ceremony. And everywhere it is necessary for us, without losing the feeling for the whole or for the general aspect, to recognise it in the smallest detail. That feeling of responsibility covers all that is done by our collaborators, from those whose position is nearest to our own to the humblest participator in the work which bears our signature.

Your great nation, in conferring this medal on foreigners, reveal the high conception which animates you. In asking his Majesty to sanction your recommendation you have imparted to this medal such a value that it is impossible for me to imagine how, in attributing to myself the moral responsibility, you have come to seek me out in my modest sphere in order to give me rank amongst so many artists, both native and foreign, whose names figure in our modern roll of fame.

Having but a short time to live, I scarcely know how to bear the homage done me in view of the height of the illusion you have as to my past. There is no longer a future ahead of me, and I can only show myself deeply appreciative of the trouble you have kindly taken in order to place me in such distinguished company, and to thank you from the depth of my heart.

Sir J. J. Burnet, in rising to move a vote of thanks to M. Roux for attending in order to receive the gold medal was warmly received. He said he would like to state how keenly M. Pascal regretted that the state of his health and the responsibilities of his practice rendered it impossible for him to be with them that evening. Only last week M. Pascal wrote to him saying he had decided to come. But the letter had evidently been sent off without consulting his doctor, as two days later he wrote stating he was not permitted to make the journey. Mr. Blomfield had told them of the work of M. Pascal and the reason why the Institute submitted his name as worthy to receive the medal with which his Majesty so graciously associates himself. There was scarcely one country in Europe, in the East or in the West, in Canada or in the United States, in which there is not a pupil of M. Pascal either practising architecture or working as a professor of architecture or of technical training. It would thus be readily understood why the members of the R.I.B.A. felt they were honouring themselves in honouring him. The Atelier Pascal was no recently established studio. Started under M. Delapin in 1800 (who remained there for twenty-five years). it has continued under the guidance of such men as Blouet, Duban, Gilbert, and Questel, till in 1872 M. Pascal, one of Questel's pupils, became patron. Six times his pupils were logists (competitors for the Grand Prix), twice they were second, and finally in 1888 they gained the prize itself. Working with Garnier, the distinguished architect of the Opera House in Paris, he still found time to enter competitions, and in 1872 his design took first place for the reconstruction of the Hôtel de Ville; in 1874 he was awarded second place for the church of the Sacré Cœur at Montmartre; finally in 1876 his design for the Faculté de Médicine at Bordeaux was accepted. M. Pascal was now engaged on its completion. The latter building, together with the extension of the National Library of France, will remain monuments of that largeness of heart, wide sympathy, and indefatigable energy which have won for him the admiration and affection of his colleagues, clients, craftsmen, and pupils. It was those qualities which made M. Pascal's work no mere buildings, but in mass as well as in detail eloquent of the close interest he took in his client's needs. His sympathy with the characteristics of each craft and his respect for the individuality of each of his pupils was remarkable. But he (the speaker), like M. Roux, was only in that room to fill a place. Had Mr. Phené Spiers, known to everyone present as late Professor of Architecture at the Royal Academy, and so affectionately referred to in M. Pascal's message, been able to be there he would have spoken better than anyone could about his comrade in the studio of M. Questel. Mr. Spiers knew M. Pascal intimately, and it was a matter of sincere regret his health would not permit his attending. Had M. Pascal been able to be with them there were many of his pupils who would have been there to welcome him. It was pleasant to know what they did that night had the heartfelt approval of so many men working both without and within the fold of the Institute.

COMPETITION NEWS.

Chester.—The Corporation have accepted the award of Mr. Patrick Abercrombie, M.A., as assessor in the competition for working-class dwellings. The premiums have been allotted as follows: (1) Messrs. Dod & Sons, Liverpool; (2) Mr. John S. Hardie, Egremont, Cheshire; and (3) Messrs. Ireland & Hanscomb, Ealing, W. The entire scheme provides for about 130 dwellings on the Corporation's Buddicom Estate, Saltney. It is proposed to commence with fifty houses. The designs will be on view at the Town Hall until 2 p.m. to-morrow.

Deptford.—At a meeting last week of the Borough Council it was agreed to adopt a recommendation by the Baths and Washhouses and Libraries Committee that the design for the baths and washhouses and branch library proposed to be erected in Evelyn Street should be obtained by an architectural competition.

Glasgow.—The plan of Messrs. Frank Burnet & Boston has been accepted in open competition for a tramway shelter and convenience proposed to be erected by the Corporation.

Kilsyth.—The Town Council of Kilsyth propose to erect three tenements of dwelling-houses or twelve semi-detached one-storey cottages. Architects are invited to submit competitive plans by July 9, in terms of specification and conditions of offer to be obtained from the burgh surveyor.

London.—Sir William Emerson, PP.R.I.B.A., the assessor in connection with the competitive designs for the architectural treatment of the new St. Paul's Bridge across the Thames, has submitted his award as follows: First premium, £300, Mr. G. Washington Browne, R.S.A., 24 Charlotte Square, Edinburgh. Second premium, £200, Mr. Charles E. Barry, Parliament Mansions, Victoria Street, Westminster. Third premium, £100, Mr. Edward Ralph Douglas Selway, A.R.I.B.A., 8a Foukenoy Road, Bedford Hill, S.W.

ILLUSTRATIONS.

NOS. 1, 3 AND 5 BUCKINGHAM PALACE ROAD.

This building has been erected under the superintendence of Mr. G. Thrale Jell, A.R.I.B.A., and from his designs, with shops on the ground floor and small hotel over. The whole of the front is in Portland stone. The drawing from which our illustration is taken is now exhibited at the Royal Academy.

COLOMENDY, CAERLEON.

This house, which is situated about five and a half miles outside of Newport, is beyond Caerleon, in the valley of the Usk. Terraces have been formed on the hill-side, and a drive laid out by Messrs. Cheal & Sons. The stone for the house has been quarried on the property, and is a purple-reddish sandstone, which makes very good rubble, but cannot be worked as a free stone. Red Wilderness stone has therefore been supplied by the United Stone Firms for the dressings. The roofs are being covered with rustic slates from the Galchen quarry, laid by Messrs. Hesford, of Birmingham. The general contractors are Messrs. Perry & Co., of Bow, and Mr. Griffin is the foreman. The work is about six weeks short of completion. Messrs. Morrison & Ingram have supplied the sanitary fittings, and Messrs. James Gibbons the hardware. The water supply and electric-light work is in the hands of Messrs. Tredegars, of Victoria Street. Messrs. Hope & Sons, of Birmingham, have supplied the metal casements. Grates by Messrs. Robbins, of Dudley, the Nautilus Fire Company, and range, &c., by the Coalbrookdale Company; stable mangers, &c., Messrs. Musgrave.

There is a hall in two storeys with a staircase carried up in gallery form, with timber framing inside. This occupies the centre of the south front, and is a special feature of the house. The design has been somewhat modified from the original, and the bay windows of this front are now wood framed with parapets in cast lead, the panels of which Messrs. Beaven, of Newport, have cast in sand from the architect's detail drawings. The house is in two levels to suit the conditions of the ground. It is being erected for Mr. R. C. Talbot Leybourne, of Newport, Mon., according to the designs of Mr. Arthur T. Bolton, F.R.I.B.A.

MIDLAND ADELPHI HOTEL, LIVERPOOL.

Our illustration shows the second block which completes the rebuilding of the Midland Railway Company's Adelphi Hotel at Liverpool from the designs of Mr. R. Frank Atkinson, F.R.I.B.A. A number of views of the portion of the hotel first erected appeared in *The Architect* of May 3 and 10, 1912.

THE CATHEDRAL OF BARI, ITALY.

It is at Bari we must look for the source of the peculiar distinction of the oldest and most original churches of the province of Apulia. Bari gave the keynote to other cities, and especial attention ought therefore to be given to its cathedral, as well as to the famous churches of St. Nicholas and of St. Gregory. The cathedral was begun between 1024 and 1028, during the lifetime of Bishop Bisanzio, and was continued until 1086, when the greater part of the building was finished; but this ancient cathedral does not correspond to that of the present day, which was substantially reconstructed, the work being begun between 1170 and 1178 and pursued until 1245. Amongst the specially notable features of the cathedral of Bari are the lion portal, the rose window, the cupola, and the campanile.

A friend of the Architects' Benevolent Society, who desires to remain anonymous, and who has for many years been interested in the work of the Society, has just presented a donation of £1,000 to the funds.

THE CALL OF BELGIUM.

A SPRING TOUR.

By J. A. Randolph.

Even to one who is already sated with the architectural beauties of Belgium, which abound in all its large towns and most of its lesser ones, there is in the countless large and small villages a something, apart from the simple, homely, and quiet existence of their inhabitants, which appeals to the visitor, and which seems, indeed, to emphasise it rather than otherwise.

Of late years the country to the north of the Meuse and of the northern French frontier has taken on itself a remarkable change of aspect, for for great stretches and crowding on each other are copses, woods, and forests of young trees of about 25 to 30 feet high, and when we passed through them in the train in the latter half of April the grass at their feet was practically invisible for the blue-bells. Here and there we saw a few straggling patches of primroses, and from time to time a distant steeple and a few red-tiled houses and farms, at a long walk from the nearest station, would show themselves. In many cases, till after we left Namur northwards, at the end of the month, the towers and spires were of a certain degree of interest, architecturally; afterwards interestingness was very absent in the village churches.

Our journey in Belgium this spring began, after a couple of days devoted to re-visiting Bailleul and Arras, after a more than thirty years' absence, to inspecting the two main attractions of Béthune—the belfry and the church. It is somewhat remarkable that the churches of the three towns mentioned are all of them dedicated to St. Vaast. The Bailleul one has suffered strange disfigurement in the worst possible taste, but the tower stands well. Béthune's church is very fine, with richly ribbed and bossed vaulting on extremely slender columns, and with narrow aisles, hardly more than passages, the lowness of the vaulting and the great width of the nave and choir giving the structure a *crushed* air. The approaches to the church are hard to find, as it is so hemmed in on every side, at the back of the Grand' Place, by small houses in winding streets.

BETHUNE.—BELFRY.

That of Arras is on a big scale, with a western approach of forty-eight steps of great width. It dates from 1755, but was only consecrated in 1833. Its predecessor was a beautiful fourteenth-century abbey church, and was destroyed at the Revolution.

There is another interesting church—St. John's—with Flamboyant windows, but the curious tower to the west front is rather severe Renaissance.

A grotesque modern one, with a slender stone steeple obviously intended to prepare visitors for the Antwerp-like belfry of the Hôtel de Ville, is in the street from the station to the heart of the town. To all appearances the building is not now used.

As we approached Arras from Béthune viâ Lens the sky gradually assumed a threatening aspect, much of the cloudiness being due to the neighbouring country being in the mining district of North France; at half-past six on the evening of our arrival it was absolutely impossible to take a photo of the Town Hall—the light was so bad.

Next morning, as we 'bussed to the station, it was raining—quiet, fine rain—and this lasted till we cleared Douai station, about an hour later, and it was brilliant overhead again before we got to Lille.

At Lille there remain some fine Renaissance town gates, with portions of old walls; one of these was close to the train as we approached the station, but the greatest architectural attraction in this quasi-modern town is the great Gothic church of St. Maurice, close to the station, with its nave and four aisles, all of equal height, ending in five magnificent and lofty apses, with two-light traceried windows in the outside ones and three-light in the three other apses. Round the bases of these apses, in a small triangular enclosure, are five modern-Gothic chapels, the centre one being the largest, with a high roof to it. They are all very stiff in their detail compared to the old work in the church.

There is another Gothic church in the town—St. Catherine's—with Gothic, high-roofed apse flanked by a quaint flat-end Renaissance aisle on the south side unlighted at its eastern end.

The seventeenth-century Exchange (Bourse), with richly carved wall-space round the windows, and its roof embellished with eleven picturesque large louvres, and dominated in the centre by an elegant octagonal turret, will also repay examination.

On our way to Renaix for the night we passed one church which, in such an architecturally poor district as we passed through, and in a village to boot, was a welcome surprise. It is on very bold lines, with fine roofing, and as it stands high on rising ground at a short half-mile from the line, it at once commands attention, and we have made a note of it for our next Belgian tour—viz., Dottignies—as well as of a few others on our route.

The country immediately surrounding Renaix is hilly and well wooded and most picturesque, but the best—the "surprise"—view is from the station of Marie-Louise, on the Audenaerde, or northern, side, when, on emerging from a tunnel, the train makes a semi-circle into Renaix through a wooded valley, and the towers of the town rise up in the distance above the trees.

The town, to which boulevards from the station square have of recent years been added and planted as a partial screen to the railway line, possesses two old churches, one now a timber store, but the octagonal tower still a feature in the street, and the other, the main parish church, of fine proportions, with Flamboyant crocketted gables to the aisle bays, and good tracery in all the windows. This church has a well-preserved Romanesque crypt of much interest.

The secularised church had some good lines interiorly, but it has been sadly mauled inside. A new church, with red-brick and blue-limestone exterior, poor in style, has a splendid stone interior, and on the postcards it looks like a genuine old building. This new church has the same dedication as the desecrated one, *pro formâ*, as it serves the old one's parish. No cards of the interior of the main church are obtainable for love or money.

The municipal buildings, on the square that stands some distance down a side street from the main thoroughfare, are unpretentious.

Our route thence lay viâ Bassilly to Ath (which we had visited twice before), and to St. Ghislain viâ Chièvres, with its small Gothic church and rather Rhenish spire. The church has undergone considerable renovation, and the present steeple has not been built so lofty as the original one, the alteration having been effected when the tower was restored some years ago. Still, the effect is very good. In the church is a beautiful old lectern, and there are various other mediæval objets d'art.

The church of St. Ghislain, in the town of that name, has a rather unusual treatment of the west front, the slender tower and spire not being exactly in the middle, and several string-courses running across the front above the entrance doors—there are no porches—and the small staircase turret alongside the tower rises from the aisle's west wall, which is topped by one of the string-courses. The church stands flush with the Square, and in a corner of it, at the entrance to the street leading to the station.

There used to be a celebrated abbey there, founded by St. Ghislain himself. The building now used as an Orange-house is practically all that remains.

On our visit to this neighbourhood last year we had planned to go to Jurbise (Junction) for Soignies by the short cut viâ Baudour, but were advised it would involve a wait of three hours at St. Ghislain for the particular train, and that we should go viâ Mons, which we did and had done before. This time, however, we arranged our time-table so as not to be baulked of a bit of line new to us—the short cut—and we are only sorry we did not do so before, for the scenery is perfect, and Baudour village on one side of the line faces a copse which extends practically up to Jurbise, some ten minutes further on, the copse beginning also on the village side just beyond the station.

In due course we reached Soignies for the night, and next morning found us at the Early Romanesque church of St. Vincent, with its two curious towers, one at the west end and the other at the centre. The interior is severely simple, the arches being unchamfered and the windows small; a black and white marble screen, of the Renaissance period, though incongruous, is rather fine, but it evidently displeases the parishioners, who wish for its removal—at least to the west end for use as an interior porch with organ gallery over. Thus it would be as good as invisible, and the full-length view of the interior would be unobstructed. Of the two evils, this would be decidedly choosing the lesser one, though we do not approve of such a step, because it would be falsifying the history of the church and obliterating traces of a phase through which it passed—not unscathed—in the seventeenth century.

The church was formerly abbatial, the monastery having been founded in about 650. Nothing of the abbey buildings remains, but there is a charming cemetery chapel, the nave of which is older than St. Vincent's, and its apsed choir is Gothic. It is now the local museum. The Gothic-shaped windows in the sides used to be round-headed, but in the work of repairs some years ago their return to the Romanesque shape was wisely tabooed. These windows rise above the walls into picturesque little louvre gables. The old timber roofing is very fine.

From Soignies, through wonderful country and the Bois de Rœulx, we made for Rœulx, a small town at a quarter of a mile of open country from the station, and possessing a beautiful park with handsome entrance gates and stone columns and parts of stone boundary walls to the park. Turning left there, down the hill, we discovered the church, a most successful modern specimen of fourteenth-century Gothic, in stone, with central octagonal tower (not unlike that of Termonde before its spire was added last year) and nave and aisles of even height, and three apses. It is only thirty-five years old, and the card-views would certainly convey the idea that the edifice was really of the fourteenth century. The interior is impressive.

From Rœulx we went on to Binche, changing at the next station south of La Louvière (where we had time for a small meal), and on arrival at Binche were met by the Curé and shown over the old part of this interesting little town, with its almost complete circle of walls, round which, at close and regular intervals, the martello towers give one the idea that the place was once of considerable military strength. The modern town has grown up on the slopes outside the walls, and the houses and shops there are of a very good class, especially from the fine station to some way down the hill.

LOBBES.—ABBEY BUILDINGS.

The Curé also showed us over the old church, which stands picturesquely at the corner of a park, and its treasury and wonderful reliquaries and old vestments—of which we shall hope to deal at greater length ere long, as several of the items are of special interest to Englishmen from their associations.

We also went over the Town Hall, on the Square beyond the church, which has been well restored, its three present Gothic arches having been found blocked up and plastered over. The graceful turret is Renaissance, and possesses a tiny carillon.

The cemetery chapel, close to the church, has carved Gothic wainscotting and several sculptures, and a few fine memorial slabs.

On our way from Binche to Thuin, our next sleeping-place, through forests carpeted with bluebells, we passed the large church of Bonne Espérance—a building of considerable archæological and architectural interest, but cannot as yet say whether it belonged to the famous abbey that used to be there, and which was destroyed by the French in 1794 at the same time as Aulne Abbey, and under the same General.

LOBBES.—ABBEY BUILDINGS.

A winding route through hilly and wooded country partly atoned for absence of any architectural objects of interest until we suddenly emerged into a wide expanse of more open country, when, from round the bend we were negotiating, our eyes fell upon a wonderful sight. It was the great Early Romanesque church of Lobbes, on the slope of the hill-side, and it dominated the town below.

Our photo shows the striking view from the station platform, but only gives a faint idea of the magnificent effect.

Alongside the line at the station, with a narrow roadway separating the track from the town, there stand two large remnants of the abbey buildings—one a wing now tenanted by nuns and used as a school; the other, almost adjoining, is a picturesque structure with a pavilion and part of a cloister, but of course not used now in connection with the abbey. In a few minutes our train passed almost touching the hill on which the church towered over us, and branched off to the right on its way to Thuin, Sud, and Chimay, a long way further afield.

Thuin stands most picturesquely on the river Sambre, between the lines of railway of Thuin Nord and Sud, the Nord being on the Charleroi line, and the old town is approached by a very steep, zigzagging road close to the edge of the valley; the road is only protected at the lower and upper ends by buildings. The Grand' Place and effective Renaissance belfry, with arcading below, are right at the top of this hill. At the bottom of the hill, close to the station, is a small church, partly Gothic, with charming mediæval carved panels inserted in the outer walls, and an arched passage under the choir.

While having a well-earned meal at our hotel opposite, some local view-cards were fetched from a neighbouring shop, as also a set of the ruins of Aulne Abbey, about five miles off, on the Charleroi line.

Next morning early found us again at Lobbes, this time for inspecting the church and photographing it. It is approached from a steep hill by a rough, wide stone stairway, close to the top of which is the gabled Galilee porch that projects from the foot of the west tower. The long aisle walls are very plain, with small round headed windows as clerestory, like at Soignies, and the small gabled transepts are nearly at the eastern end of the edifice.

The interior, of great simplicity, has square stone columns from the moulded band, at the top of which spring unchamfered arches. There are no capitals.

The nave, transepts, and choir floors are on different levels, separated by flights of stone steps.

Under the floor of the transepts is a small crypt, in which the abbots were buried, and there are several carved slabs, one a very perfect Renaissance one in high relief of an abbot in pontificals. The remainder of the contents of the crypt are in a dilapidated condition and smothered in dust and cobwebs, and the surface of the walls in much need of repair in several places.

From Lobbes we went viâ Thuin Nord and the quaintly named halt "Jambe de bois" to Charleroi and Nivelles, passing on our right the roofless but otherwise almost complete abbey of Aulne, at about a quarter of a mile from the line, in a meadow-like situation surrounded by trees and backed by high ground.

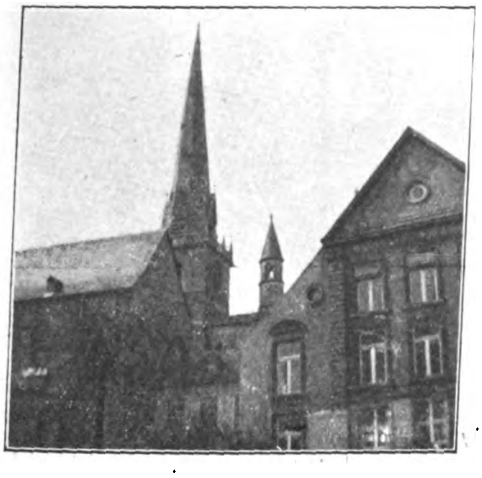
The ruins are on a grand scale, and the shell of the church shows that building to have been of cathedral-like size. The rich tracery of its windows is practically complete. It may be doubted whether we have anything of the kind so vast in our own country, and certainly we know of none on this side of the water where the various buildings of a monastery are all left standing, complete excepting for their roofs; and, as to our old abbey churches, even the most complete of them almost falls short of Aulne's both in length, height, and width—as also of that of Villers.

It was destroyed at the same time as that of Bonne Espérance, near Binche.

Landelies, the second station from Thuin Nord, is the one to alight at for visiting the ruins.

Nivelles' great church of St. Gertrude is Romanesque, with two sets of transepts to its lengthy nave and a flat east end, but little can be seen of the pre-Gothic exterior, barring the roofs, owing to its being built up against by shops. The interior has been plastered over and whitewashed, in Renaissance times, and disfigured in many ways, but the original main features of the east end still show to a certain extent. There are two pulpits, the more elaborate one being much of the same type as those found in Bruges, Ghent, Brussels, and, in fact, in many large towns of the country.

The fine Romanesque cloister was "restored" on three sides *to one pattern* in 1846, but the fourth side, owing to lack of funds, was fortunately left untouched, and shows the original arrangement of twin shafts, with their varied and graceful capitals. The great west front is Romanesque, with a lofty, slender Gothic tower and spire rising out of a screen, or straight wall, flanked by small staircase turrets on the northern one of which is a figure of "Jehan de Nivelles," a uniformed soldier who used to strike the hours on a bell, but who is now on strike! There is a mediæval song about him in the patois of the district, and the words and music are reproduced on a set of postcards, a different part on each, for the verses are numerous—and quaint.



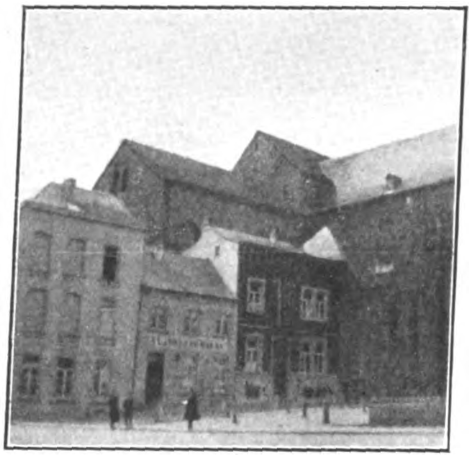
NIVELLES.—NORTH TRANSEPT AND SPIRE.

From Nivelles, viâ Braine-l'Alleud, we went to Clabecq and back, through undulating country lighted up by the late afternoon sun, and passed the fairly extensive remains of a mediæval château, whence the particular village there gets its name. Its square grey tower, near the railway, would grace any architect's sketch-book.

As the day following our arrival at Nivelles was a Sunday, we did not take a very long journey, and put up on the Sunday night at Villers, in the Hôtel des Ruines, formerly the old abbey mill, the restaurant of which is a vast apartment with oak beams and ceiling, the whole building being lighted by electricity.

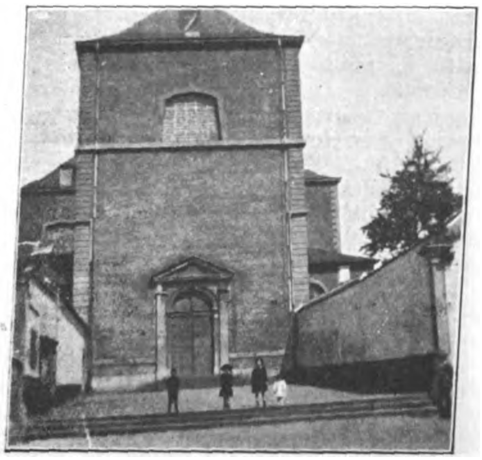
Much repair work and clearing away of rubbish and shrubbery within the abbey buildings has been going on of late years, and some valuable architectural discoveries have been made, the work having been under the guidance of the late archæologist and historian of the abbey, Mr. Charles Licot, and continued according to his drawings.

Villers is, of course, more ruinous than Aulne, its Renaissance fronting, over original walls, having been hewn away at the Reformation—not a very great loss artistically, judging from an old print we have a reproduction of. Much of the old walls' remains is merely the core and reminds one, in parts, of the chapter-house at Reading. Still, the refectory and brewhouse gables are very fine and fairly well preserved, as also the greater half of the nobly proportioned church, which had two west towers, the shells of which remain.



NIVELLES.—CHOIR AND NORTH TRANSEPT.

Half-past six next morning saw us making for the station for an early train to Gembloux, where we arrived at a different station to that at which we were held up last year on our way to Landen and Louvain from Fleurus, and directed our steps down the fine long stretch of road parallel with the line to the narrow street leading to the irregular and hilly little town, passing on the way a large outbuilding with bold roof studded with louvres, and standing obliquely at a few feet from the high wall that temporarily blocked out the view. On the way down the road, between two houses, is an impressive view of the group of abbey buildings and the church and towers. They are all Renaissance now, of red brick with white-stone dressings, but were formerly Gothic. There is a curious and unusual feature in the abbey church, its windows being built with *sloping sides*, and narrower at their top than at their sills. This gives one a sensation of standing close under them and seeing them in sharp perspective.



GEMBLOUX.—ABBEY CHURCH.

The parish-church tower stands isolated to the west of the abbey, its church having been destroyed, and the parishioners now worship in the abbey one.

The Royal National Horticultural Institution is now housed in the buildings and grounds of the monastery.

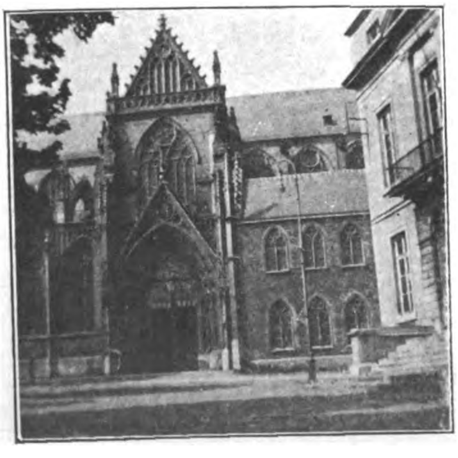
From Gembloux back to Geneppe, where we had to change for Namur, and it was, even in second class, a change for the worse, the rolling-stock being very primitive and shaky and noisy and in a state of advanced decrepitude, the permanent way also, apparently, in an inferior condition, and in need of thorough overhauling.

GEMBLOUX.—ABBEY ENTRANCE TO GARDENS.

At Namur we were given four minutes by schedule time in which to fight our way along the arrival platform and down to and up from the subway and along another lengthy platform to our train for Huy; but fortunately for everyone concerned in catching it, we had a few minutes' grace To add to the confusion on reaching that platform, there were two trains filling up, one on either side of it, ready to start, but ours was first under weigh, and through that beautiful bit of the Meuse scenery that extends northwards to Liège and southwards to Dinant and beyond.

Huy once reached, at the Nord station, at a different end of the town to that of our former visit's arrival point, we, by dint of inquiries, at length found ourselves ensconced at our hotel on the Quai Dautrebande, close to the great Collégiale, and at a few paces from the interesting mediæval Pontia, as the bridge is locally called. The sunset effects on the river banks that evening, with a cloudless sky, and next morning's slight mistiness, as seen from the hotel, were things of beauty to be remembered. In the early sunny morning the interior of the vast and soaring Gothic church, with its twin-light 90-feet apse windows and its dark grey columns, arches, and vault-ribs and richly painted vaulting was most impressive. It is a building whose interior, seen for the first time, quite overwhelms one

From the south side it is approached through a richly carved archway—the Portail de Bethléhem—and thence by a narrow passage alongside the lofty aisle which, from there, completely hides the huge nave from view, and at length the west entrance of the aisle is reached, alongside the west tower. This and the corresponding doorway on the other side are the only entrances, the north aisle's being the principal one, as low down on the west face of the tower is a fine rose window, locally termed the Rondia.



TONGRES.—SOUTH TRANSEPT.

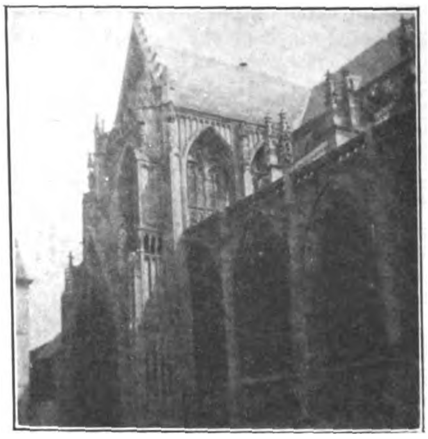
At the east end two slender, lofty towers flank the choir, hemmed in between it and the aisle apses. This superb east end abuts on to the roadway. A striking view, from either east or west, can be had of the north side, as there is a small open space there, extending to the west front, where the quai ends.

The town is dominated by the great citadel on the top of a rocky height which rises from quite close to the west tower of the Collégiale—hence no roadway proper on the south side of the church.

The journey back to Namur, for reaching Tirlemont by a line new to us, was done in a broiling sunshine, and the heavily upholstered "second" was consequently almost unbearable, especially when we were shunted into a siding for nearly ten minutes at Marche-les-Dames (where was formerly a community of about a hundred noble ladies whose husbands had gone to the Crusades) to let the express from Liège pass by.

About the only objects of interest on the long and tedious run to Tirlemont were probably the smallest church in Belgium, at Hédenge, the first station beyond Ramillies, and situated quite close to it, and Jodoigne's two churches. Near Jodoigne was formerly the Abbey de la Ramée, of which there are still some important and interesting remains.

The view of the two great churches of Tirlemont, as seen from the train as it runs into the station, is most striking. Notre Dame du Lac, which is a naveless edifice, and St. Germain's, with enormous transepts and bold Norman west tower and shallow Norman transepts supporting it for at least two-thirds of its height, face one, and seem to stand on the roofs of the houses at about half a mile off. Notre Dame du Lac lies rather low really, but its beautiful Gothic steeple surmounting an exquisite fourteenth-century triple porch is of fine proportions, and towers high above the rich choir and transepts. There is plenty of room on the Grand' Place, in the corner of which it stands, for a lengthy nave with aisles, which, if built, would necessitate the re-erection of the porch at its new west end, and the tower would then assume the place intended for it by its architect as a central one, and the great church could then be reckoned among the giants of Belgium. There seems a wave of restoration and reconstruction passing over several parts of the country, and we must confess we hope it will eventually reach this town and ensure for it the completion of what is now but a truncated church—but a beautiful one at that, as far as it goes.

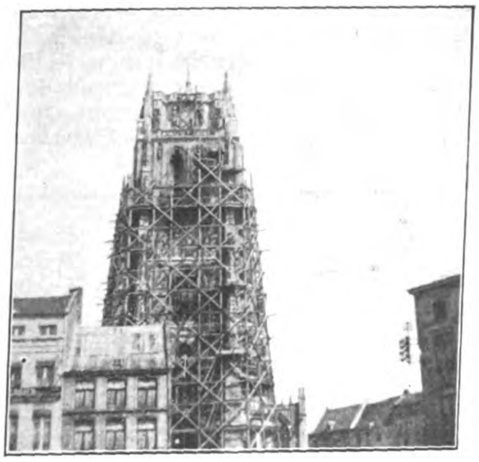


TONGRES.—NORTH TRANSEPT AND AISLE.

St. Germain's nave and transepts are on a vast scale, and this is accentuated by the narrower and lower choir with its elegant three-light apse windows. The nave columns are massive and round, without capitals, and the arches richly moulded. The upper stage of the tower is Renaissance, but a very close copy of the Romanesque part beneath, the difference only being discernible by a close scrutiny of the little shafts and their capitals. The roofing —it can hardly be called a spire—is irregular and picturesque, and goes very effectively with the rest.

Tongres was our next venture—after many years—and we found the enormous Gothic tower nearly covered with scaffolding, and in the working-yard below we could see how necessary the restoration had become, as large pieces of elaborate carving—finials, crockets, pinnacles, panelling, and so forth—had perished to a remarkable degree.

The church was closed, but we know it from a previous visit as among the best specimens of geometrical Gothic in the country, both sides being practically the same in design excepting for the porches, the southern one of which is the more elaborate one of the two.



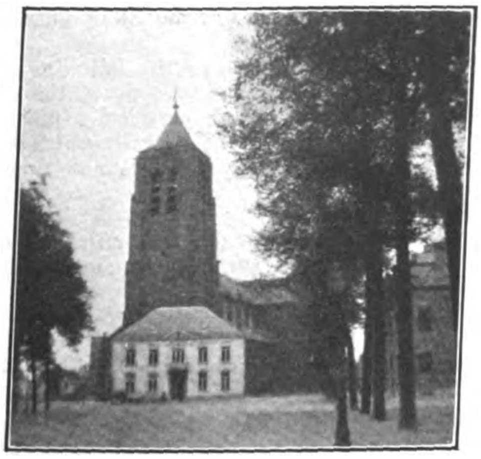
TONGRES.—TOWER (Under Repair).

A Romanesque round turret to a plain Gothic erection alongside the south choir aisle is interesting. The building is the treasury, probably one of the richest in Belgium, and the great cloister adjoining can vie with what Nivelles had before its so-called restoration.

There are some remains of Roman town walls outside the town, and an old gateway that will repay a visit.

On returning to Hasselt, our centre for two outings besides Tongres, we visited Cortenbosch (a short run from there on the St. Trond line), with fine, though not large, Renaissance church. The singularly graceful steeple is at its east end, and in the church are ten confessionals in carved oak, inset in elaborate panelling, of the richest Renaissance period; they were originally in the celebrated abbey church of Averbode, not very far away, and are emphatically the finest specimens of Renaissance carving and design in Belgium.

Moll, as will be seen by the photograph, possesses an early imposing tower of red brick with white stone bands. The church, of good proportions, is however spoiled by well-designed tracery in the large windows atrociously executed and with atrocious detail. If the same designs were properly carried out in stone, and the wretched whitewash and the poor fittings removed from the fine interior, it would be a very interesting building. The lines are very good, and in one of the cards we secured of it it appears worthy to rank with some of the best North Belgian ones near the Dutch Frontier.



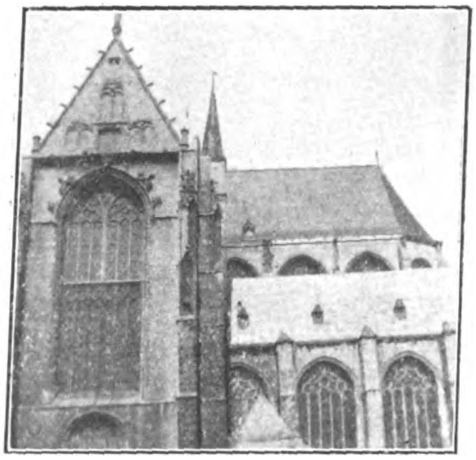
MOLL.—TOWER FROM S.-W. AND TOWN HALL.

We passed Gheel, well known favourably for the two splendid fourteenth-century churches, also Herenthals, previously visited, and stopped for the night at Lierre, where one of the series of late-Gothic Belgian screens always fascinates. It is in the noble church of St. Gommaere—a long way into the town—and the north transept of that is still under scaffolding, as it was a year ago, but as we were unable to obtain a card of the glorious choir's exterior, with its beautiful windows and chapels and flying buttresses, we had set our heart on securing a photographic record—unfortunately a poor one owing to the bad light—of its magnificent detail.

Close by the Renaissance Town Hall, which has, however, an elegant fourteenth-century turret at one end, are two chapels, the window of one of which has graceful tracery, and is far more interesting than the larger one near the bridge.

The Post Office is just out of the Grand' Place, in a narrow street at the upper end, and is located in an admirably restored stone-fronted building of very Brugian type.

At Malines, where we had an hour or two, the convenient and ubiquitous electric tram brought us rapidly to the Grand' Place, as we wished to photograph the picturesque old Halles before its intended restoration and considerable alteration. At the far corner a huge building in the style of the Gothic part of the Ghent Town Hall, and with slender pinnacles at intervals up the gable, which towers high above the quieter-type Halles adjoining, will house the Post Office. The new structure is stated to be a reproduction, from an old print, of a building originally at that spot—we believe the Justice de Paix, or its mediæval equivalent. Naturally, too, we plied our camera on the splendid view, across the Place, of St. Rombaut's, whose spire it is proposed to add after an old print.



MALINES.—NOTRE DAME AU DELA DE LA DYLE.

Returning stationwards, a visit to the superb Gothic Notre Dame au delà de la Dyle could not be dispensed with, though we had been in it before, and its interior seemed to us as grand as ever. It is built on an enormous scale, with gigantic transepts, and the tracery varies in each window. Not so the cathedral, monotonously the same all round as to tracery and wall panelling, and the transepts matching each other almost stone for stone. That is why it pleases and impresses less than Notre Dame au delà de la Dyle, and even than the interesting and lofty, but plainer, one of St. Jean.

From Malines we made for Puers, on the St. Nicolas line, where a handsome Renaissance tower celebrated, we were told locally, for its beauty, adorns a plain Renaissance nave; but more beautiful still, and, of course, older, we found the Gothic transept and interesting Gothic apsed chancel, and as these are not on cards, only the tower and nave, we were determined on securing photographs of the Gothic part, from which we have had cards done. Attention of the gamins was, to our relief, diverted from us to a couple of swarthy young Japs, who were trying at the street window of the Post Office to make their requirements known to and understood by an official of that useful institution.

At St. Nicolas, on the great square, believed to be the largest in Belgium, are the church of St. Nicolas, with central tower and spire, and, at a few paces away, a fine Renaissance group of houses, in one of which is the Museum, and in another the Post Office. These are all that the town boasts by way of antiquities. The Town Hall, facing them, is a pleasing Gothic structure designed by a former pupil of the Ghent School of St. Luke, and which was, with some variations, copied at Dixmude when new municipal buildings were required, as the original drawing, done in the Middle Ages, was, when searched for, discovered to have been stolen, but it has never been found again.

Next day we returned to Malines, after visiting a small village—Stekene—a little beyond St. Gilles, to the north of St. Nicolas, where we photographed the picturesque Gothic church, which has a central octagonal tower and low spire and gabled aisles. Last year we passed it on our way from St. Gilles to Bassevelde and Bruges, making a note of it for a subsequent visit. On our way to it this year we had a sensational surprise sprung on us at Tamines, near St. Nicolas, and that town has been added to our growing list of videnda for our next visit to Belgium.

From Malines our route lay past charming Londerzeel and one or two other good churches, and Alost, and by Gand (St. Pierre) to Thielt for the night. We had to change at Alost, and on reaching our platform, which had a line on each side of it, two trains soon ran in, but the superior officials even each gave different reports as to which was ours, and through their ignorance and stupidity we narrowly escaped not reaching our intended destination that night.

STEKENE.—(WAES.)

Next morning to Roulers, where, on arrival, we deposited our now almost uncarryable valise in the cloak-room and took a train on in a few minutes to Poperinghe, beyond Ypres, to try and discover the third grand Gothic church, having seen the other two last year. These three great churches are all built in "white" brick. We at last discovered, and photographed, the object of our quest, at the far end of the town. Its splendid tower and spire are well seen in the picture.

THIELT.—BELFRY.

An hour at Ypres, on business, intervened between that and our return to Roulers for the night, close to the disappointing and poor rebuilt modern Gothic church, which is tacked on to a superb late-Gothic tower of noble height.

We woke to a wild morning, with racing white clouds overhead, and knew we were in for a lively crossing to Dover. Our route to Calais lay viâ Dixmude (close to which is Eessen, with a huge brick tower in the Flemish-Gothic style and its old church of massive proportions), and on the way to Furnes we passed a small church at a bare hundred yards from the station, with its west tower leaning phenomenally out of plumb towards the north and west. Strangely enough, about a mile away is a considerably larger church, with good west spire, and serving the village to which that station is attached, the steeple of which could be seen to be palpably leaning to the east.

Furnes was passed in a driving rain squall, and after the Customs' examination at the frontier in a poor station among the sand-hills, and a quarter of an hour lost at Rosendael station owing to badly planned shunting operations, we reached Dunkerque with only a few minutes to spare, instead of nearly half an hour, in which to change into the Calais train.

POPERINGHE.—NOTRE DAME.

There was only one noticeable building on that final bit of Continental travel—the beautiful large Gothic church of Bourbourg, with apses to choir and aisles and bold transepts, and ornate central lantern-tower. Part of the church dates from the twelfth century.

It was a capital wind up on the trip of things new to us—*old* Calais we have known for nearly thirty years—and it is on our list for our next tour to Belgium—also Dunkerque, which we have not visited since 1880—and Eessen, above mentioned.

That night we had *English* comforts, being posted at the Falstaff, Canterbury, outside the West Gate—a hotel that is 511 years old, and contains an oak-panelled dining-room on the first floor, with rectangular bay window with leaded panes. The Chequers is considerably older, and one of the oldest in England.

We noticed, in our rambles on the following morning, that the restoration of the west porch of the cathedral is now in hand, the rest being practically finished—and Bell Harry tower is now clear of its casing of poles.

The great gateway into the Close is now under treatment and scaffolding.

We reached home viâ Maidstone, Chislehurst, and Charing Cross, having covered 1,083 miles in seventeen days, of which 654 were in Belgium, mostly over new ground.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS' DINNER.

The annual dinner of the Royal Institute of British Architects was held on the 17th inst. at the Hôtel Cecil. Mr. Reginald Blomfield, R.A., presided, and among the distinguished company present were the Lord Mayor and the Sheriffs, Viscount Esher, Lord Redesdale, Mr. J. Pease, M.P. (President of the Board of Education), Sir Alfred Keogh, Sir Amherst Selby-Bigge, Sir Aston Webb, R.A., Sir Thomas Brock, R.A., Sir William Richmond, R.A., Sir Laurence Gomme (clerk of the London County Council), Very Rev. William Ralph Inge (Dean of St. Paul's), Mr. Frank Dicksee, R.A., Mr. Thomas Hardy, Sir Arthur Evans, Sir George Frampton, R.A., Sir William Emerson, Sir Ernest George, R.A., Mr. Walter Lawrence, jun. (President of the London Master Builders' Association), Mr. W. Thomas (President of the National Federation of

Building Trades' Employers), Mr. Bertram MacKennal, R.A., Sir Thomas Barlow, Mr. H. V. Lanchester (Vice-President), Mr. F. G. Rice (President of the Institute of Builders), Mr. R. Anning Bell, A.R.A., Mr. Percy P. Tubbs (President of the Society of Architects), Dr. J. J. Burnet, Mr. Basil Champneys, Professor Gerald Moira, Sir James Linton, R.A., Mr. Maurice Webb (President of the Architectural Association), Mr. George Hubbard (Vice-President), Mr. David Murray, R.A., Mr. H. Chatfeild Clarke (President of the Surveyors' Institution), Mr. A. W. S. Cross (Vice-President), Mr. W. R. Colton, A.R.A., Mr. C. R. Peers, and Mr. J. A. Gotch.

After the loyal toasts had been honoured,

The Right Hon. Joseph Pease, P.C., M.P. (President of H.M. Board of Education) proposed "Architecture and the Sister Arts." Art was, he said, associated with primitive man, for he devoted himself not only to oratory and music, but also to carving on the sides of the cave and on the bones he had gnawed. Of all the arts, architecture must be the oldest, for the roofs of those caves must have been properly supported. He believed it must be to the great advantage of the nation—if not absolutely essential—that everyone should endeavour, as far as his opportunities occur in life, to do something to cultivate his taste. Nearly every householder has in the course of his life to choose his own house, if not to build one. Every such opportunity should do something in the cultivation of taste, even if only by making a man think of the beauties of his home and surroundings. He himself, in his official position, was indebted to their President for the way he had helped the Department both at South Kensington School of Art and at the Victoria and Albert Museum. Personally he felt he was becoming daily more familiar with the work of training the young. Under the guidance of the officials he really felt he was getting to learn something in regard to the importance of following certain definite principles. He felt a good deal of sympathy with architects, for he knew how many years it must take to become a successful architect; the long study, the close application necessary before the individual becomes fully qualified. He knew the care with which they had to go through a specification; the tact and patience they had to show their clients, who expected all sorts of things, amongst others that their money would go much further than it possibly could. The clients keep on explaining their demands to the architect, and he smiles and does his best. But all this was not very helpful to genius, and did not inspire him to do good work. He as President of the Board of Education wanted the Government to build schools worthy of the art which the nation ought to support. Yet at the same time the Department, which had to look to the pockets of the ratepayer, checked him. Financial considerations alone prevented him from beautifying the schools of the country as he would like. Perhaps the greatest amount of sympathy which ought to go out to the architect arose from the fact that often there was a little account of extras which absorbed the money which had been put on one side for other purposes. He also sympathised with them in that they had to exercise more self-restraint than those engaged in the other arts. He rejoiced in the fact that wherever there was progress in art, that progress to a certain extent remained permanent. He, in his turn, claimed the sympathy of all architects. He was responsible to Parliament for the Royal School of Art, and had also to take a somewhat paternal interest in the various art schools of the country. There was a great problem before him, for, as all interested were aware, the system of training in this country had not reached perfection. It was not, however, an exact science, and so it was difficult for him, not being an expert, to make sure he was following the right lines in the application of art to industry. He did not presume to interfere in the teaching of the fine arts in the higher spheres. If there had been any progress, and he believed there had, that forward impulse was in a very large degree due to the disinterested help of the various painters, sculptors, and architects who have given their time and knowledge not only to the production of works in which they were interested, but also to the training of the young so that the genius of the nation might have a fair and full scope in the years to come. In this country they possessed, perhaps, more beautiful homes than are possessed in any other country in the world. Not only were they proud of the rural homes and ancient houses of England, but to-day they might take some pride in connection with the great buildings surrounding them in the great city of London. He believed the arts in this country would continue to flourish. And he would sit down under the protection of their motto, "Usui Civium Decori Urbium."

Sir T. Brock, K.C.B., R.A., replying for "Sculpture," said the cordial way in which the toast had been received was especially gratifying to him from the fact that the opportunities of sculpture had from the earliest time been in association with architecture. Indeed, the two had always been so closely allied that each might be regarded as the half of the other. One of the primary purposes of sculpture was the adornment of architecture. Sculpture had never been higher than at the present day, and that was apparently due to the sympathy shown by members of the architectural profession. Their indebtedness was further added to on that account for, as a result, considerable public interest had been aroused. There was a certain section of the community—he supposed there must always be such in every country—which professed to regard the fine arts as of no practical value, and therefore unnecessary to the prosperity of the nation. Such a view was short-sighted. The fundamental purpose of art must be to elevate and refine, and it must consequently lead to the added well-being of the nation. Art had a real social value. Beauty of form and colour may assist in shaping men's minds.

Mr. Basil Champneys, in replying for "Architecture," said the toast naturally suggested some consideration of the relations between them. It has been pretty constantly claimed on behalf of architecture, and not seldom conceded, that she takes precedence of sculpture and painting—a claim the grounds of which are fairly obvious. A primary and most important function of the sister arts has been, since the early days of civilisation, to adorn the building, especially the temple, for art has for the most part flourished in connection with religion. On the well-known principle of "first catching your hare," the structure must take precedence of the decoration in order of time and of importance—the primary conception must be architectural, and in controlling the consensus of the arts to a harmonious result the architectural motive may justly claim to continue paramount; the original idea must be extended to the decorative accessories. Most people at some time or other have pondered over a notion of the ideal building—one in which the architect, the sculptor, and the painter have worked in perfect harmony of thought to a common end, almost as though a single artistic soul had been divided between three bodies. There have indeed been in the past some few great humanists who could combine in themselves this triple function; but since their day the tendency has been towards specialisation and sub-division, and it is possible that in the future still further differentiation may be established. At any rate at the present time, as our age does not seem likely to produce another Michel Angelo or Leonardo, who possibly might be objects of suspicion to the general public if they did appear, the only condition in which some approach to the ideal may be attained is the sympathetic co-operation in which the architect as the originator of the *idée mère* must almost inevitably take a leading and controlling part. There is, however, another point of view from which the relative positions seem likely to be reversed. It is impossible to maintain at the present moment, whatever has been held in the past, that architecture can have taken precedence in time—have come into existence before painting and sculpture. To make such a claim would be to fly in the face of archæology, and probably also to flout the anthropologist. The former shows us that an excellent graphic art portraying animal life is proved by discoveries in the South of France and elsewhere to have been evolved at a time when men dwelt in caves, and when the architectural impulse could be exercised only in the choice and possible improvement of habitations made by nature. Probably no less proficiency was reached in sculpture by these same cave dwellers, though the actual evidence in surviving examples is more difficult to obtain. But even in the absence of evidence we might assume that this art was not wholly neglected by them. The childhood of the world is somewhat similar to that of the individual. We can scarcely imagine that with the material ready to hand and probably superabundant leisure these prehistoric ancestors of ours refrained from the pastime of making mud pies; nor can we very well imagine that, having the keen instinct of portrayal shown in their scratchings on horn or bone, they stopped short of fashioning the mud into the semblance of human or animal form. Probably the paucity of record of their sculpture is due to want of skill in baking, and owing to this much that was worth preserving possibly on more than archæological grounds has returned to the dust from which it was formed. So much we may learn from the archæologist—the anthropologist may suggest to us a still earlier origin of the graphic arts. From him we might learn that the earliest painting, the germ of pictorial art, is to be found in the application of pigment to the human form with a view to improving on nature—a consideration which suggests that the original motive of clothing was not so much warmth or decency—the latter a point on which very divergent views seem to have prevailed—as decoration. To this position, indeed, certain modern fashions seem to show a tendency to revert. The same authority might establish that the very earliest evidence of the sculptural idea is to be found in the endeavour to improve the human form by remodelling the living clay according to ideals with which it is not easy for us to sympathise, but which must nevertheless be classed as in essence sculptural. And all this took place possibly before even the desire for a habitation had suggested any approach to an architectural idea. So that I think we architects must concede that from at least one point of view our art must be content to take a back seat. However, on an occasion such as this all questions of precedence, of comparative importance, of origin must give way as being of no more than academic interest. It is more to the purpose to express a confident hope that the three arts will work in constantly increasing harmony.

Mr. Frank Dicksee, R.A., in replying for "Painting," said his art was showing a curious modern development which most sane people regretted. He referred to Post-impressionism, Cubism, Futurism, and all those other cults of which he did not profess to understand very much. He thought the Minister of Education ought to watch them. They were born of a desire to obtain the wages of labour without the sweat, the spirit of getting ninepence for fourpence. This might account for the mysterious and diseased art productions that now afforded food for jaded appetites. Perhaps it was allied to another spirit in a certain section of the public which was becoming rather weary of well-doing and needed stimulating by highly spiced, unwholesome food. Those cults afforded the necessary food for such sickly minds. Therefore they ought to be watched with a certain amount of care. Meanwhile an enormous number of our beautiful pictures were fast crossing the Atlantic and finding homes in that country where wealth was vested in a few persons who have such a command of money that it is of no consequence to them whether they pay £5, £50, or £500. He would suggest that there might be an export duty on all works of art which left these shores. One nobleman had sold a landscape for £100 000. If a duty of 7 per cent. was levied, and it was put on one side for the National Gallery, it would make a very useful addition to the annual grant of the Government.

Mr. Paul Waterhouse, F.R.I.B.A., in proposing the health of "The Lord Mayor, the Sheriffs, and the Corporation of the City of London," said there probably had been put in the hands of the Lord Mayor when he was a serious young man a certain book—perhaps the most ancient volume in the world—called Euclid. Some of the things contained in the introductory axioms were hard to believe; some were so obvious as to be more easily assented to by instinct than by the official method of proof. The toast he had to propose was of the latter kind. In fact, the suggestion that they should drink to the prosperity of the Lord Mayor and his ancient office needed no verbal commendation to such a gathering of architects. For architects were, by virtue of their art, entitled to appreciate whatever had the graces of antiquity, dignity and undiminished usefulness. The Mayoralty of London, with its seven centuries of continuity, was no ivy-clad ruin, no shattered relic of Transitional architecture, nor even an historic monument. The office was older than Magna Charta, far older than Crecy, older than the House of Commons. The House of Lords was founded long after a Lord Mayor of London was in office. Indeed, the Lord Mayor seemed to advance towards them out of a halo of mythology arm in arm with the Tower of London. There was a kind of personal reason why he should be allowed to propose the toast that night. Once upon a time in one chilly autumn the excellent idea came to him of being born in Manchester; it came to his mind a year sooner than it came to the present Lord Mayor. It was quite possible they met while journeying abroad in respective perambulators; over the Lord Mayor's was a golden halo, over his would probably be a blunt pair of German silver dividers. He could only wish he could call himself the Lord Mayor's humble servant; but unfortunately he was separated from his kingdom by the beggarly half of a fourteen-inch wall. Perhaps the Lord Mayor might think one day of making a foray westward. If so they in his office, as living just west of the City boundary, would come down, if not with halters round their necks, at least with the stoutest office string. In conclusion, Mr. Waterhouse paid a tribute to Sir T. Vansittart Bowater's personal success during his year of office, now half expired. One of their debts to him was the hospitality he had extended to the London Society, in which many of those present were interested. Another was the confident hope, belief, and faith that nothing very wrong could go with St. Paul's so long as there was the London Corporation. He would ask them to remember the 725 years behind the Lord Mayor, for the past was their most precious possession. Some say "Look forward, do not look back"; some think the past is a mere spring-board for the future. But a happy past was a great possession. The present was an opportunity for providing posterity with an unblemished and beautiful past. He therefore called upon the company to drink not merely to the 725 years of the Mayoralty, not merely to the right hon. gentleman who was adding so successfully his link to the long chain of honour, but also to the future, to the years to come, to the happy continuance of that great magistracy for at least as many years as would round off its complete millennium.

The Lord Mayor, who was heartily received, said Mr. Waterhouse had referred to the antiquity of the grand old Corporation of the City of London. They felt that although they were the most ancient Corporation in England, and possibly in the world, still at the present moment they were also the most up to date. They were so up to date they felt it absolutely necessary from time to time to consult with the President of the Royal Institute of British Architects whenever they wished to alter or beautify the City. On many occasions they had sought the excellent advice of their ancient Institute. At the present time, in connection with the proposed bridge across the Thames, the Corporation were seeking their assistance. He knew of the good work the Institute was doing, and of the association between them and the London Society, to which he had been able to give hospitality. So long as they worked amicably to stop any vandalism on their monuments—which many seem to think are too old and not half so ornamental as they might be—and so long as they had the assistance of the Royal Institute, there was no fear of any vandalism. Both the City and Greater London were immensely indebted for the magnificent buildings which are being put up. Sir Vansittart Bowater then went on to say he could only conclude it was through the extreme modesty of the President that the toast of his health was not on the list. It was very gratifying for him to have the privilege of supplying the omission. Mr. Blomfield was accepted as a very able architect and as a very able author who tried to teach those who did not know as much as he did how to follow in his footsteps.

Mr. Reginald Blomfield, R.A., after acknowledging the cordiality of the toast, said that two years ago the whole question of Registration was referred back to the R.I.B.A. Council with the intimation that it was desirable the whole matter should be gone into. A very representative committee was appointed under the presidency of Mr. John Slater, and he was helped by good men. They conducted a most careful investigation, and found two outstanding facts—viz., first, that the majority of those practising architecture in this country had made up their minds to have Registration in one form or another; and secondly, that the chance of any Bill of the slightest value being placed on the Statute Book was negative. As a result the committee have produced that scheme or policy of Registration by Charter which he was glad to say had now received the approval of the members of the Royal Institute. It was not to be expected that a large movement of that sort would be accepted without long consideration. Where criticism was not merely obstructive or destructive, the more of it the better; because, human nature being what it is, it seemed quite impossible to satisfy everybody. His own feeling was that a scheme which is accepted by everybody could not be worth objecting to, because all the vital points had been eliminated. The Royal Institute was, he believed, the one body in this country capable of dealing with a problem of the magnitude of Registration. The many distinguished members and the services which the Institute has rendered the public during many years justifies the opinion that they could deal with the problem in a wise, logical, and statesmanlike manner. It was two years since he had been elected President; the past year had been one of considerable anxiety and considerable difficulty. He was about to hand over his charge, and he hoped they would not find he had failed in the trust. If he had done so it was his own fault entirely, because he had been most nobly supported. Two years ago the Council was new and untried. But no Past-President had ever enjoyed a better Council than he had had. There was no need for him to say anything to commend his successor to them. Mr. Ernest Newton was an accomplished architect and a man who never spared himself. He felt quite certain the new Council would give Mr. Newton the same loyal support which had been extended to him during the past two years.

Mr. Walter Cave, F.R.I.B.A., proposed "Our Guests."

The Very Rev. William Ralph Inge, D.D. (Dean of St. Paul's), said he could only suppose he had been chosen to reply as representing the most conspicuous building in London. Certainly he was able to shelter his modesty under the shadow of Wren's dome—that dome now in the charge of two most distinguished members of their body. The Royal Institute had done much to transform their rather sombre Metropolis into one of the finest cities of the world.

During the evening a musical programme was gone through by Miss Amy Simpson, Miss Helen Blain, Mr. Frank Webster, and Mr. William Emerson.

THE TIMBER ROT FUNGUS.—I.

THE SPORES AND HOW THEY WORK.

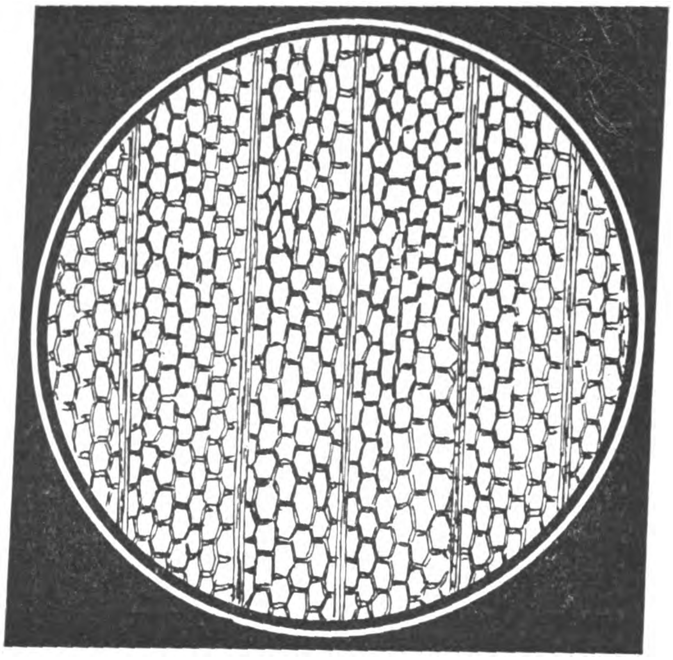
Written and Illustrated by James Scott.

EVEN at the present time, when scientific men are spreading broadcast information concerning peculiar facts affecting commercial goods, people are to be found who will not credit many of their assertions. The instance with which I am at present dealing furnishes a notable example of such phenomena. We see the ends of stacked timber; of railway ties or sleepers; the tops of wooden posts, telegraph and telephone poles, *and other exposed fixtures* disfigured (or decorated?) by the presence of small yellowish or brownish curiously shaped fungi, which would be classed as toadstools by "the man in the field," although they have no resemblance to "stools" as have the mushrooms. They are like small shells stuck upright from the ends of the timber. To tell a man bluntly that the funny little things have been responsible for invisible damage inside the log or plank for some distance, and that they will ultimately reduce the wood to a mere mass of rotten substance is not quite fair, because it leaves his doubt uncleared. Details must be given, otherwise there will always be excuse for disbelieving mere statements.

To understand the matter properly the compound (i.e., the most powerful) microscope must be used during an investigation into the problem. In No. 1 is shown a cross-section of a piece of pine. The meshes represent cellular fibres of the kind depicted larger in No. 4 (next chapter). That is to say, they are the openings of hollow fibres which are several times longer than they are wide, and terminate in a point at each end. These fibres lie in between one another, and constitute the bulk of heartwood, known also as duramen. The fibres average in length about one-twenty-fifth of an inch, and the grain of the wood is due to the manner of their disposal. When a log, beam, or plank is cut crosswise—i.e., across the grain—these tiny openings are exposed, though not *disclosed*, owing to their minuteness.

It is a feature of the fibres of all coniferous wood (which form the chief victims of the fungus to be described) that some of their sides are pierced with pores in cup-shaped depressions. The pits, as they are called, look like tiny rows of rings, as can be understood by referring to No. 4 (next chapter)

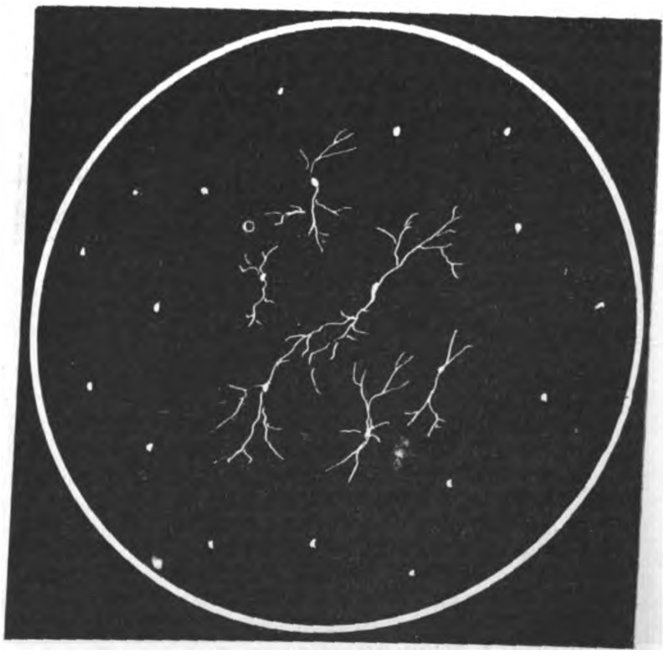
Sapwood (known also as alburnum), while being similar in structure to the heartwood for the main part, is associated with the more porous, globular-celled, soft cambrium, outside which the cork or bark grows. The only important difference between the fibrous cells of sapwood and heartwood is that the first contain the most moisture, crystalline solutions and "raw" material, whereas the second are drier, harder, owing to the deposition of resins, &c., and are practically "dead." Actually "dead" timber is, strange to say, more perfect than "living" wood. The lumberman, sawmill worker, and so on distinguish these conditions by the names green and seasoned.



No. 1.—The original size of the above circle is about that of a small pinhole. It is here greatly magnified, and shows a thin cross slice of pine (deal, wood. The meshes indicate the openings of severed tubes (see No. 5).

Crystals often get deposited in these fibrous cells, and are always capable of being redissolved by water, acid or alkaline solutions, &c. As I will show later on, they help to provide the fungus with nutriment, by the suction or abstraction of which the wood is slowly—or maybe rapidly—decomposed.

Turning now from the wood to the fungus, I must refer readers to Nos. 2 and 3. These are viewed on a dark ground, so that they may be better observed. In the first figure we see half a dozen spores of the fungus *Lenzites sepiaria*. For purposes of understanding the spores may be regarded as the seeds of the fungus. Botanically considered, there is a great contrast between a spore and a seed, because the latter contains an embryo, whereas the former does not.



No. 2.—The original size of the above circle is about that of a small pinhole. It is here greatly magnified, and shows twenty spores of timber rot fungus. Six of the spores have sprouted.

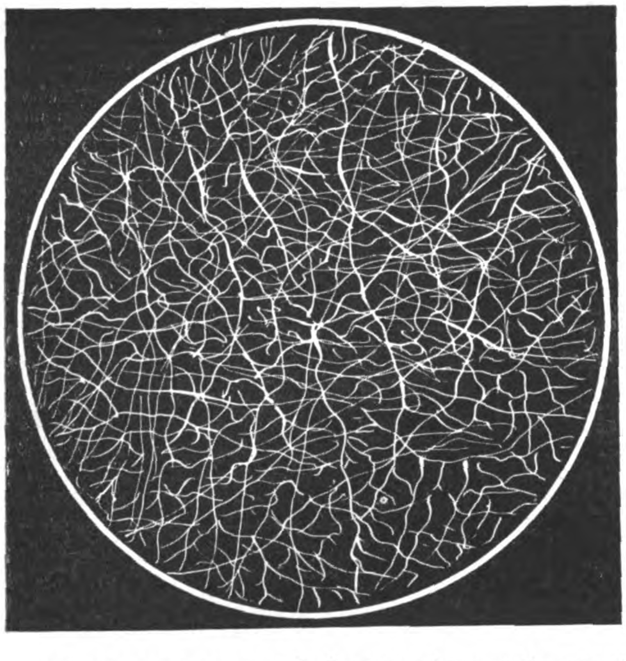
The spore is like a minute glass bead, except that it is entirely closed up. It will last for months or years in a dry condition, gradually losing its vitality meantime. Should it, however, fall on to suitable moist material, it at once begins to sprout at one or both ends, and the protrusions branch and re-branch until a sort of webbing or filamentous mass is formed. This is known as a *mycelium*—plural, *mycelia*.

Now, you must imagine that the contents of No. 3 are growing among those of No. 1. Suppose we cut out and lay No. 3 over No. 1. The fungus threads are then in approximate comparison with the cells, in and out of which they travel. Because the fibres are laid longitudinally to comprise the grain, the fungus threads find it easier to travel along the log, post, or plank than across it. This tendency accounts for the fact that the ripened results of the fungus (described in the next chapter) appear principally on the ends of timber.

Most of the fungi which appears as brackets, lobes, lumps, or knobs on trees and timber emanate from *mycelia*, or filamentous masses similar to those already described; but of course each species has its own characteristic behaviour and structural details, which render it distinguishable from others when it is examined by a trained microscopist.

Very few people know that fine, separately invisible threads extend from the bases of the curious brackets, &c., deep down into the wood, so that when the bark is stripped off these injurious threads still remain in the timber.

On wood which is boldly exposed the matured fungi (*Lenzites sepiaria*) may frequently be seen in dense clusters, or as separate objects, standing up like a lot of ribbed shells which seldom exceed two inches in length—or shall I say height? The younger specimens may be mere blobs of papsy matter. Animals may eat, or knock off, these objects, or they may be removed by boys and men out of mere curiosity, in which cases the owner of the wood may not know that they had ever existed. The damage inside the timber will go on just the same, however.



No. 3.—The twenty spores of No. 2 are here shown, on the same scale of magnification, germinated into a dense webbing. It is this webbing which is responsible for the timber rot. It feeds in and on the cells of No. 1.

It often happens that one has to search for these fungi. I have found many of them on the ends of beams which supported a plank bridge across a ditch. The structure was plainly going to wreck and ruin, not on account of rain or the ditch, but because of the fungus, about which the landowner and farmer probably knew nothing.

It should be understood that this fungus does not exist, except very rarely, on growing trees, so that it is not a parasite. It is found exclusively on *timber*, and is in consequence called a saprophyte—that is, it feeds solely on "dead" matter.

As the fungus begins usually in season cracks, it concerns the present reader very intimately.

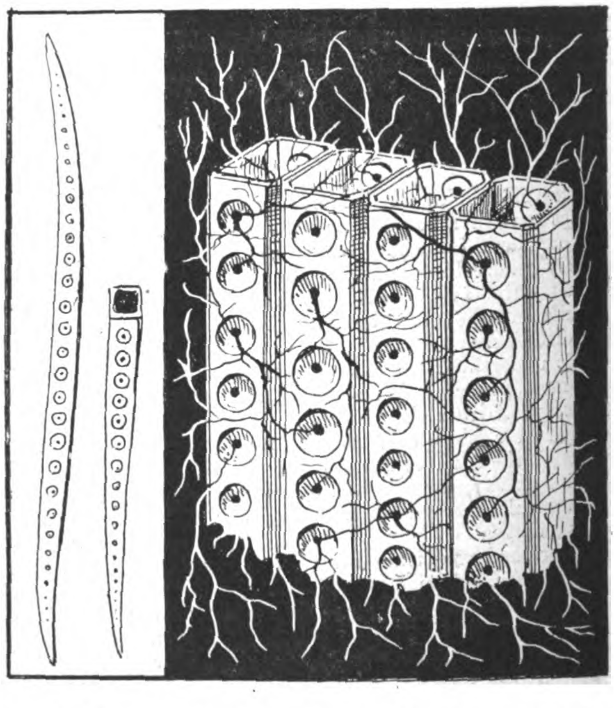
While the fungus is capable of growing in and on any kind of timber, it seems to have a striking preference for coniferous wood, which it attacks with great vigour. It has been but little studied, although it is, and always was, one of the commonest and most destructive fungi. In some countries it is the chief cause of *timber* disease.

Responsible computations have been made to the effect that one-quarter of the total damage done to timber can be traced directly to this fungus. In America alone the cost of its ravages yearly exceeds $8,000,000 (eight million dollars). The value of the timber ruined in the United States of America during 1908 was $1,000,000,000 (a thousand million dollars), and of this huge loss three-quarters consisted of coniferous wood attacked by *Lenzites sepiaria*.

The names by which this fungus has been known among scientists have been many. Besides being called *Lenzites sepiaria* it has received the following christenings: *Agaricus sepiarius* (1786), given by its discoverer, Von Wulfen; *Merulius sepiarius*; *Daedalia sepiaria*; *Lenzites sæparia*; and *Gleophyllum sæpiarium*. This remarkable multiplicity is nothing uncommon in science, and of course is likely to lead to much confusion. When, however, the reader comes across any of the above names he will know that it refers to the fungus of which I am writing.

II.—THE THREADS AND FRUIT.

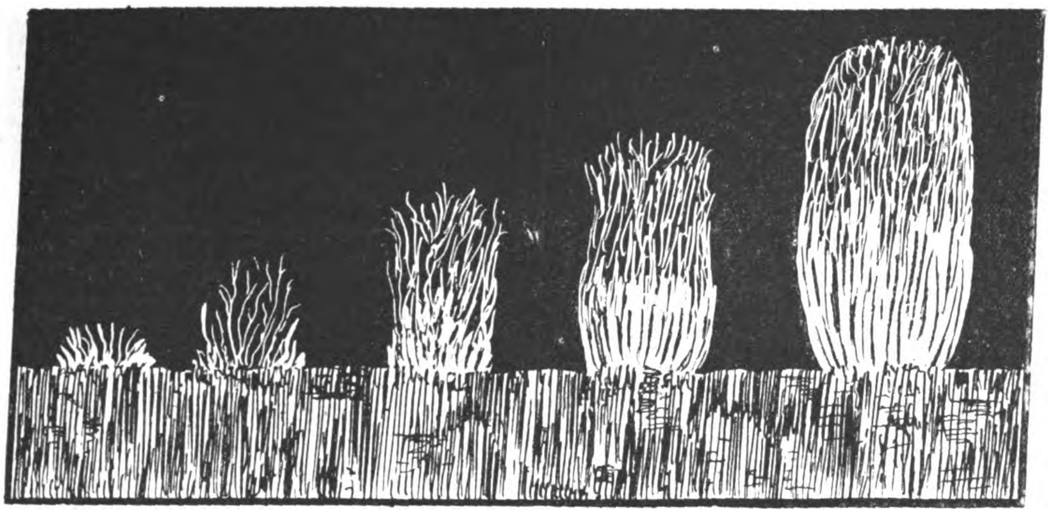
At this stage it will be advisable to describe how the rot fungus manages to form the curious objects on the ends and other parts of the timber. In No. 5 is depicted a tiny portion of coniferous wood, consisting of a few cells or pieces of fibre. These cells may be four, five, or six-sided, according to whether they are from old or new wood. They necessarily have to be shown rather diagrammatically, but it should be noted that they represent four of the meshes of No. 1 (Chapter I.) seen in perspective view, and on a larger scale of magnification. The threads of the fungus, which it will be remembered arise from the spores, force their way in and out of the fibrous cells by means of the pitted pores and between the interstices. Being hollow and exceptionally thin-skinned, they absorb any available and suitable liquid, which in this case would contain the soluble mineral salts. It is believed that after feeding in this manner on such sap they resolve it into an effective, destructive agent. At any rate, the disorganisation of the tissues and their contents, brought about by the operations of the fungus, is sufficient to gradually reduce the timber to powder.



No. 4.—Left space A whole, and a half, fibre of coniferous timber. The openings of these when cut, form the mesh No. 1. Magnified larger, on the right are a few cells with the timber rot fungus growing in them.

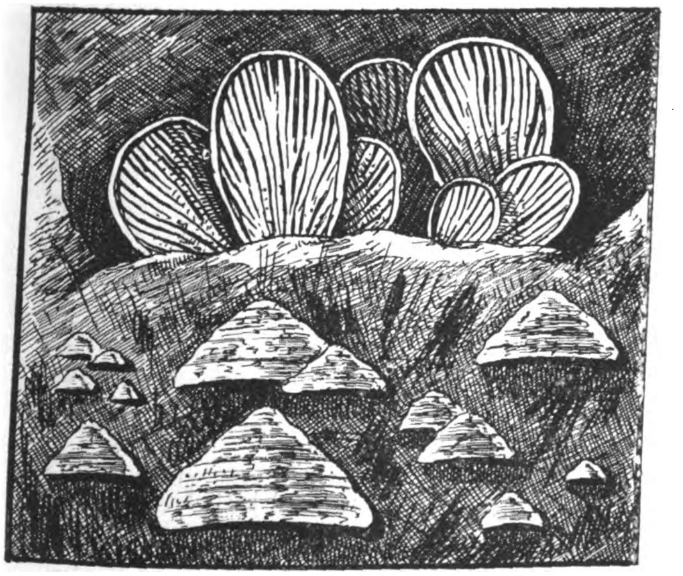
As the threads force their way through and between the fibrous cells they get nearer and nearer to the end, and from this part a mere tuft of loose threads project. This may be so small as to be at first practically invisible. Finding that there is no more food for it, and that it is exposed to the air instead, it gathers itself together, as it were, and when fresh threads emerge they range themselves side by side with their previously-fixed companions. The components of each bunch of the threads tend to consolidate together, and eventually form a compact upright or roofed spongy mass.

What started as loose threads become converted simply by cohesion and amalgamation into a thin, firm, bulbous, or shell-like object. It is hardly possible to describe just how the threads change into a lump, and this unfolds or opens out as a scoop. But simultaneously with the modifications, slender longitudinal ridges on what must be called the under or inner face appear. These elevations become the gills or ribs which extend from top to bottom of the object like those of a scallop shell. In due time the whole inner face of a fungus is filled with such ribs, and between them grow the invisible spores magnified in No. 2.



No. 5.—End of timber, showing how the rot fungus threads emerge from the cells and by coalescing together form the shell-like fungi *Lenzites sepiaria*, which, when mature averages two inches in height. The above figures are slightly magnified, the first being one-eighth of an inch high, and the last three-quarters.

The finished objects are called *sporophores*, because they develop and contain the spores. They seldom exceed two inches in height, and are at first white, gradually becoming yellow, brown and black with age. They grow one over another, each succeeding member being larger and more vigorous than the preceding one, and in this way they produce curious configurations. Sometimes they unite side by side, and fuse together so quaintly that they resemble a long continuous growth.



No. 6.—Front view and top view of fungi (2 inches and less high), growing from the ends of timber. They are called the fruit. The threads responsible for these (see No. 4) destroy the wood. Named *Lenzites sepiaria.*

A properly constituted, vigorous *sporophore* would contain millions upon millions of spores (see No. 1, Chapter I.). What this fact means can hardly be contemplated. *Each* of these spores is capable of setting up the disease on its own account in a suitable environment.

When the *sporophores* appear on the sides of timber the fact is generally due to the existence of season cracks. It is believed, with very good reason, that the majority of the spores gain access into timber through these channels. Timber in stacks dries unequally for some reason, and the result is the occurrence of cracks of varying lengths For the purpose of allowing the spores to enter the timber, however, very small crevices only are necessary. The spores seem to prefer to remain in the wood, as germinated threads, as long as possible, and therefore wait until they are deep down in the tissues before they commence growth.

The *sporophores* are perennial and continue year after year in the same position, discharging meantime huge clouds of their dust-like spores. In times of drought they will frequently dry up to shapeless masses; but as soon as they are again moistened they revive and liberate spores as freely as ever. Even after two or three years' experimental drying, a *sporophore* has yielded millions of ripe spores.

If a fresh, fully ripe *sporophore* is cut off the timber, and laid gill-side (i.e., rib-side) downwards on a piece of black paper, a thick layer of white dust in very regular lines, corresponding with those of the gills, will appear within a few hours on the paper.

From the first appearance of a tuft of threads on a timber end until it is mature and discharging its spores a period of ten days only (on the average) is necessary. It will then be about ¾ inch or 1 inch high. Then others follow it until the height of the combined set is 2 inches or thereabouts. No. 5 shows how they form, and No. 6 the perfected *sporophores.*

From June to November is the time when the spores, which are but 6 to 12 *microns* long, are matured and cast forth. A *micron*, by the way, is the $\frac{1}{25000}$ (one twenty-five thousandth) part of an inch. The reader can, from these measurements, realise the extreme minuteness of these spores.

The youngest thread masses which arise from these spores are white, whereas older ones range from yellow to black.

Just before the *sporophores* appear on the ends of the timber the wood blackens irregularly, the sizes of the patches running from one to two inches, roughly outlined. They do not extend very deeply into the tissues, but when the wood completely rots it is so loosened that it becomes converted into tiny cubical masses, which are easily squeezed and rubbed to powder between the finger and thumb. The absolute rot may extend a foot or more from the surface, internally, but of course the disease generally exists deeper down as well, although in a less severe form.

It is a curious fact that the annual rings of wood, when affected to a serious extent by this rot, may often be separated as broken cylinders from one another. The falling apart is due chiefly to the fact that the lignin

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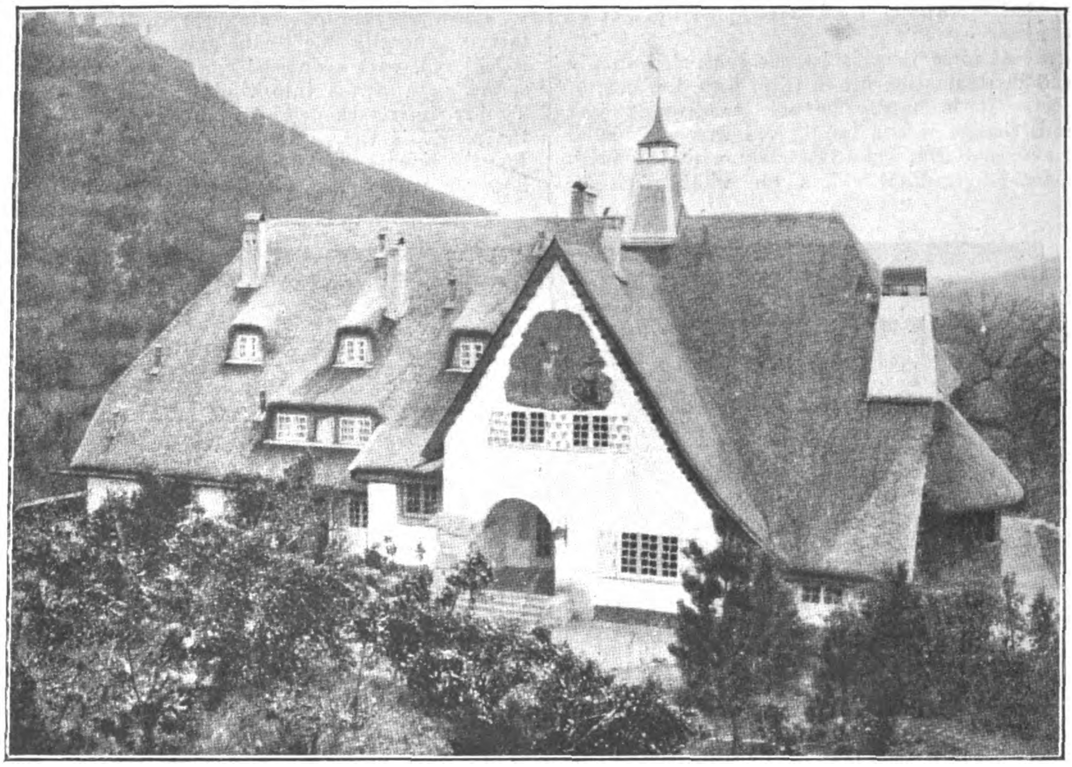
HUNGARY.



[From *Moderne Bauformen.*

HUNTING-BOX OF COUNT PAPPENHEIM AT BUJAK.—Herr FRANZ ZELL, Architect.

(which is the very essence of all wood) is more readily dissolved by this fungus than by others. Fundamentally, the cellulose (i.e., the cell-skins) of wood is the same as that of cotton-wool; but the presence of lignin strengthens them —turns them into wood, in reality. The lignin, by being decomposed, allows the wood to disintegrate.

This prolific fungus, which attacks all unpreserved timber, is the commonest in this and other countries. It will not grow in alkaline solutions, so that this trait should prove valuable to timber dealers and users. That means to say that if it is soaked in solutions of soda, potash, or ammonia before seasoning, which must be rapidly accomplished, the fungus will not be able to germinate properly. Of course, as these chemicals might in exposed situations be washed out, some external coating is also necessary. It should be understood that if spores have gained access to the inner tissues of wood, no preservative coating by itself will prevent it from spreading and rendering the wood dangerous if it is employed in structural work. Modern forms of creosoting alone would be likely to be wholly satisfactory.

To prevent the occurrence of season cracks, or the encroachment of fungus spores, open piling has been found in America to be far preferable to the close method. Green timber has been known to rot very badly in five to six months during close seasoning. Kiln drying has proved quite satisfactory.

I could write much more about this very destructive, little-known fungus. If readers will apply the knowledge of this article in their daily practice, they will be able to learn that the fungus is a very great and powerful enemy. It is of no use to clip off the curious objects (the *sporophores*) from the ends of timbers in the belief that they are haphazard growths. The threads inside the tissues will still continue to spread and gradually rot the wood cells; and these, by separating particle from particle, will render the timber dangerous.

To vary an old saying, it is advisable to "know thy enemy" before it can be wholly exterminated.

THE death occurred on Monday last of Mr. J. W. Hobbs at the age of seventy. Mr. Hobbs, who resided at Croydon, will be remembered as concerned in the unfortunate circumstances in connection with the Liberator Building Society.

WESTMINSTER HALL.

IN our issue of last week we gave a *résumé* of a report by Mr. F. Baines, M.V.O., one of the principal architects in the Office of Works, on the condition of the roof timbers of Westminster Hall, together with his suggested scheme of steel reinforcement for maintaining the stability of the roof. The report opens with an interesting summary of the historical evidence relating to the Hall and roof as far as it has been examined. This has been written by Mr. C. R. Peers, the Chief Inspector of Ancient Monuments, from evidence collected by the Ancient Monuments Branch, and as it contains many new facts we give the following extracts from it:—

The date of the Hall is satisfactorily fixed by the entry in the Saxon Chronicle, under the year 1097, that many shires around London were cruelly burdened by reason of the wall that was built about the Tower, the bridge that was nearly all afloat, and the work of the King's Hall that was wrought at Westminster. It was evidently finished by 1099, as in that year, at Whitsuntide, William Rufus kept court for the first time in his new palace at Westminster.

The walls of his Hall remain to the present day, though much refaced and altered, and it is possible to arrive at a fairly clear idea of its original appearance, assuming that the pitch of William's roof was not greatly different from that of Richard II. The whole evidence is ably summarised by Professor Lethaby in "Archæologia," vol. 60, pp. 131-148.

From the spacing of the original buttresses which still exist it is clear that the Hall was divided into twelve bays, as now, giving a width of nearly 20 feet to each bay. The width within the walls, 67 feet 6 inches, makes it practically certain that the roof at this early date was not of a single span, but was carried by two rows of pillars, probably of wood, as no foundations such as would be needed to carry stone columns have ever been uncovered as far as is known in the various alterations to the floor of the Hall. The outer covering of the roof was of oak shingles, as appears from entries in the Pipe Rolls of Henry II., and in 1320 a repair of these shingles by a carpenter is recorded.

During its 300 years of existence the roof doubtless underwent a good deal of repair, but there is no record, as in the case of St. George's Chapel at Windsor, that in the end of the fourteenth century it was "ready to fall

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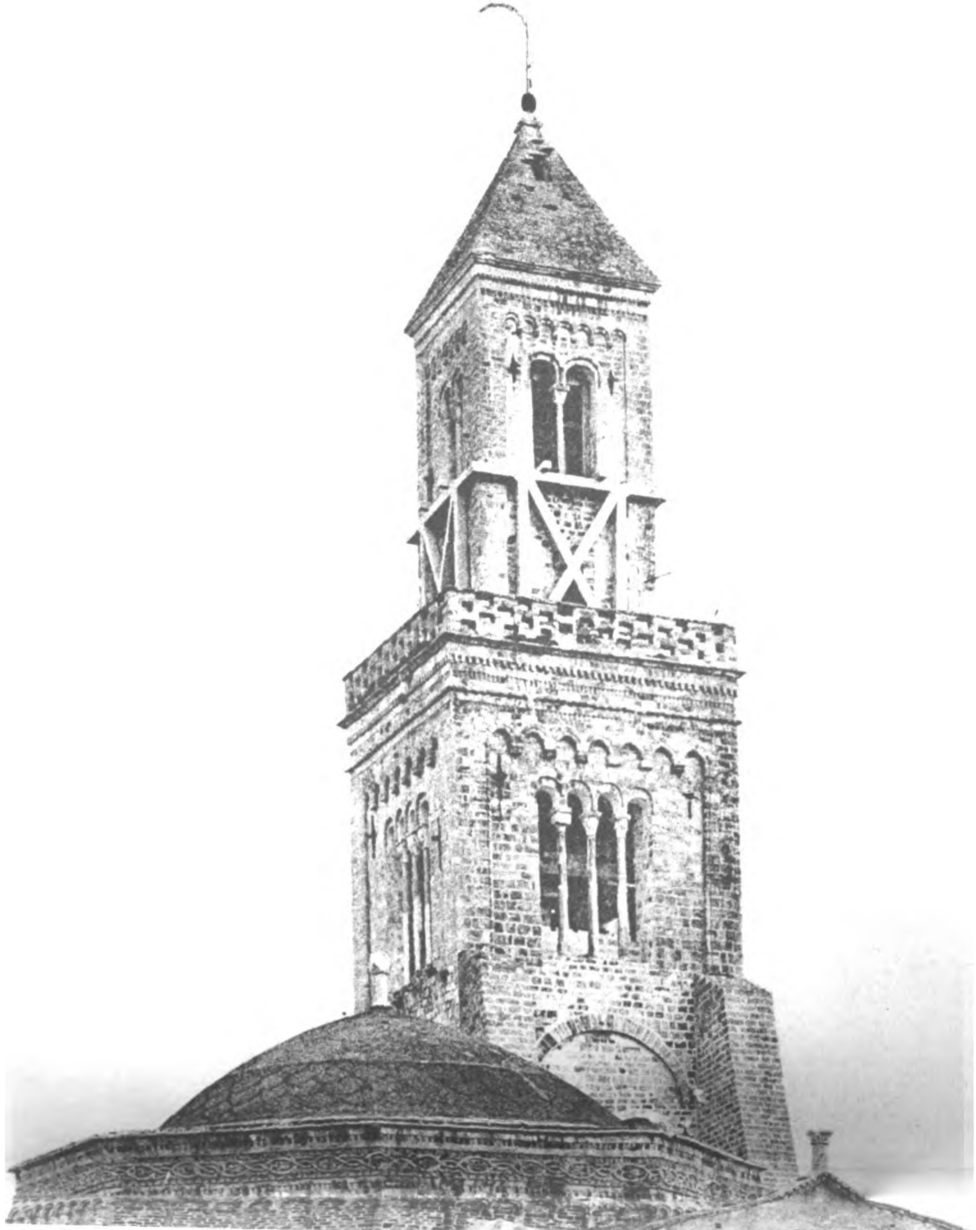

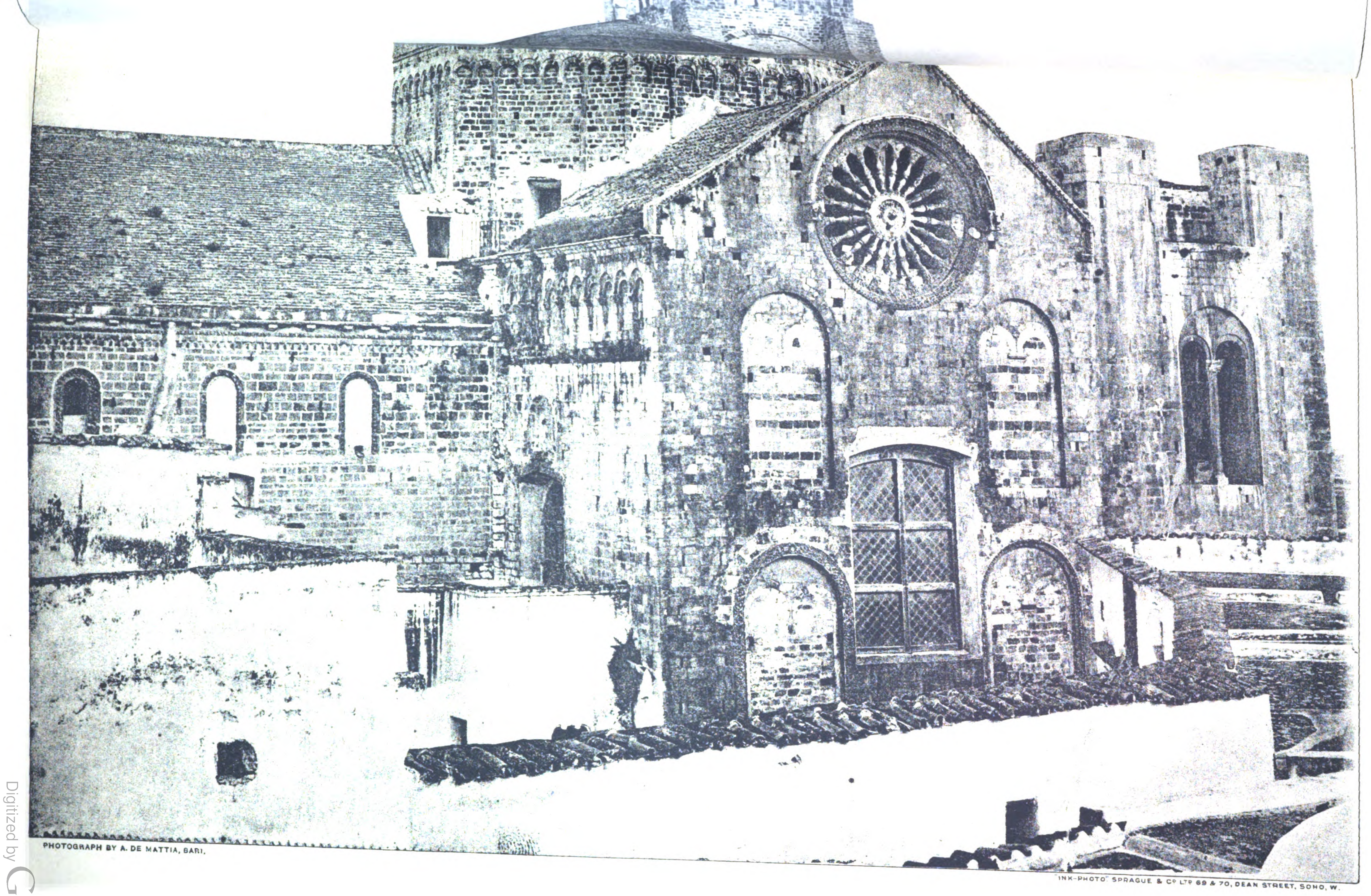

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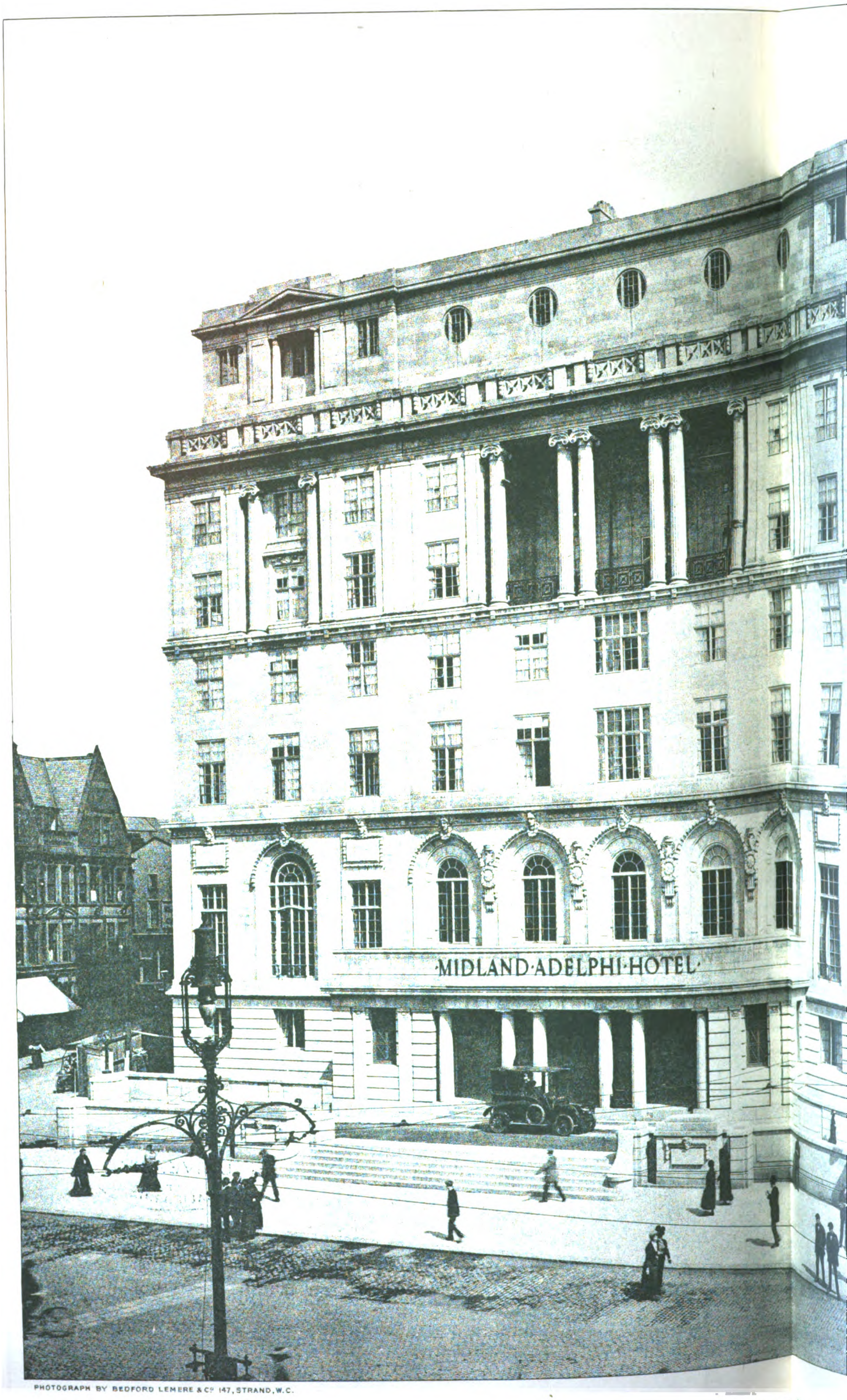
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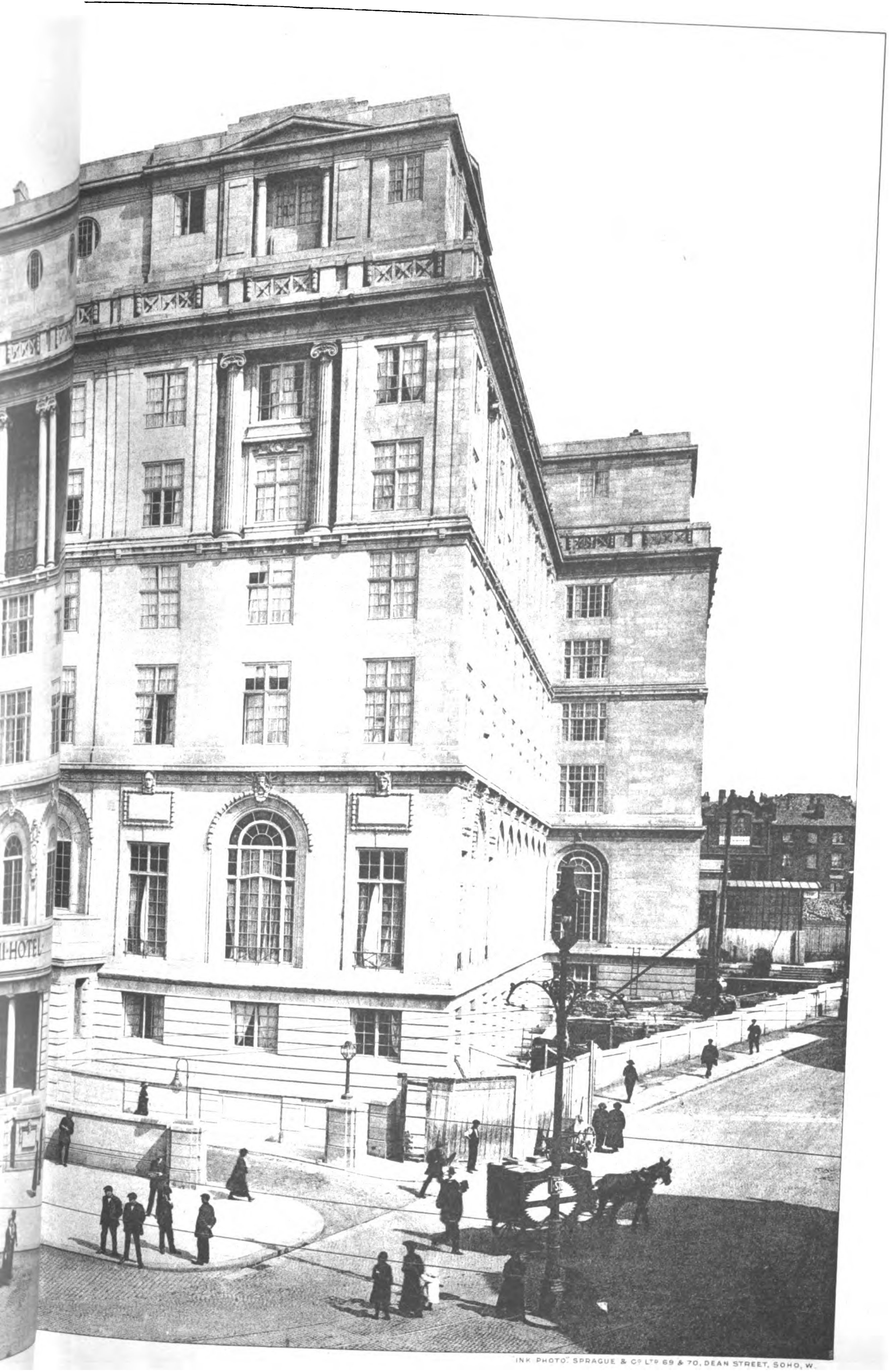
MIDLAND ADELPHI HOTEL, LIVE

MR. R. FRANK ATKINSON, F.R.I.B.A., Ar

June 26th 1914



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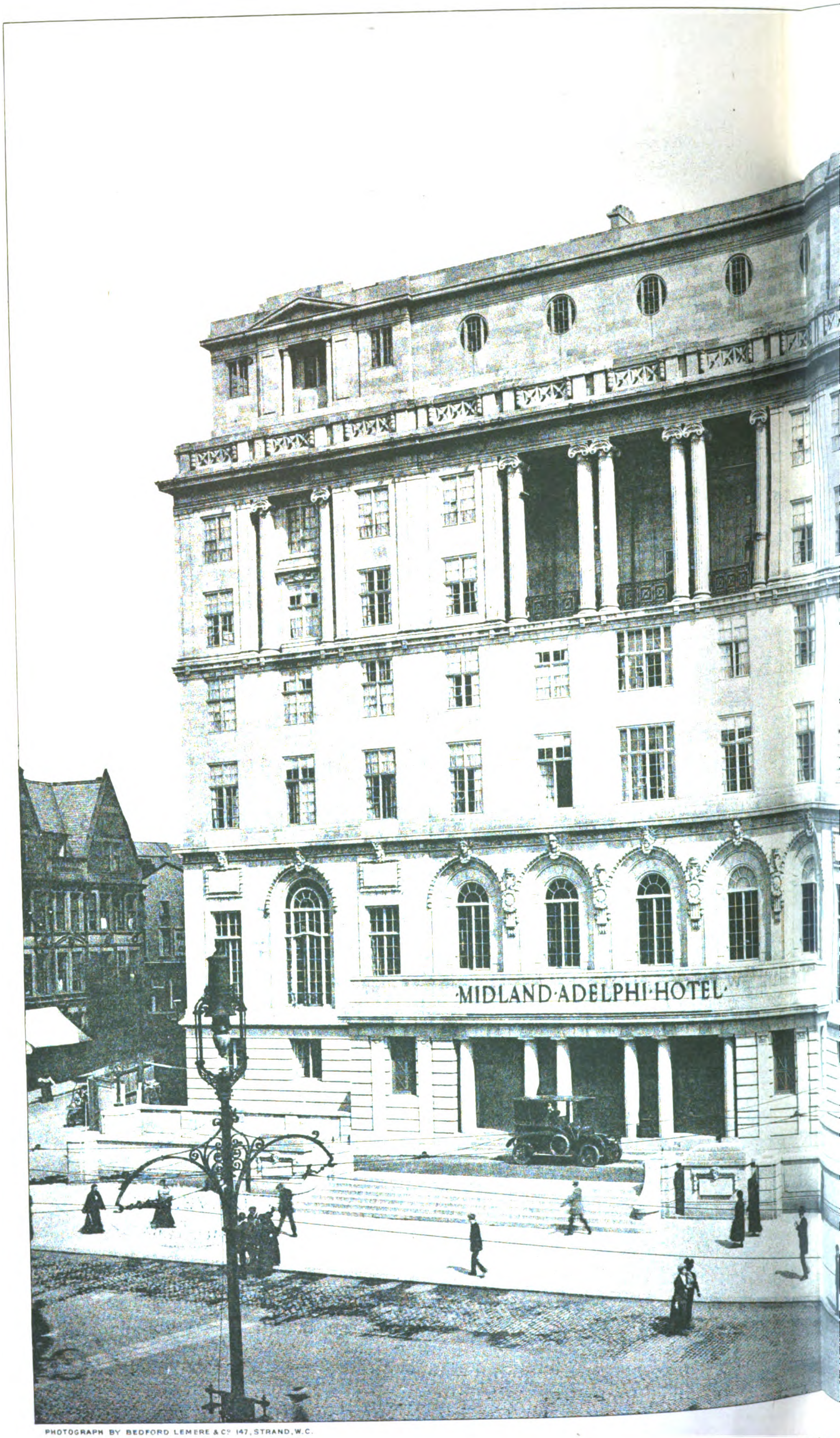
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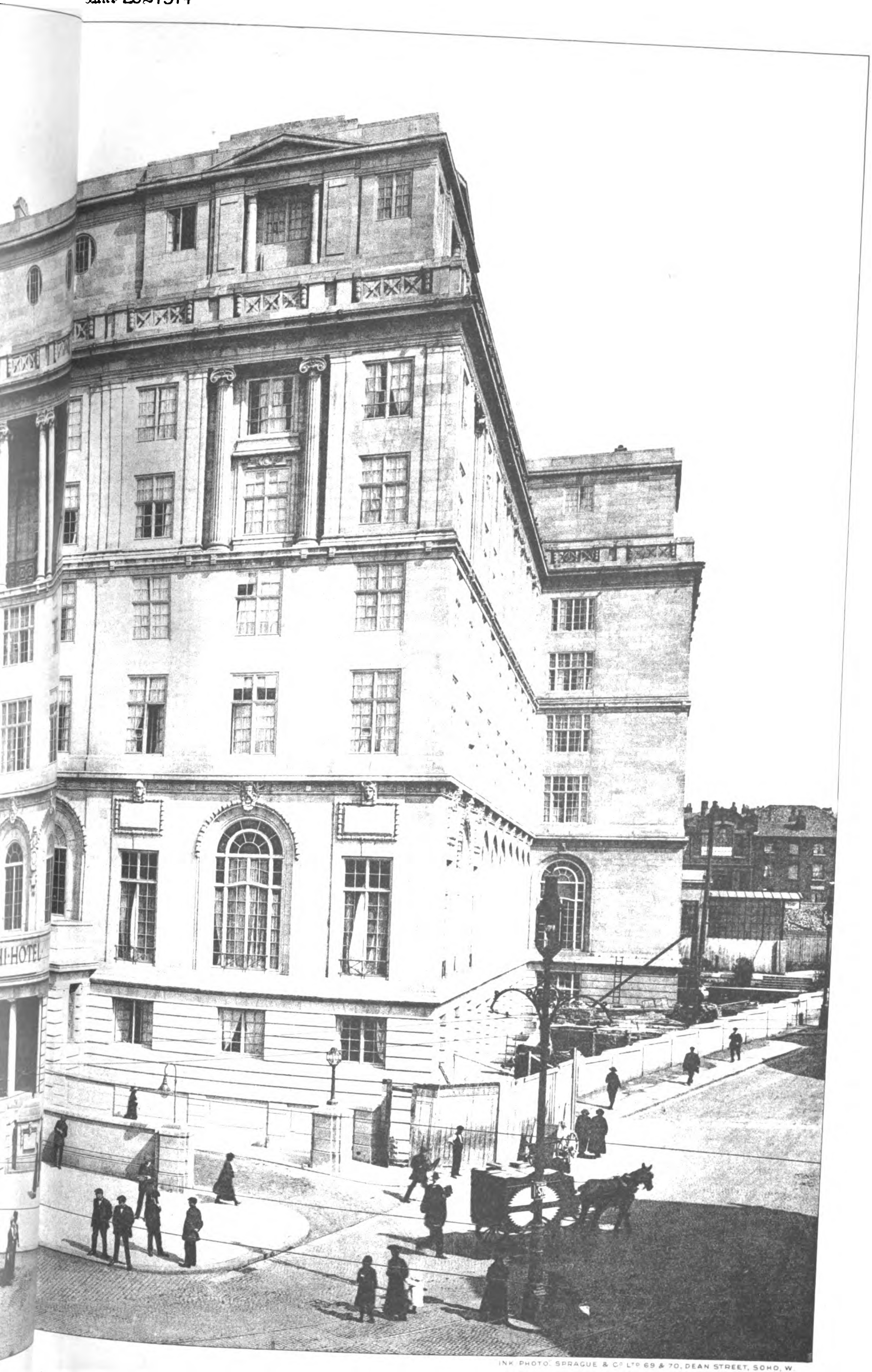
MIDLAND ADELPHI

Mr. R. FRANK ATKINS



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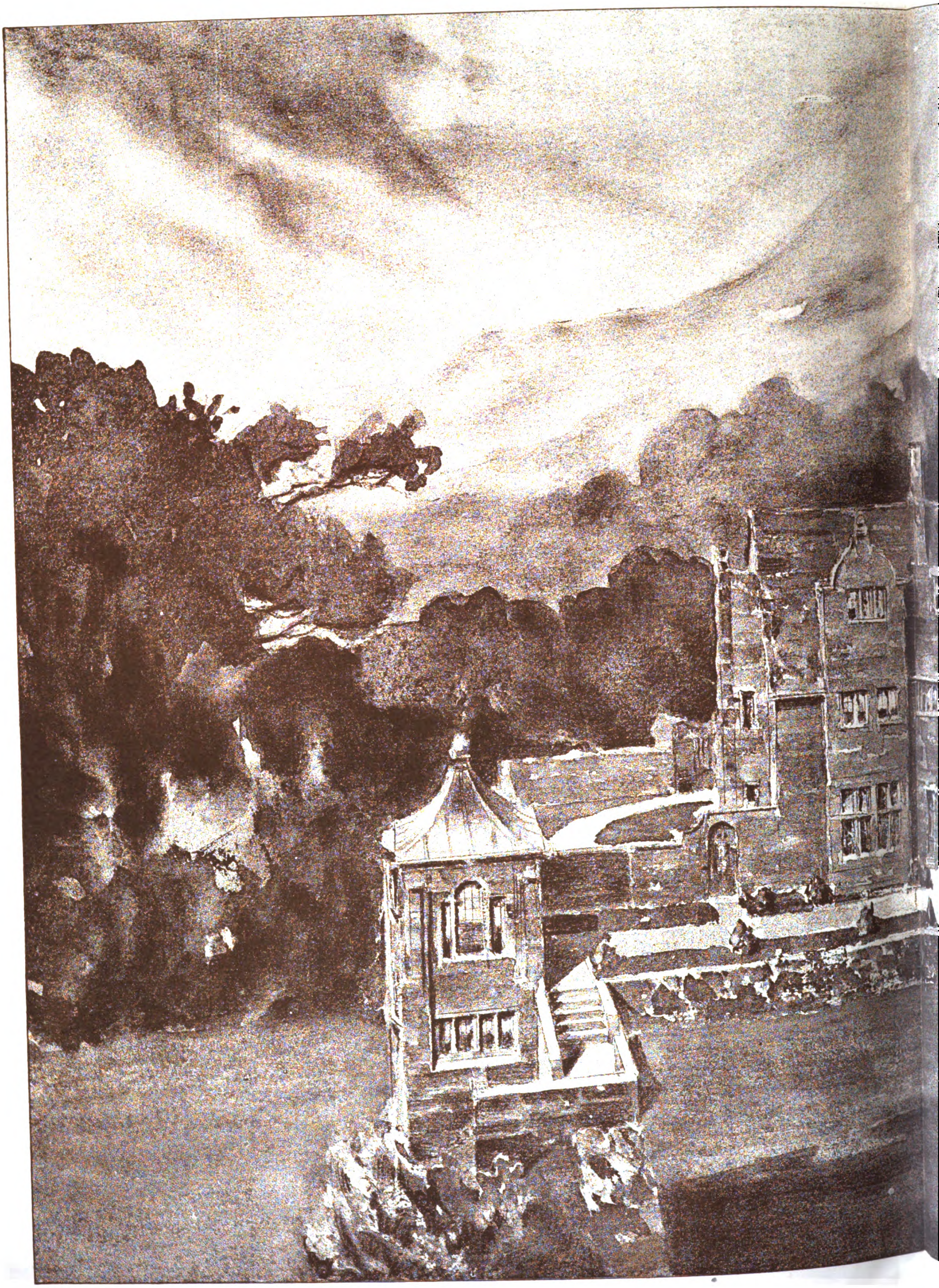

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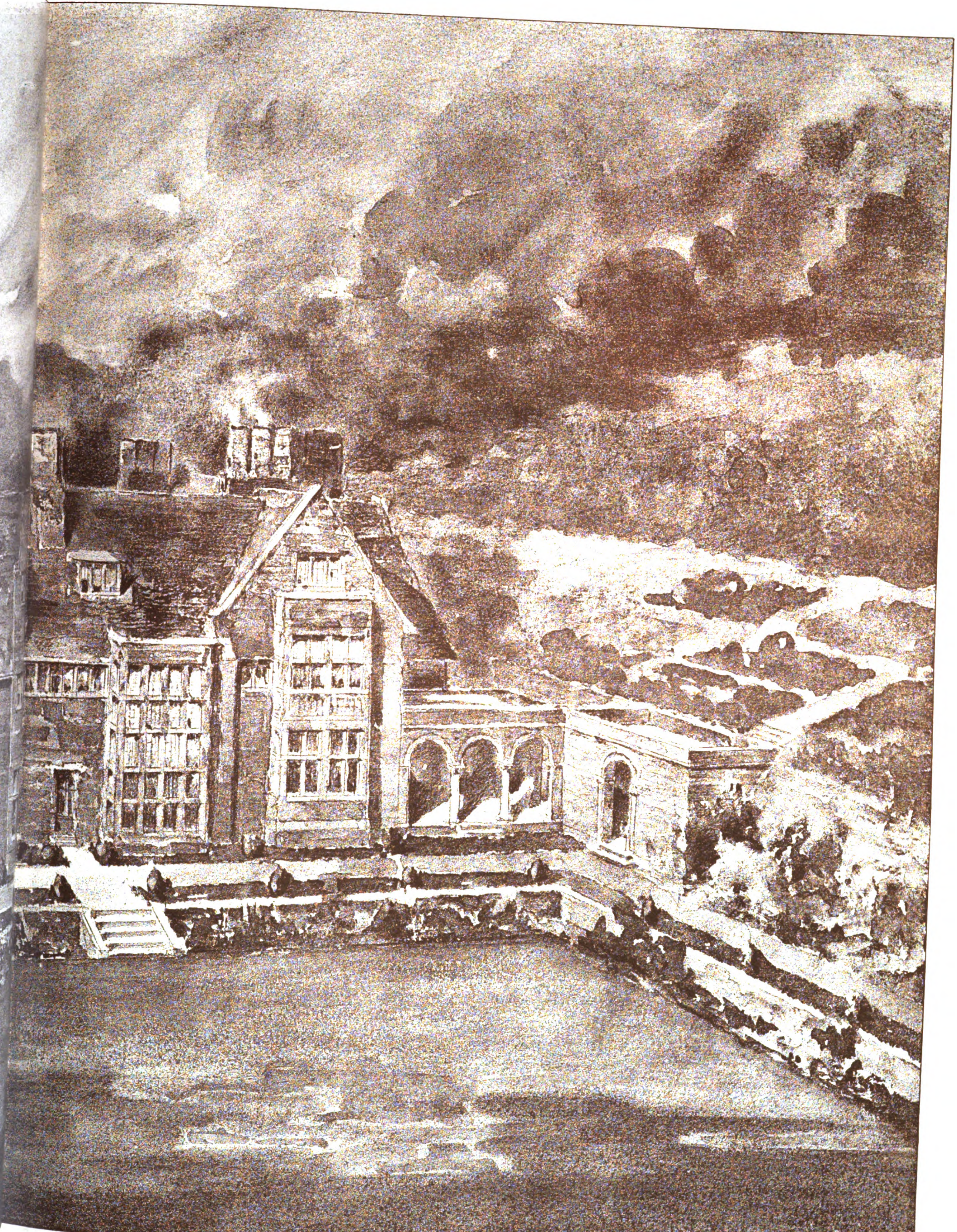

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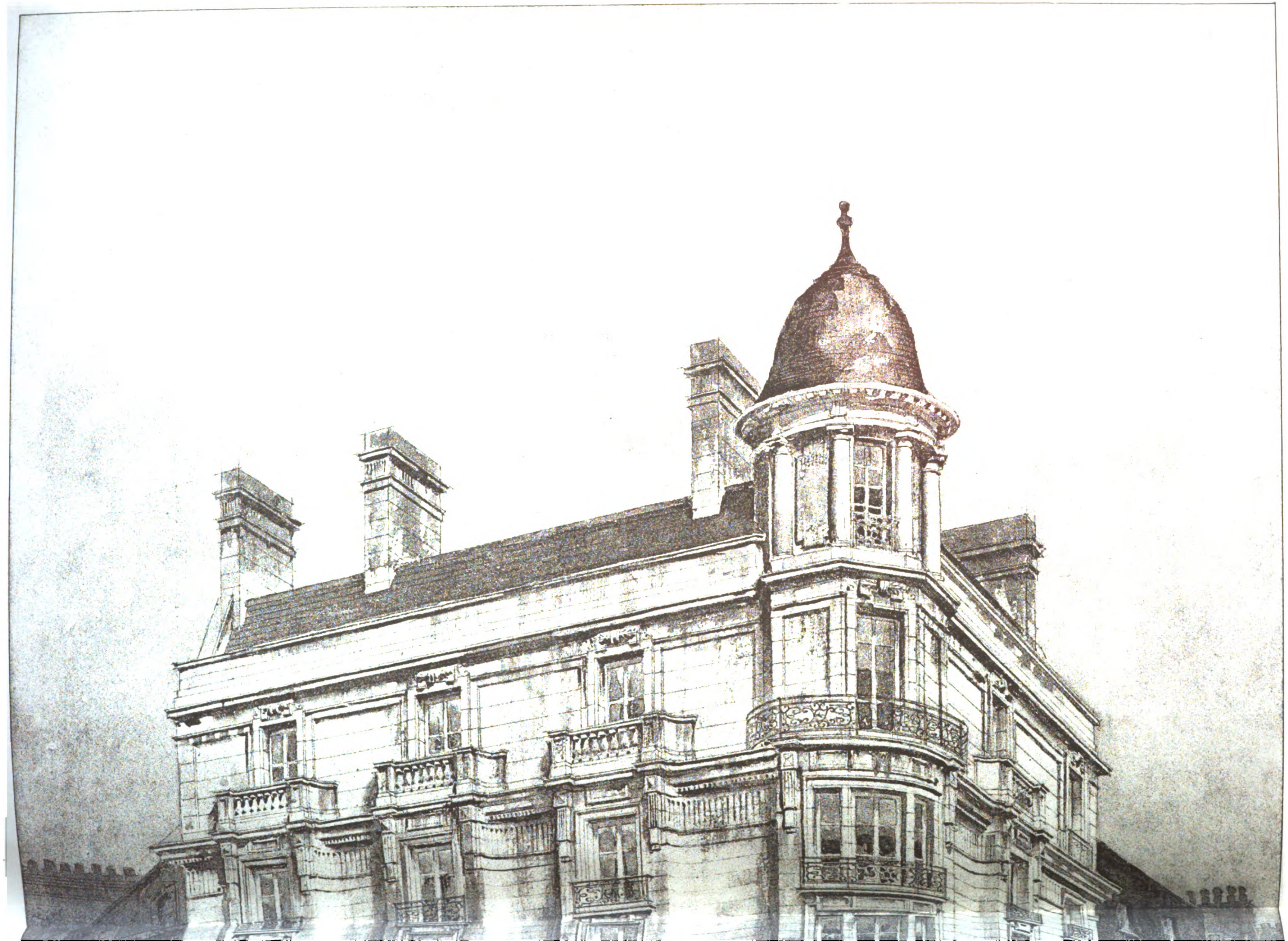

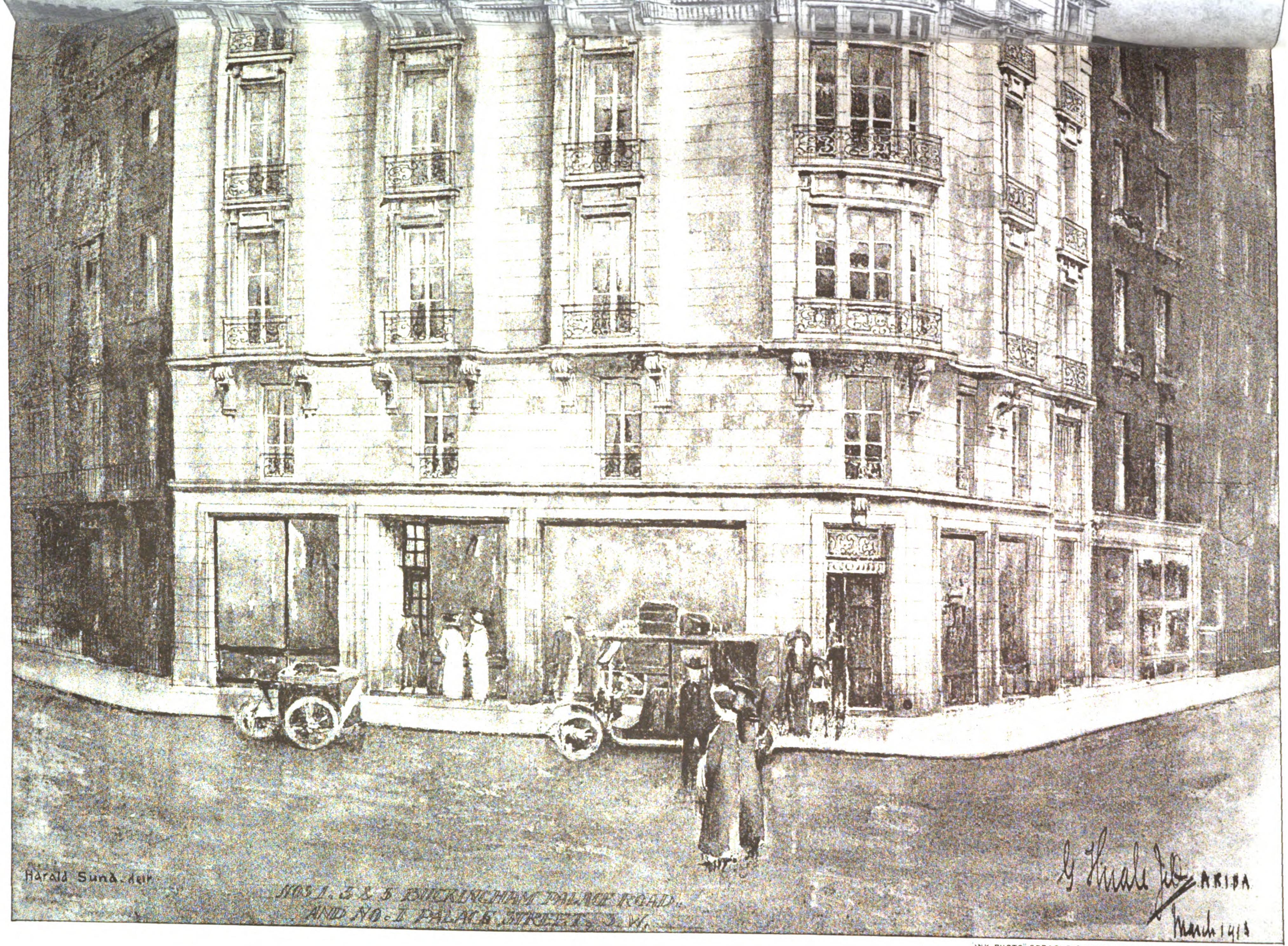
Harald Sund. delr
NOS 1. 3 & 5 BUCKINGHAM PALACE ROAD
AND NO. 1 PALACE STREET, S.W.
G. Thrale Jell. A.R.I.B.A.
March 1913

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NEW BUILDING AT CORNER OF BUCKINGHAM PALACE ROAD AND PALACE STREET, LONDON.

Mr. G. THRALE JELL, A.R.I.B.A., Architect.

(Royal Academy Exhibition, 1914).

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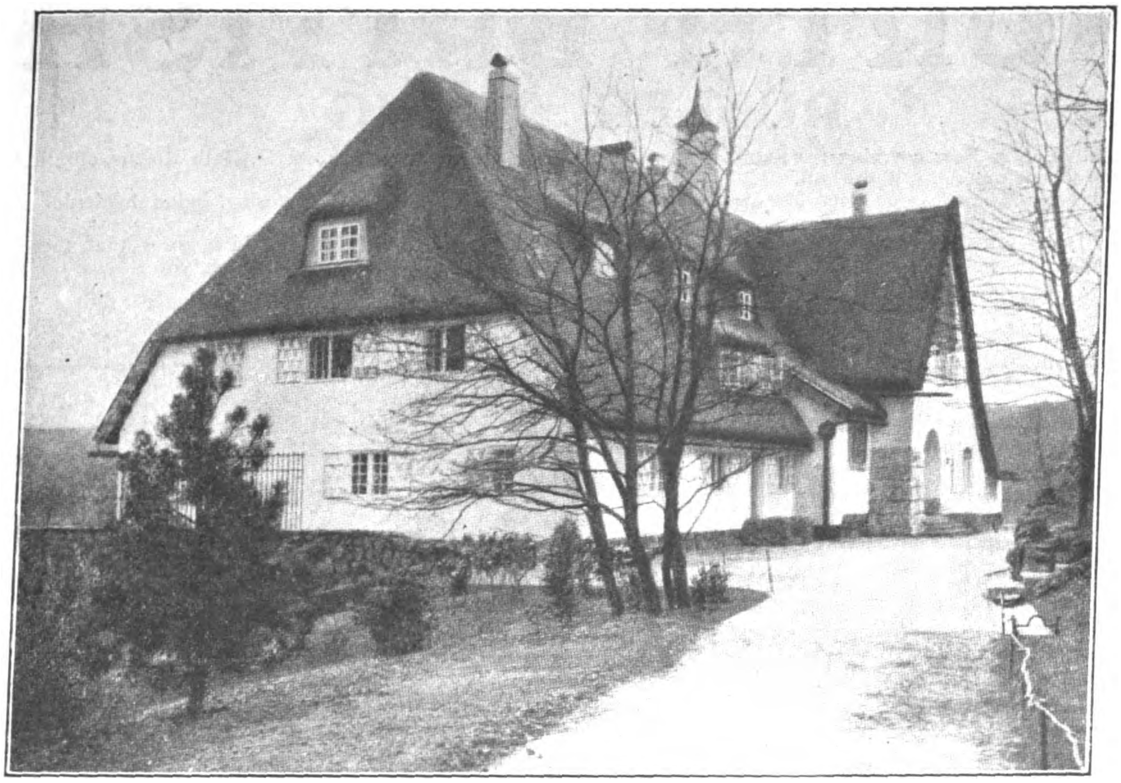

[From *Moderne Bauformen.*

HUNTING-BOX OF COUNT PAPPENHEIM AT BUJAK.—Herr Franz Zell, Architect.

into ruin," and it is quite probable that its removal was rather due to Richard II.'s desire for something more splendid than to any structural necessity. Be this as it may, the inception of the new work is marked by the appointment, dated January 21, 1394, of John Godmeston, Clerk, to cause the Great Hall in the Palace of Westminster to be repaired, taking the necessary masons, carpenters, and labourers therefor, wherever found, except in the fee of the church, with power to arrest and imprison contrariants until further order, and also to take stone, timber, tiles, and other materials and carriage for the same at the King's charges, and to sell branches, bark, and other remnants of trees provided for the said Hall, as well as the old timber from it and from an old bridge near the Palace, by view and testimony of the King's Controller of the said work for the time being, accounting for the moneys so received, and receiving in that office wages and fees at the discretion of the Treasurer of England. At the same time Hugh Herland, carpenter, was apointed Controller to John Godmeston in respect of this work.

Provisions of stone, timber, and lead are made. On July 5, 1393, John Gedeney, Clerk of the Works, is appointed to take by land and sea all the King's timber in the wood of Pettelewode, Co. Sussex, to the Port of London for the King's works within the Palace of Westminster. On January 24, 1394, Robert Gamylston, of Retford, mason, is appointed to provide and buy for the King's use 40 fothers of lead in the counties of Nottingham and Derby, and to arrest sufficient carters, horses, and carts for the carriage therefor thence to the Palace of Westminster and elsewhere at the King's charges. On February 24 in the same year Thomas de Nevyll and Thurstan del Boure, esquire, are appointed to take, provide, and buy in person or by deputies, for repair of the King's Great Hall at Westminster, 100 fothers of lead in the High Peak and elsewhere in the county of Derby and in the counties of York and Nottingham, paying therefor £4 a fother. On June 1 of the same year William Bleburgh is appointed to arrest ships and other vessels sufficient for the carriage of freestone from a place called "le Mar" by Doncaster to the Palace of Westminster by water for the King's works there, and mariners to man them, paying for every "ton tight" 4*s.*, with power to bring the stones overland to any port, quay, wharf, bridge, or other place without fee, toll, custom, or other subsidy. The mention of stone from "le Mar," now Marr, near Doncaster, brings us to what is perhaps the most important document of all—namely, the contract with two masons, Richard Washbourn and John Swallow (Swalwe), dated March 18, 1395, for the heightening of the side walls of the Hall and the insertion of corbels, &c., in preparation for the new roof.

It is in French and may be translated thus:—

This indenture made between our Lord the King of the one part and Richard Washbourn and Johan Swalwe, masons, of the other part. Witnesseth that the said masons have undertaken to make well and truly all the table of walls of the Great Hall within the Palace of Westminster on one side and the other. The which table shall surmount the old wall by two feet of assize over the said wall, with sawn stone of Reigate, and where the work requires they shall put stone of Marre to strengthen the said table. And the highest course of the same table on one side and the other they shall well and convenably set and level (?) and shall make the said table according to the purport of a pattern and mould made by the advice of Master Henry Yeveley and delivered to the said masons by Watkin Waldon, his warden. And the said masons shall receive for each foot of assize in the length of the said wall so completed twelve pence.

And the said masons have also undertaken to make twenty-six corbels in the said Hall of stone of Marre, and they shall cut away the wall to inset the said corbels at their own cost and shall well and convenably set the said corbels each in its place, and each corbel shall be fashioned according to the purport of a pattern to be shown them by the Treasurer.

They shall fill each spandril with sawn stone of Reigate from every corbel below up to the arch above, receiving for every corbel so made, by view of the said Master Henry and Watkyn his warden twenty shillings. And our said Lord the King shall find all manner of necessaries and material for the said works, to wit stone, lime, sand, scaffolds, engines, and other materials whatsoever, except manual labour and the tools for masons to work with in their art.

And if any pillar shall be taken down, that shall be at the cost of our said Lord the King. And our same Lord the King shall find lodging for the said masons and their companions for all the time that they shall be occupied in all the said works. And the aforesaid masons shall make and perform the half of the said table and corbels in manner as is aforesaid between now and the feast of St.

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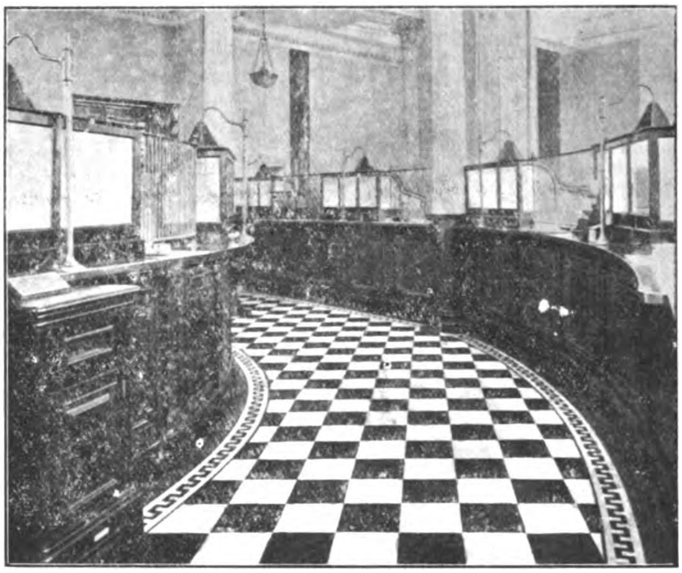

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John the Baptist next ensuing; and the other half between the said feast of St. John and the feast of Candlemas then next ensuing.

In witness of which thing to the part of this indenture remaining with our said Lord the King the aforesaid masons have set their seals.

Done at Westminster the 18th day of March, in the 18th year of the reign of the same our Lord the King.

Endorsed.—The Indenture touching the King's masons.

The "table" of this contract is evidently the moulded cornice on the wall head, and it is interesting to note that its design is due to Master Henry Yeveley, who, in 1390, in consideration of his being the King's mason and Surveyor of Works within the Palace of Westminster, the Tower of London, and the Castle of Canterbury, and of his great age, was exempted from being put on assizes, juries, inquisitions, attaints or other recognitions, and from being made sheriff, alderman, escheator, coroner, constable, trier, taxor, controller, collector of tenths, fifteenths, or other taxes, tallages, customs, subsidies, or quotas, bailiff, officer, or other minister of the King against his will.

Yeveley was evidently a man of skill and experience, and had his counterpart in the chief carpenter, Henry Herland, Controller of the work on the Hall. Herland, as far back as 1366, being then one of the King's carpenters, received a grant of 10 marks a year for life, on account of his long service; he also held the office of the pesage of wools at Queensborough by grants of 1368 and 1370. His pension was confirmed by Richard II. on his accession, and in 1381 he was appointed to collect carpenters for service in Brittany.

In 1383 he surrendered the pension granted for as long as he held the office of one of the King's master carpenters, as he was "verging on old age," and received instead a life grant of twelve pence daily and a robe yearly.

In spite of this he is found advising on the repairs of Winchester Castle from 1390 onwards, and when the work on Westminster Hall is taken in hand he is appointed Controller, taking charge of the whole direction of the expenditure. That he also continued to work in his "art" is evident from grants of April 28 and June 20, 1396, to him, as Keeper of the King's Carpentry Works, of a little house lying in the outer little ward of the Palace of Westminster, near the house of the Clerk of Works, for keeping his tools and for making his models (formæ, formulæ) and moulds for his carpentry work, which house was delivered to him by order of the late King thirty years ago, and he is not to be expelled therefrom by the herbergeour of the household or other officer of the King.

In 1397 he is called King's Esquire, Chief Carpenter, Controller and Surveyor of the Works, and has a grant of £18 5*s*. yearly for life. In 1398 he has to do with the construction of the new harbour of Great Yarmouth, and is last mentioned as Controller in 1399.

It is clear that such men as Yeveley and Herland were responsible for the details of the work which they superintended, and it is an open question how far they were also the designers of such works. Their superior officers, the Clerks of Works from time to time, were probably not as a rule men of technical knowledge. John Godmeston, the clerk specially appointed for "the work of the Great Hall within the Palace of Westminster," was in 1384 Vicar of Brampton in the diocese of Exeter, in 1385 held the prebend of Moreton Parva in Hereford Cathedral, had a third portion in the church of *Bromyard* in 1387, and the prebend of Wydyngton Parva in Hereford Cathedral in 1389. In 1397 he was granted the Chancellorship of St. Paul's Cathedral, and in 1398 the church of Ross in Hereford diocese. In 1399 he was given the reversion of the first vacant prebend in the college of St. Stephen at Westminster, added a prebend of Chichester to his other preferments, and was made Chamberlain of the Exchequer. Such a list of pluralities presupposes Court favour, with, no doubt, some general ability, rather than the skill and training necessary to devise such a masterpiece as the roof of Westminster Hall.

Godmeston's predecessor, John Gedney, has a somewhat similar record. He was Constable of Bordeaux in 1389, and in 1391 succeeded, or rather superseded, the poet Chaucer in the office of Clerk of Works for the repair of St. George's Chapel at Windsor. In the same year he was presented to the churches of Ratlesden in Norwich diocese and Settrington in York diocese, and in 1393 was appointed warden of the hospital of St. Mary Rounceval by Charing Cross. With regard to Chaucer, the fame of the Father of English Poetry rests on other ground than his tenure from 1389 to 1391 of a piece of Court preferment, for the direction of which he was assuredly not fitted by temperament or training. It is to be noted, indeed, that his three years' appointment from 1390 to superintend the repair of St. George's Chapel was terminated in 1391 in favour of John Gedney. The progress of the work on the Hall may be traced, though unfortunately not in minute detail, from John Godmeston's accounts preserved in the Foreign Rolls. The first account, from November 3, 1393, to April 11, 1394, shows a total expenditure of £1,288 6*s*. 10*d*., and includes Stapleton, Reigate, and rag stone, the working of 315 feet of ashlar, 384 rafters, 450 pieces of oak for joists and scaffolds, and 40 fothers of lead.

The second account, from Easter 1394 to Easter 1395, with a total of £1,928 11*s*. 11½*d*., mentions, in addition to the stones occurring in the previous year, 100 feet of stone called "Pas," perhaps meaning steps, on the analogy of the "stones called nowell for the stair in the new tower" of the account for 1399-1400, Six pieces of great timber and 200 "estrichebords"* of wainscot show that the carpenter's work is in progress.

The next account, running from Easter 1395 to Michaelmas 1397, or a year and a half, comes to no less than £5,160 12*s*. 3½*d*., but is unfortunately without much detail. The new roof, however, must have been nearly finished during this period, for there is a mention of twenty-two rolls of "wadmole" (a material like felt), "for covering the Hall against the Queen's Coronation through lack of lead." A number of pieces of old timber from the old roof of the Hall were sold, realising some £14 altogether, as well as the timber from the old bridge by the palace, called "Wolbregge."

The oak timber for the new roof came partly, as this account shows, from the King's Park of Odiham, the Abbot of St. Albans' wood at Bernan, and a wood by Kingston-on-Thames.

The account from Michaelmas 1397 to Michaelmas 1398 is fortunately better preserved; its total is £1,901 3*s*. 3*d*. The stone includes 521 loads of Marr stone, eighty-eight of Stapleton, 601 of Caen, 747 of Reigate, 1,100 of rag, and 282 of chalk stone.

The roof of the Hall, called here by a rare term *doma*, is being boarded with wainscot, and other boards called "Righot" are bought for the same purpose and for making moulds for the masons.

There also appear the accounts of the dismantling and sale of a temporary wooden hall with a tiled roof, "lately made in Westminster Palace for the Great Parliament."

The next year, 1399-1400, the last year of Richard II. and the first of Henry IV., brings the work nearly to completion. The north front of the Hall, with its great window and flanking towers, is being finished, and 1,000 wainscot boards are used for boarding the roof (*doma*) of the Hall and for other purposes. Elm boarding is used for the centering of the arch of the great window in the north front, and the gutters and down pipes of the Hall are being made, 150 lb. of tin being bought for soldering. The side windows of the Hall are being glazed and fitted with iron stay bars, and the making of the stonework of four side windows is specially mentioned.

The two towers are described as being 20 feet high with battlements, which must mean 20 feet higher than the parapet level of the Hall, with a vice (newel stair) in each tower rising 5 feet above the top of the tower; the upper part of the north gable is now being finished, with the pinnacle on the point of the gable 28 feet higher than the top of the roof (*doma*), and having four effigies of kings standing at the four sides of the pinnacle.

The new north-east tower was no sooner finished than it began to settle, and £10 was spent on "separating the wall of the new tower at the end of the Hall by the Receipt of the Exchequer from the old wall of the Hall, after they had been joined from the base to the top of the roof (*doma*) of the Receipt because the old wall was fully established while the new one needs a deeper foundation, and for making a stair in the old wall after the separation from the base to the summit of the roof of the Receipt."

In 1400-1 the total expenditure on the Hall was £265 1*s*. 4½*d*., and in 1401-2 £410 16*s*. 5¾*d*. The massive and well-built walls of Rufus's Hall show even at the

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* A general term for timber from the Baltic, &c., as coming to England from the east, *cf*. Easterlings.

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present day no sign of failure, but in order to provide for the strain of the great new roof, Richard's masons built strong flying buttresses against alternate bays of the side walls, where abutment was not otherwise provided by existing buildings, and further strengthened the walls by blocking up the original arcaded wall passages.

These precautions have been amply sufficient, and such repairs as have been made in the last 500 years have been caused by the decay of material and not the failure of the construction.

There is indeed a record of further failure in the north-east tower,* when in 1410 John Noble, porter of the palace, had a grant for twenty-four years of the basement of the north-east tower, on condition of repairing within two years at his own cost a vault which was much broken and likely soon to fall to the ground. It is evident that the underpinning of 1399 had not been altogether effective.

It is impossible, and indeed out of place, in this report to follow the changes and development of the group of buildings of which Westminster Hall was the centre, and with regard to the Hall itself it must suffice to say that at the upper end, where stood the great marble table at which the Kings of England sat at their Coronation feasts, the Courts of King's Bench and Chancery came to be regularly held, in wooden structures which were taken down at every Coronation and reinstated after the feasts. Along the side walls were shops, with rows of shelves set against the walls, and counters in front of them, and these, with the Court of Common Pleas, were likewise periodically taken down and reinstated in the same way. At the Coronations galleries were set up on both sides of the Hall, with much cutting of holes in the masonry, and a third gallery, for the trumpeters and kettledrums, at the north end over the great entrance doorway. In 1661 the Hall floor was repaired with Purbeck stone.

NEW LONDON SESSIONS HOUSE.

REPLYING to Mr. J. D. Gilbert at the meeting of the London County Council on Tuesday last, Mr. W. Ray, vice-chairman of the Local Government Committee, announced that the building contract for the new London Sessions House at Newington would probably be completed early in August next. It was anticipated that the building would be commenced during the same month, and be completed in twenty-one months. The work of demolishing the existing buildings had been included in the contract, as it was considered that the Council's interests would be best served by adopting that course. The committee hoped to report fully on the subject next month.

ARCHITECTS' CLAIM FOR FEES.

IN the King's Bench Division on Thursday, June 18, Mr. Justice Shearman heard an action in which Messrs. Speir & Beavan, architects, of Wharton Street, Cardiff, claimed from the Portland (Dorset) Urban District Council the sum of £82 19*s*. for professional services rendered in connection with a scheme for building new offices.

Mr. Graham Mould (instructed by Messrs. Hyman, Isaacs & Lewis, on behalf of Mr. E. W. Pocock, Cardiff) said that in March 1912 the Council contemplated the erection of new offices, and they invited plans to be submitted in competition on certain conditions, the chief of which was as follows: "That premiums of £50 and £10 are offered for the first and second designs. The author of the design placed first will be appointed to carry out the work, subject to the sanction of the Local Government Board being obtained to the scheme. The premium of £50 will merge in his commission." On these conditions the plaintiffs submitted plans in competition with some eighty others, and were successful in securing the premium for the first design, which was awarded to them in June 1912. Following their success they received letters asking them to meet the Council, as the latter wanted certain alterations made in the plans. These were made, and counsel said he relied on the point that these alterations were entirely independent of the competition, and that the plaintiffs were entitled to be paid for them quite apart from the competition. The scheme was never carried out, and the plaintiffs were never appointed, and therefore there was no commission to merge in the premium. Nearly all the extra work, which included making working drawings and detailed estimates, was for the purpose of placing the scheme before the Local Government Board at the inquiry, and not for the completion of the buildings. The amount of the proposed loan was £6,000, and the inquiry was held in March 1913. The inspector reported adversely on the scheme, chiefly on account of the site, and also for other reasons, and he also made reference to the Council's financial burdens. The plaintiffs subsequently made application to be paid. The defence, counsel understood, was that any liability for payment must be wholly conditional upon the sanction of the Local Government Board being obtained, but he had been unable to find any such condition.

Mr. Thomas Albert Beavan, a member of the plaintiff firm, gave evidence corroborating this statement. He said there was no arrangement with the defendants that he should do the extra work and not be paid if the sanction of the Local Government Board was not obtained and the scheme failed.

Mr. John Allen Speir, the other member of the plaintiff firm, said the charges they made in their claim were entirely reasonable, but such charges were a matter of discretion, as there was no scale upon which one could compute them. They were the customary charges where a scheme did not go through.

For the defence, Mr. Cecil Walsh, K.C. (instructed by Messrs. Lovell, Son & Pitfield, on behalf of Mr. G. P. Symes, Portland), called the clerk to the defendant Council, Mr. R. A. Colenutt, who said that no payment for the plaintiffs' services was contemplated if the scheme did not go through. Their employment was, in fact, subject to the Local Government Board's sanction to the scheme.

Mr. Elijah Allen, chairman of the Council's Buildings and Sites Committee, said it was understood that the plaintiffs' 5 per cent. commission should cover all their expenses for preparing the plans for the Local Government Board inquiry and for giving evidence at that inquiry.

Mr. Walsh submitted that there was no contract to engage the plaintiffs. That depended on the scheme being sanctioned by the Local Government Board.

His Lordship: That appears to mean that they shall work in the interval to see if they are appointed, and if they are not they shall get nothing.

After hearing legal arguments, his Lordship held that the plaintiffs were not retained by the defendants as their architects, but they were entitled to be paid for the work which in his opinion they did for the purpose of the Local Government Board inquiry. The claim, however, was too large, and he would award plaintiffs judgment for £35 14*s*., with costs.

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(N.B.—Local Authorities, architects, and others are invited to submit full particulars for insertion in this weekly list. Where districts are not entered against names of architects and builders the address is as a rule local.)

ENGLAND.

CHESHIRE.

Barnton.—Four houses, for Messrs. Brunner, Mond & Co.

Birkenhead.—Holt Technical School, Higher Tranmere: partial reconstruction (£10,000).

Crewe.—Elementary Council School, off Newdegate Street.

Elton (Chester).—Public Elementary School for 200 places.

Hyde.—Elementary (800 places) and Special Standard (400 places) Schools, off Corporation Street (£20,000).

CORNWALL.

St. Erme.—Four working-class dwellings.

DEVON.

Exmouth.—Church Institute Hall.

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* The use to which the towers at the north end of the Hall were put is interesting. In 1404, Henry IV. granted his Queen Joan the north-west tower "for the management of her councils and business, the auditing of her accounts and the keeping of her charters, writings, muniments, and other evidences." In 1410, John, the King's son, received the grant of a new tower at the entrance of the Great Hall, and the confirmation of this grant in 1413 shows that it was the north-east tower. In 1450 Jasper, Earl of Pembroke, brother of Henry VI., was occupying this tower "for the safeguard and keeping of his evidences and for the communication and easement of himself and his council." Queen Margaret of Anjou was occupying the north-west tower.

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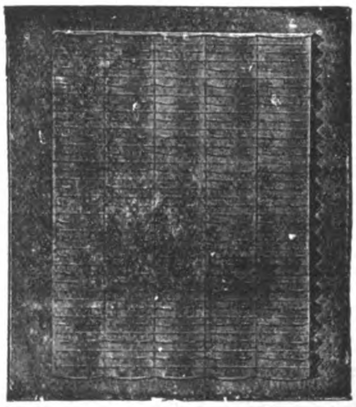

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ENGLAND—*continued.*

DURHAM.

Sherburn.—Hospital: additions and alterations to Master's house.

Wheatley Hill.—House, Crow's House Brickworks, for Mr. G. Burns.

Whitburn.—Projected Rose Joicey Memorial Convalescent Home, for the C.O.S. (£10,000).

Wingate.—Constitutional Club.

ESSEX.

Chelmsford.—Picture and Variety Theatre, Moulsham Street, for "Electric Theatres."

High Garrett.—Seven houses, for Braintree District Council.

HAMPSHIRE.

Newtown.—Parish Hall.

HERTFORDSHIRE.

Baldock.—Sixteen cottages, Bygrave Lane. Messrs. S. Redhouse & Son (of Stotfold), builders.

Codicote.—Proposed Parish Hall, High Street.

St. Albans.—St. Saviour's (new) Parish Hall. Messrs. Mence & Finn, architects, 11 St. Peter's Street.

KENT.

Dover.—Secondary School.

Maidstone.—Business premises, Week Street: extension, for Messrs. Boots. Mr. E. G. Stevenson, architect, Station Street, Nottingham.

LANCASHIRE.

Coppull.—Elementary School.

Irlam.—Technical School.

Liverpool.—Picturedrome (£14,000), Lime Street, for Mr. E. Berry.

Warrington.—R.C. Church. Mr. M. Honan, A.R.I.B.A., architect, 36 Dale Street, Liverpool.

Westhoughton.—Mission Central Hall, Titheburn and King Streets (£800).

LEICESTERSHIRE.

Markfield.—Workmen's dwellings (£2,200), for Market Bosworth R.D.C.

Snibston.—Church (£1,800).

MIDDLESEX.

Ealing.—St. Barnabas' Church, North Ealing.

Fourteen houses and four double-tenement flats, Bramley Road, for the Corporation (£5,000). Borough surveyor.

Hanwell.—Elementary School (for 300 places), Boston Road.

Heston.—County Asylum.

Pinner.—Commercial Travellers' Schools: extension (£12,000).

MONMOUTHSHIRE.

Blaina and Nantyglo.—One hundred and one Council houses (£25,000).

NORFOLK.

Gresham.—Rectory.

NORTHAMPTONSHIRE.

New Duston.—Public Elementary School for seventy-five places.

Wellingborough.—Police Station: additions. Mr. C. S. Morris, County surveyor, County Hall, Northampton.

NORTHUMBERLAND.

Newcastle-upon-Tyne.—Offices, Corn Market: extension, for the Corporation.

NOTTINGHAMSHIRE.

Newark.—Town Hall, Middlegate: proposed extension.

SOMERSET.

Crewkerne.—Twenty Council houses. Council surveyor.

STAFFORDSHIRE.

Bushbury.—Workmen's cottages, Old Fallings, for Sir R. Paget.

Chase Terrace.—Two shops, Sankey's Corner. Mr. H. Horton, architect, Bank Chambers, Cannock.

Old Hill.—Proposed Technical School, Wright's Lane, for Rowley Regis Education Committee.

Stafford.—Premises, Greengate Street, for the Prudential Assurance Company, Ltd.

Tamworth.—Cinematograph Palace, George Street, for Mr. C. H. Dent.

SURREY.

Norbiton.—St. Peter's Church Hall.

SUSSEX.

Angmering.—Four cottages, for East Preston R.D.C.

Bognor.—Council School.

Horsham.—Council School, Oxford Road.

Steyning.—Grammar School: gymnasium (£500).

WARWICKSHIRE.

Atherstone.—Four houses, Coleshill Street, for Mr. R. Fox.

House and stable, Long Street, for Mr. D. Jennings.

Bedworth.—Projected church for 400 to 500 sittings.

Proposed thirty workmen's houses, Wootton Street.

Birmingham. — Northfield Library: re-construction. Messrs. Bateman (F.R.I.B.A.) & Bateman, architects, 18 Bennett's Hill. Mr. J. A. Turton, contractor, 1-3 Wheeley's Road.

Coventry.—Frederick Bird Council School, Swan Lane: proposed additional 420 places.

Foleshill.—Proposed thirty workmen's houses, Bedlam Lane and Lythall's Avenue.

Grendon.—House, Spon Lane, for Mr. Allcock.

Nuneaton.—Children's Home: extension, for the Board of Guardians.

Polesworth.—Two houses, for Messrs. Hazel & White.

Studley.—The "Marlborough" Hotel: alterations, for Messrs. Mitchells & Butler.

YORKSHIRE.

Askern.—Council School, Sutton Road.

Bradford.—Motor garage, Albion House, Greengates, for the Corporation. City architect.

Branch Library and cottage baths, Tennyson Place (£6,800).

Warehouse. Messrs. Walsh & Nicholas, architects, 10 Harrison Road, Halifax.

Gisburn.—Six houses, for Bowland R.D.C.

Grenoside.—Smallpox Hospital (£4,000), for Wortley R.D.C.

Hipperholme.—Four houses, Highfield Avenue, for Mr. J. Jagger.

Henley.—Council and Gas Offices, Eastgate, for the D.C. (£2,500).

Knaresborough.—Children's Homes (£2,600), for the B.G.

Leeds.—General Infirmary: King Edward Memorial extension (£150,000).

Middlesbrough.—Public Elementary School (1,400 places), Grove Hill.

Platt's Common.—Working Men's Club, Wombwell Road (£1,000), for St. Peter's Ward of Hoyland.

Richmond.—Farmhouse, Scotton Estate. Messrs. Clark & Moscrop, FF.R.I.B.A., architects, Feethams, Darlington.

Sheffield.—Picture Palace, Rutland and Burton Roads. Mr. J. E. Whitehead, architect, 38 Bank Street.

South Elmsall.—Church of St. Mary Magdalene, Broad Lane (£500 to £600). Mr. E. H. Walker, A.R.I.B.A., architect, Oriel Chambers, Doncaster.

WALES.

Abercrave.—Baptist Chapel, &c. Mr. J. S. Griffiths (of Seven Sisters), architect.

Aberdare.—Isolation Hospital (£10,000). Trecynon.

Seven Sisters.—Twenty-four houses, Ynysdawly, for the Blaendulais Building Club. Mr. J. S. Griffiths, architect.

SCOTLAND.

Buckie.—Lyceum Picture House, East Church Street. Mr. W. Hendry, architect, 91 West Church Street.

Clydebank.—Alterations and extensions, for Messrs. W. Beardmore & Co., Ltd., Dalmuir (£1,000).

Two villas, Montrose Street (£1,000). Mr. B. C. Maitland, builder.

Coatbridge.—Technical School: extension (£6,850).

Edinburgh.—Croft-an-Righ Brewery, Abbeyhill: re-construction, for Messrs. Steel, Coulson & Co. (£9,000).

No. 52 Moira Place: additions and alterations, for Messrs. Dobbie & Co.

Giffnock.—Public School: completion.

Hamilton. — Stables, Whiteford's Orchard, for the Cleansing Department.

IRELAND.

Ballygawley (Co. Tyrone).—Rectory. Mr. S. Jervois, M.R.I.A.I., architect, Abbey House, Armagh.

Belfast.—Seven houses, off Ormeau Road. Mr. C. Macalister, architect, Whitehall Buildings, Ann Street.

Graiguenamanagh (Co. Kilkenny).—Boys' School. Mr. G. P. Sheridan, A.R.I.B.A., &c., architect, 1 Suffolk Street, Dublin.

Kells.—Sixty workmen's houses (£12,300).

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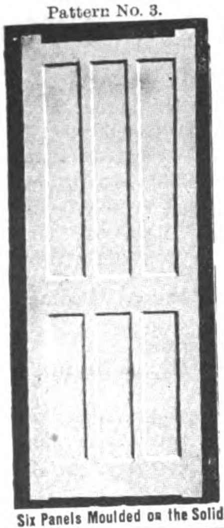

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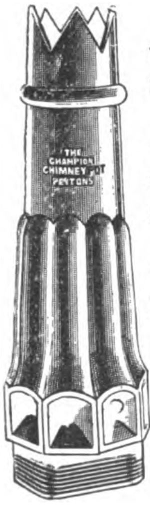

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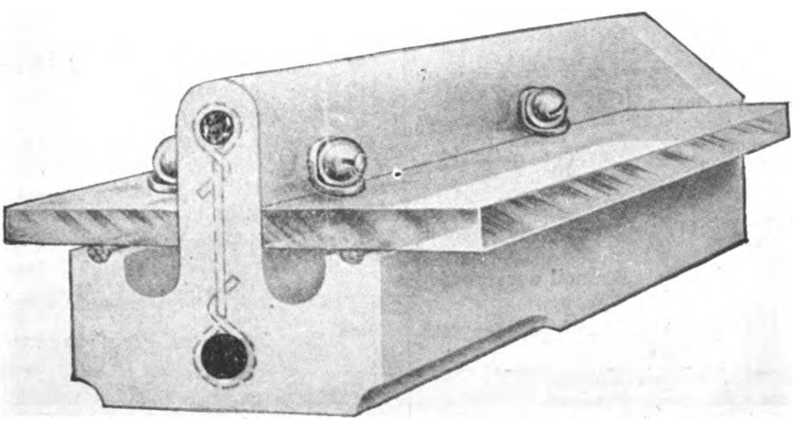

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THE
Architect and Contract Reporter.
FRIDAY, JANUARY 2, 1914.

EDITORIAL NOTICES.

The Editor will always be pleased to examine drawings or articles with a view to publication, but cannot be responsible for the safety of those sent, though every reasonable care will be taken. Contributors desiring payment should clearly state their wishes. No payment will be made until after publication, and a commission to prepare articles or drawings does not necessarily imply acceptance or approval.

No communication can be inserted unless authenticated by the name and address of the writer—not in every case for publication, but as a guarantee of good faith.

We have upon our staff a very eminent Barrister, who will be glad to answer in the columns of this paper any legal question that may be of interest to our readers. All letters must be addressed "Legal Adviser," Office of "The Architect," Imperial Buildings, Ludgate Circus, London, E.C.

The Editor will be glad to receive from Architects in London and the Provinces results of Competitions and Tenders and other particulars of Works in progress in which they may be interested.

TENDERS, ETC.

⁂ *As great disappointment is frequently expressed at the nonappearance of Contracts Open, Tenders, &c., it is particularly requested that information of this description be forwarded to the Office, Imperial Buildings, Ludgate Circus, London, E.C., not later than 2 P.M. on Thursdays.*

COMPETITIONS OPEN.

BATH.—Jan. 31.—The Council invite architects to submit designs for a new secondary school, and have appointed Mr. H. T. Hare, F.R.I.B.A., to act as their assessor. Applications for particulars, accompanied by a cheque for one guinea, which will be returned on receipt of a bona-fide design, to be made to Mr. Fredk. D. Wardle, town clerk, Guildhall, Bath.

BRIGHTON.—Jan. 31.—The Council invite designs for a clock tower to be erected in Queen's Park at a cost (including the clock) not exceeding £1,000. Conditions of competition can be obtained from Mr. Hugo Talbot, town clerk, Town Hall, Brighton.

CANADA.—Jan. 20.—A competition of designs for a Masonic temple building to be erected in Toronto has been announced by the Masonic Temple Corporation. Designs will be received up to Jan. 20, by Mr. W. H. Best, 181 Avenue Road, Toronto, from whom further particulars may be obtained. The first prize will be the commission for designing and supervising the erection of the building. Three other prizes of 750 dollars, 500 dollars, and 250 dollars respectively will be awarded. The estimated cost of the building is to be about £51,400. The conditions of the competition may be seen at the Commercial Intelligence Branch of the Board of Trade, 73 Basinghall Street, E.C.

CANADA (OTTAWA).—April 2.—Architects are invited to submit by April 2 sketch designs in a preliminary competition for the erection of Departmental and Courts Buildings at Ottawa, Ontario. From the designs submitted six will be chosen by the assessors to take part in a final competition, for which the five unsuccessful competitors will each receive an honorarium of 3,000 dollars. The competition is limited to British subjects practising in the British Empire. The Government has appointed Mr. T. E. Collcutt, Mr. J. H. G. Russell, and Mr. J. O. Marchand as assessors. Conditions may be obtained from the High Commissioner for Canada, 17 Victoria Street, London, S.W., and Mr. R. C. Desrochers, secretary, Department of Public Works, Ottawa.

COVENTRY.—Feb. 1.—The Corporation invite competitive sketch-plans not later than Feb. 1. for a municipal technical institute at Pool Meadow. The competition is open to all architects. Particulars may be obtained on payment of £1 1*s.* (returnable on receipt of sketch-plans or the return of the conditions within 14 days of receipt) from the Education Office, 44 Bayley Lane, Coventry.

DURHAM.—Jan. 31.—The County Council invite competitive plans for a residential school for defective children at Glake Hall, near Durham. For conditions of competition apply to the Clerk to the Education Committee, Shire Hall, Durham.

IRELAND.—March 20.—The Belfast Corporation invite competitive designs for an Art Gallery and Museum, to be erected in the Botanic Gardens. The complete scheme will involve an outlay of £75,000, but it is only intended to spend at first £30,000. Mr. John J. Burnet, A.R.S.A., LL.D., will act as assessor. The conditions and plan of site may be had on the payment of £1 1*s.* deposit (returnable on receipt of a bonâ-fide design) to Mr. R. Meyer, Town Clerk, Belfast.

LONDON.—May 4.—The Bridge House Estates Committee of the Corporation of the City of London invite designs from British architects for the architectural treatment of the new St. Paul's Bridge. The conditions of the competition and instructions may be obtained upon payment of a deposit of £3 3*s.*, which will be returned on receipt of a design in accordance with the conditions. A premium of £300 is offered for the design which may be placed first, and further premiums of £200 and £100 respectively. The committee will be advised by Sir William Emerson, P.P.R.I.B.A., as assessor, whose decision will govern the award of the premiums and be final and binding in all stages of the competition. The Town Clerk, Guildhall, London, E.C.

SHIPLEY—Feb. 1.—The Urban District Council invite plans and designs for new Municipal Offices. This competition is open only to architects residing or having offices in any part of Yorkshire. Apply to Mr. I. Lindow, clerk, Council Offices, Shipley.

CONTRACTS OPEN.

ADDERBURY.—Jan. 13.—For erection of a cottage at Adderbury Station, Oxfordshire, for the Great Western Railway Co. The Engineer, Wolverhampton Station.

ARMITAGE.—Jan. 7.—For erection and completion of Council School at Armitage, to accommodate ninety children, for the Staffordshire Education Committee. Send application and £1 1*s.* deposit by Jan. 7 to Mr. G. Balfour, director of education, County Education Offices, Stafford.

(*Continued on page 15.*)

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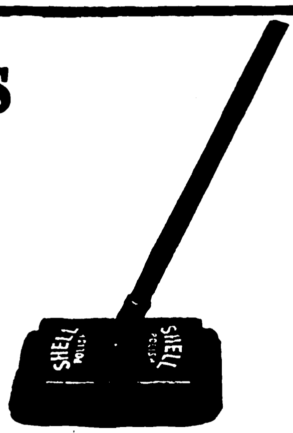

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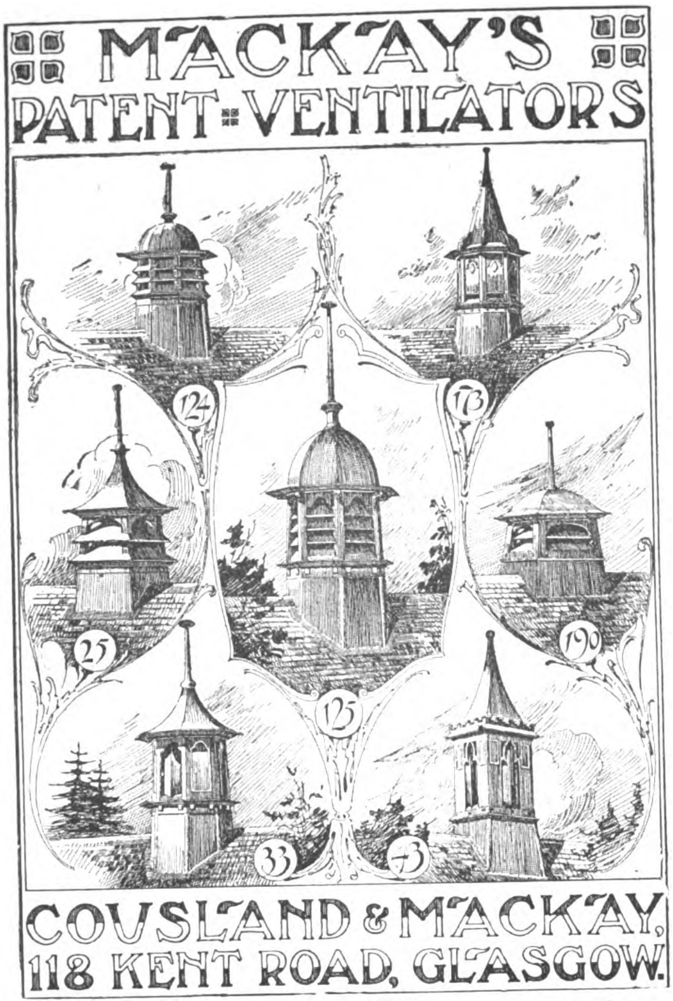
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Barking.—Jan. 12.—For erection of Barking new Post Office, for the Commissioners of H.M. Works and Public Buildings. Deposit £1 1*s*. The Postmaster, Barking, or H.M. Office of Works, Storey's Gate, London, S.W.

Beyton.—Jan. 7.—For erection of a cottage, set of farm buildings, and provision of water supply at Beyton, for the West Suffolk County Council. Mr. A. A. Hunt, M.S.A., county architect, 51 Abbeygate Street, Bury St. Edmunds.

Blackhill.—Jan. 5.—For erection of house and business premises at Blackhill, Durham. The Leadgate Industrial and Provident Society, Ltd., Leadgate.

Bootle.—Jan. 14.—For supply and erection of wrought-iron railings in the south recreation ground, for the Corporation. The Borough Engineer's Office, Town Hall, Bootle, Lancs.

Bournemouth.—Jan. 14.—For proposed conveniences and shelters on the Undercliff Drive, west of Boscombe Pier, and shelters and cliff protection works on the Promenade at Alum Chine, for the Bournemouth Town Council. Deposit £1 1*s*. Mr. F. W. Lacey, M.I.C.E., borough engineer and surveyor, Municipal Offices, Bournemouth.

Brighton.—Jan. 6.—For erection of jockeys' room, weighing room, &c., for the Borough Council. Deposit £2 2*s*. The Borough Surveyor, Town Hall, Brighton.

Carlisle.—Jan. 12.—For erection of a lodge at the Cumberland and Westmorland Joint Lunatic Asylum, Garlands, for the Farm Bailiff. Mr. G. Dale Oliver, F.R.I.B.A., county architect, Carlisle.

Carshalton.—Jan. 14.—For rearrangement of stores block at Queen Mary's Hospital for Children, for the Metropolitan Asylums Board. Deposit £1. Mr. W. T. Hatch, M.Inst.C.E., M.I.Mech.E., engineer-in-chief, Office of the Board, Embankment, London, E.C.

Castleford.—For erection of house and shop in Smawthorne Lane. Messrs. Holt & Shepherd, architects, Carlton Street, Castleford.

Chartham Downs.—Jan. 15.—For erection of two blocks of buildings and other works in connection therewith at the county lunatic asylum at Chartham Downs, near Canterbury, for the Kent County Asylums Committee. Deposit £10. Mr. W. J. Jennings, architect, 4 St. Margaret's Street, Canterbury.

Darlington.—Jan. 7.—For erection of a steel coal-store roof, railway gantries, inspection chambers, &c., at their gasworks, for the Corporation. Deposit £2 2*s*. Mr. F. P. Tarratt, engineer, Gasworks, Darlington.

Droylsden.—Jan. 5.—For erection of a shelter, &c., in connection with the bowling green, for the Urban District Council. The Engineer, Council Offices, Droylsden.

Durham.—Jan. 13.—For extensions to the Durham Johnston School, for the County Council. Mr. W. Rushworth, county education architect, Shire Hall, Durham.

Dunmow.—Jan. 10.—For repairs to Parsonage Bridge, Stebbing, for the Rural District Council. Mr. A. E. Floyd, clerk, Dunmow.

Egremont.—Jan. 5. For the building of a boundary wall, 47 yards long, with 26 feet of wrought-iron railings, and small entrance gate, at Moor Row, for the Egremont Urban District Council. The Surveyor, Town Hall, Egremont, Cumberland.

Egremont.—Jan. 30. For erection and completion of 76 working-class dwelling-houses, and for the construction of roadways, footpaths, sewers, manholes, &c., required in laying out the site at Brisco Road, for the Egremont Urban District Council. Deposit £5 5*s*. Mr. J. S. Stout, M.S.A., architect, 35 Lowther Street, Whitehaven.

Epsom.—Jan. 6.—For alterations and additions to a building on land in Miles Road, adjoining their sewage farm, for the Urban District Council. The Surveyor's Office, Bromley Hurst, Church Street, Epsom.

Ferryhill.—Jan. 13.—For erection of new junior mixed school (for about 200 children) and extensions at Ferryhill Station, for the Durham County Council. Mr. W. Rushworth, Shire Hall, Durham.

Grange-over-Sands (Lancs.).—Jan. 20.—For erection of a convalescent home for the Working-Men's Club and Institute Union, 127 Clerkenwell Road, London, E.C. Deposit £3 3s. Mr. G. Silvester, F.S.I., quantity surveyor, 7 Adam Street, Strand, London, W.C.

Hampreston Ferndown.—Jan. 30.—For erection of an elementary school at Ferndown, for the Dorset County Council Education Committee. The County Offices, Dorchester, and Messrs. Fletcher & Brett, architects, Wimborne.

Hayes.—Jan. 13.—For erection of a station building and platform covering at Hayes, Middlesex, for the Great Western Railway. The Engineer, Paddington Station, London.

Hull.—Jan. 13.—For certain plastering required in the corridors, landings, and staircases, &c., at the workhouse, Beverley Road, for the Guardians of Sculcoates Union. Mr. J. H. Wild, clerk to the Guardians, 12 Harley Street, Hull.

Ireland.—For building four working-class houses in the village of Eden. Mr. H. Blackburne, solicitor, High Street, Carrickfergus.

Ireland.—Jan. 19.—For erection and furnishing of National school buildings at Kilduff, co. Cavan. The Enniskillen R.I.C. Barracks and Belcoo R.I.C. Barracks, co. Fermanagh.

Ireland.—Feb. 7.—For erection of new boiler house, chimney shaft, and new boiler and economiser at the District Lunatic Asylum, Ennis, county Clare. Deposit £3 3*s*. Messrs. Sheehy & Tierney, architects, 57 George Street, Limerick, or Mr. J. Mackey, quantity surveyor, 58 Dame Street, Dublin.

King's Langley.—Jan. 14.—For erection of roof over retort house at Leavesden Asylum, for the Metropolitan Asylums Board. Deposit £1. Mr. W. T. Hatch, M.Inst.C.E., M.I.Mech.E., engineer-in-chief, Office of the Board, Embankment, London, E.C.

King's Lynn.—For erection of stabling, Valinger's Road, for the King's Lynn Working Men's Co-operative Society, Ltd. Mr. H. T. Tilson, M.S.A., architect, Railway Road, King's Lynn.

Lanchester.—Jan. 7.—For the several works required in additions to administrative block at Leadgate Hospital, for the Lanchester Joint Hospital Board. Mr. G. T. Wilson, Lic.R.I.B.A., architect and surveyor, 21 Durham Road, Blackhill.

Lewes.—Jan. 10.—For erection of an elementary school for 160 children in Western Road, St. Anne's, for the Lewes Education Committee. Deposit £2 2*s*. Mr. E. H. Fuller, architect, 19 High Street, Lewes.

Llandovery.—For erection of a motor garage, for Messrs. Daniel Jones & Son, Llandovery. Deposit £3 3*s*. Mr. Glendinning Moxham, F.R.I.B.A., architect, 18 Castle Street, Swansea.

London.—Jan. 5.—For the demolition of certain houses and alterations to others in Abingdon Street, S.W., for the Commissioners of H.M. Works and Public Buildings. Deposit £1 1*s*. H.M. Office of Works, Storey's Gate, London, S.W.

London.—Jan. 8.—For the provision of new linen room, &c., at the Tooting home, Church Lane, Tooting, S.W., for the Guardians of the Wandsworth Union. Deposit £1. Mr. F. W. Piper, clerk, St. John's Hill, Wandsworth, S.W.

London.—Jan. 11.—For alterations to the store yard, Hyde Park, for the Commissioners of H.M. Works and Public Buildings. Deposit £1 1*s*. H.M. Office of Works, Storey's Gate, London, S.W.

London.—Jan. 13.—For extension of the electric substation and erection of workshop at Old Oak Common, near Acton, for the Great Western Railway Co. The New Works Engineer, Paddington Station, London.

London.—Feb. 4.—The Commissioners of H.M. Works, &c., are prepared to receive tenders for the execution of ordinary works and repairs to the buildings in their charge in the (1) North District, (2) South District, for a period of three years from April 1, 1914. Deposit £1 1*s*. in respect of each district. H.M. Office of Works, &c., Storey's Gate, London, S.W. (See advertisement.)

Longton.—For erection of a picture palace, fronting to Upper Normacot Road and Herbert Road, in Normacot, Longton, Staffs. Messrs. Nagington & Shennan, architects, 35 Dale Street, Liverpool.

Longwood.—Jan. 7.—For the various trades (except masons) required in erection of three dwelling-houses in Ballroyd Lane. Mr. A. Shaw, architect, Golcar.

Manchester.—Jan. 7.—For the supply of red terra cotta for extension to municipal school of art, Cavendish Street, C.-on-M., for the Manchester Education Committee. Deposit £1 1*s*. The Education Offices, Deansgate, Manchester.

Menston.—Jan. 19.—For erection of a boiler-house, chimney shaft, and boiler seating, at the West Riding Asylum, Menston, near Leeds. Send £1 deposit to the Treasurer to the Board, West Riding Asylum, Wakefield. Mr. W. E. H. Burton, A.M.Inst.C.E., engineer to the Board, West Riding Asylum, Wakefield.

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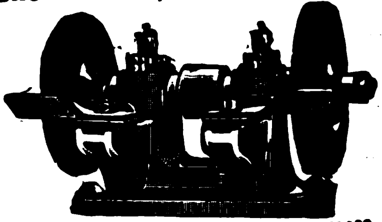

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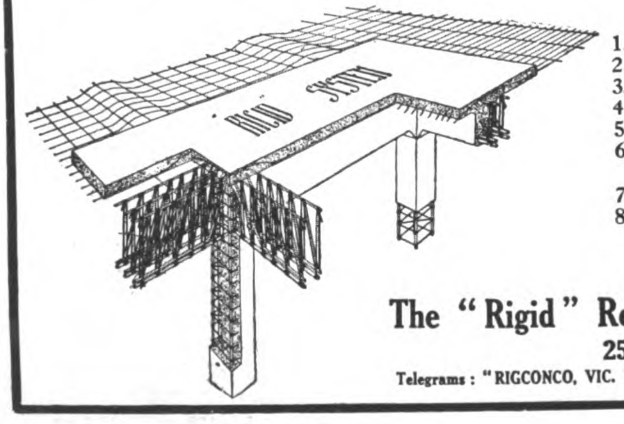

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Mavesyn Ridware (near Rugeley).—Jan. 7.—For erection and completion of a Council School to accommodate 128 children, for the Staffordshire Education Committee. Send applications and £1 1*s.* deposit by Jan. 7 to Mr. G. Balfour, director of education, County Education Offices, Stafford.

Middleton.—Jan. 7.—For the following works in connection with the erection of sanatorium at Middleton, near Ilkley, for the West Riding Public Health and Housing Committee: (1) excavator, concretor, and bricklayer; (2) carpenter and joiner; (3) concrete slab specialist; (4) slater; (5) plumber and glazier; (6) plasterer; (7) painter; (8) ironfounder and smith; (9) pipelayer. Whole or separate tenders. The West Riding Architect, County Hall, Wakefield. Send by separate letter £1 deposit to the West Riding Treasurer, County Hall, Wakefield.

Newport.—Jan. 13.—For erection of eight houses in Corelli Street, Newport, Monmouthshire, for the Great Western Railway Co. The Engineer, Newport Station.

Northallerton.—Jan. 10.—For erection of large washing room at the dairy, Northallerton, involving a considerable amount of steel girder and concrete work, for the Wensleydale Pure Milk Society, Ltd. Mr. C. W. Walker-Tisdale, general manager, the Dairy, Northallerton.

Poppleton Nether.—Jan. 14.—The West Riding Small Holdings and Allotments Committee invite whole or separate tenders for the following works in connection with new farmstead at Poppleton Nether, near York, viz. builder, carpenter and joiner, ironfounder, tiler, plasterer, plumber and glazier, painter. The West Riding Land Agent, County Hall, Wakefield. Send £1 deposit to the West Riding Treasurer, County Hall, Wakefield.

Radcliffe.—Jan. 17.—For construction and completion of sixteen dwelling-houses (in eight blocks of two each), on the Stand Lane site, for the Urban District Council. Deposit £1 1*s.* Mr. W. L. Rothwell, engineer and surveyor, Council Offices, Radcliffe, near Manchester.

Ramsgate.—Jan. 19.—For erection of a shelter on the west cliff, Ramsgate, for the Corporation. Deposit £1. Mr. T. G. Taylor, borough engineer, Ramsgate.

Richmond.—Jan. 14.—For erection of a cookery centre in Paradise Road, Richmond, Surrey, for the Education Committee. Deposit £1 1*s.* Mr. J. H. Brierley, borough surveyor, Town Hall, Richmond, Surrey.

Rodington.—Jan. 9.—For erection of one cottage and one set of farm buildings, about one mile from Rodington, near Wellington, for the Salop County Council. Deposit £1 1*s.* Mr. W. J. Pulford, county land agent, County Buildings, Shrewsbury.

Scotland.—Jan. 10.—For the plumber and joiner work of the public convenience at Mitchell Place, Kirkcaldy, for the Town Council. The Burgh Surveyor's Office, Kirkcaldy.

Scotland.—Jan. 12.—For the mason, joiner, and plaster work required in connection with alterations at 25 Waterloo Place, Edinburgh, for the Edinburgh and Leith Corporations' Gas Commissioners. The Engineer, 15 Calton Hill, Edinburgh.

Scotland.—Jan. 14.—For the following works required in connection with the proposed alterations and additions to the Police Buildings in Albert Street, Govan, viz.: (1) Brick work, (2) joiner work, (3) plumber work, (4) plaster work, (5) slater work, (6) tile work, (7) heating work, (8) electric lighting, and (9) painter work, for the Glasgow Corporation. The Office of Public Works, City Chambers, 64 Cochrane Street, Glasgow.

Southampton.—Jan. 13.—For construction of a reinforced concrete quay at their wharf at Chapel, for the Corporation. Deposit £2 2*s.* The Borough Surveyor, Municipal Offices, Southampton.

Skipton.—Jan. 12.—For the various works required in erection of a warehouse for Mr. D. S. Jones, Newmarket Street. Mr. J. Petyt, architect, Oakworth.

Stanley.—For erection of new drill hall premises at Stanley, for the Durham County Association Territorial Force. Deposit £2 2*s.* Messrs. Wright & Chapman, architects, 38 Grainger Street West, Newcastle-upon-Tyne.

Sudbrook (Mon.).—Jan. 13.—For erection of a stone wall at Sudbrook, Monmouthshire, for the Great Western Railway. The Engineer, Newport Station, Mon.

Wales.—For erection of premises at Mountain Ash, for Messrs. the Metropolitan Bank (of England and Wales), Ltd. Deposit £1 1*s.* Mr. T. W. Millar, M.S.A., architect and surveyor, Mountain Ash.

Wales.—Jan. 7.—For the following works, for the Glamorgan County Council: (1) new temporary school at Tondu; (2) new hoppers at Pontlottyn boys' and girls' school; (3) new roof over cloakrooms at Tynewydd Council School. The County Hall, Cardiff.

Wales.—Jan. 9.—For construction of the stop butts, target and markers' galleries, repairing shop and stores, wardens' houses, officers' and men's quarters, at the Sealand Range, for the Flintshire Territorial Force Association. Deposit £3 3*s.* Messrs. J. H. Davies & Sons, architects, 14 Newgate Street, Chester.

Wales.—Jan. 13.—For erection of a goods shed at Ammanford, for the Great Western Railway Co. The Engineer, Neath Station.

Wales.—Jan. 17.—The Margam Urban District Council invite tenders for the following: Contract No. 3.: Retort house and coal store, in steel and brick, with steel roof, complete with foundations. Contract No. 4: Foundations for purifiers, tar tank, oxide shed and scrubber; also provision of about 100 feet of boundary wall. Contract No. 5: Retort bench and settings, including ironwork, stage flooring, pipe condenser, &c. Contract No. 6: Four cast-iron purifiers, with valves, connections, and lifting gear, oxide shed, cast-iron tar tank, and cast-iron scrubber. The Surveyor's Office, Council Office, Taibach, Port Talbot.

Wales.—Jan. 19.—For extensive alterations and additions to the Pontypridd workhouse, including the erection of new male and female receiving wards, porter's lodge, dining hall, kitchens, new laundry, drainage, and extensive internal alterations and additions. Deposit £3 3*s.* Messrs. Arthur Ll. Thomas & Gomer S. Morgan, architects, 23 Gelliwastad Road, Pontypridd.

Warrington.—Jan. 16.—For erection of a public elementary school, to be known as the Oakwood Avenue Council School, for the Sites and Buildings Committee. Deposit £1 1s. The Education Office, Warrington.

Windsor.—Jan. 8.—For various works connected with extension of the open-air baths in the river Thames—viz. steel sheet piling, excavation, levelling, erection of dressing boxes, &c.—for the Town Council. Mr. E. A. Stickland, borough surveyor, Alma Road, Windsor.

Woolwich.—Jan. 14.—For (1) alteration to laundry and (2) receiving room for measles at the Brook Fever Hospital, Shooter's Hill, for the Metropolitan Asylums Board. Deposit £1 each contract. Mr. W. T. Hatch, M.Inst.C.E., M.I.Mech.E., engineer-in-chief, Office of the Board, Embankment, E.C.

York Town.—Jan. 17.—For erection and completion of a cinema theatre in London Road, York Town, Surrey, for Mr. G. Doman. Mr. W. J. Hodgson, A.M.I.C.E., Vectis, The Avenue, Camberley.

TENDERS.

BATH.

For repairs and alterations at Twerton Technical Institute.

Revised tender.

F. J. Blackmore, Bath (*accepted*)	£1,054 7 1

CROWBOROUGH.

For the erection of a house at Crowborough, Sussex, for Mrs. Jebb. Mr. J. Gordon Allen, A.R.I.B.A., architect, 13 Holmdale Road, West Hampstead, N.W.

A. J. Holcombe, Crowborough (*accepted*)	£896 0 0

FAZELEY.

For the erection of a Council School to accommodate 136 infants, for the Staffordshire Education Committee.

Sharp & Sons, Barton-under-Needwood (*accepted*)	£2,175 0 0

HARTLEY WINTNEY (HANTS.).

For new sewage disposal, sewerage, and drainage works, including tanks, filter beds, machinery, &c., for the District Council. Mr. T. J. Moss-Flower, C.E., engineer, 28 Victoria Street, Westminster, S.W., and Carlton Chambers, Bristol.

J. & T. Binns	£5,737 12 7
Gluyas	5,700 0 0
Crosby & Co.	5,289 7 9
Osman & Co., Southampton (*accepted*)	5,274 9 0
Fitt	5,259 15 9

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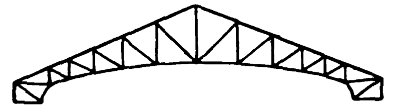

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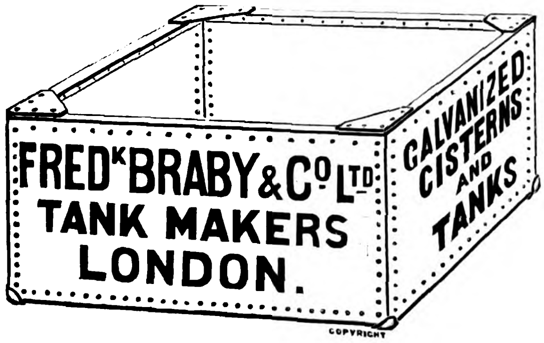

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HOCKWOLD-CUM-WILTON.

For the erection of a school, for the Norfolk Education Committee. Mr. JOHN E. BURTON, architect, Norwich.

Tash & Langley	£2,439	3	0
Sparkes & Latten	2,390	0	0
Collins	2,375	0	0
Shanks	2,266	0	0
W. J. HANNANT, Norwich (*accepted*)	2,165	0	0

MIDSOMER NORTON.

For the erection of a drill hall, sergeant-instructor's cottage, and miniature rifle range, for the Territorial Force Association. Mr. A. J. PICTOR, A.R.I.B.A., architect, Bruton.

Williams & Sons	£2,549	0	0
Lovel	2,179	0	0
Adams & Jefferies	2,090	0	0
Pittard & Son	2,050	0	0
Miller & Son	2,007	4	0
Stockham	1,974	0	0
Heal	1,971	12	0
Dunthorn	1,855	0	0
Bird & Son	1,850	0	0
Smith	1,835	0	0
Webb & Sons	1,771	10	0
James & Sons	1,764	10	0
Coles Bros.	1,750	0	0
J. DYER & SON, Curry Rivel (*accepted*)	1,615	0	0

PELTON.

For the erection of 113 houses at Pelton Village, Durham, for the Chester-le-Street Rural District Council. Mr. J. H. MOLE, surveyor, Chester-le-Street.

P. DUFFY, Stanley (*accepted*)	£26,000	0	0

STUDLAND.

For the erection of twelve cottages in the parish of Studland, Dorset, for the Wareham and Purbeck Rural District Council. Mr. W. WATTS FOOKES, architect. Quantities by the Architect.

Burden	£2,631	0	0
Parsons	2,569	0	0
Burt	2,430	0	0
Parsons & Hayter	2,381	0	0
Pond	2,328	0	0
Bascombe	2,275	0	0
Francis	2,156	0	0
J. LAWFORD, Parkstone (*accepted*)	2,148	0	0
Flower	1,980	0	0

WALES.

For new sewerage and sea outfall works, including the laying and jointing of cast-iron and stoneware pipe sewers, together with manholes, hatch boxes, and flushing chambers; also the construction of screening chamber, 6 ft. diameter tank sewer, penstock chambers, penstock house 4 ft. diameter, cast-iron sea outfall, and other incidental works, for the Tenby (Pembrokeshire) Town Council. Mr. T. J. MOSS-FLOWER, C.E., engineer, 28 Victoria Street, Westminster, S.W., and Carlton Chambers, Bristol.

Jones & Co.	£23,690	0	0
Gluyas	21,987	0	0
Dickson	21,574	0	0
Stow & Co.	21,256	4	8
Binns	21,009	7	6
Wilkinson & Co.	19,423	0	0
J. RILEY, Cheltenham (*accepted*)	18,342	17	6

MR. P. MACGREGOR CHALMERS, I.A., architect, Glasgow, has prepared plans for the renovation and extension of Dailly parish church, which was erected in 1766. The scheme, which has been approved by the Presbytery of Ayr, will mean an outlay of £2,200.

THE increasing demand for storage facilities at the Surrey Commercial Docks, the largest centre for soft wood goods in the world, has recently received the consideration of the Port of London Authority. It has been decided to make a large addition to the under-cover accommodation at the Albion Docks, and to increase considerably the provision for the protection of cargoes landed at berths where vessels overlap the sheds, and at other places where goods are now exposed to the weather. Altogether an expenditure of £30,234 has been resolved upon.

PROPOSED TOWN-PLANNING EXHIBITION IN EDINBURGH.

A MEMORANDUM regarding the Cities and Town-Planning Exhibition it is proposed to be held in Edinburgh in the spring of 1914 has been issued, along with an application to the Town Council of Edinburgh. This Exhibition, at an initial stage of its development, was, it is stated, held in Edinburgh in the Royal Academy (now National) Gallery in February 1910. It has since visited Dublin and Belfast, and during the past season (June-November 1913) it has been a not inconsiderable feature of the Ghent International Exhibition, as constituting the main body of the *Exposition Comparée des Villes*. It has been awarded the "Grand Prix" of the International Exhibition, and, towards its close, repeated overtures have been received for its acquisition and retention upon the Continent. Inquiries have also been received from British and American cities and from various parts of the Empire; and arrangements are at present under discussion with the Board of Trade (Exhibitions Department) and the Local Government Board (for England) towards its official adoption as the British national exhibit at the approaching International Exhibition at Lyons (1914).

For many reasons it is felt desirable, the promoters say, that the Exhibition, which has had its origin and its early development in Edinburgh, should now return for a short period, in its present more elaborated and comprehensive form, before entering upon the large and varied avenues of usefulness which are opening before it. If any doubt be felt as to the expediency of renewing a civic exhibition in Edinburgh, it may be recalled that even three years ago, when the subject was much less familiar than it has now become, the attendance of the Edinburgh public almost triply exceeded that at the larger R.I.B.A. Exhibition held a few months earlier in the Royal Academy Galleries in London.

It is therefore proposed to hold the Cities and Town-Planning Exhibition in Edinburgh for four weeks, from about the end of February to that of March 1914. For this purpose the Lord Provost, Magistrates, and Town Council are respectfully asked to grant (1) the use of the only suitable hall available in Edinburgh, the Corn Exchange, with heating, lighting, and attendance, together with (2) a sum of £300 towards the necessary remaining expenses of the Exhibition. In 1910 the total outlays of the Corporation for the Exhibition, after deducting receipts from gate money, amounted to £459 6s.; but although in view of the greatly enlarged scale of the proposed Exhibition, and the greater expenses incurred by adapting the Corn Exchange to gallery uses by means of screens, &c.—its expenses must be substantially increased, the necessary balance will, there are grounds to hope, be met by gate money and by private guarantees and subscriptions. With the help requested from the Corporation, the Exhibition Committee would be enabled to conduct the Exhibition on the most moderate terms for the public. Profiting by the example of the Cologne Exhibition, it is proposed, if the Corporation grant is approved, to offer space for exhibits illustrating to the public the work of the various departments of the city's services—*e.g.* those of the Water Trust and Gas Commissioners, of the burgh engineer, the Cleaning and Lighting and the Sanitary Departments, of that of the city architect, &c.—and, if possible, similarly to obtain illustrations of the remaining public activities of the city more or less beyond the immediate control of the Town Council, as of poor relief, &c.

MESSRS. CHESTON & PERKIN, FF.R.I.B.A., architects and surveyors, of 3 Tudor Street, E.C., have dissolved partnership by mutual consent and will each conduct his own business separately. Mr. Horace Cheston is to continue at the same address, and Mr. J. Craddock Perkin will move to fresh offices.

IT is with deep regret we have to record the death of Mr. Francis Léon Pither, architect, which took place at his residence, 91 Tollington Park, on the 17th ult. Silver medallist at the Royal Academy School in 1874 and winner of Queen's prize for architecture at South Kensington School, he was for over thirty years Mechanical Drawing Master at University College School and examiner in advanced perspective, &c., to the Board of Education and London Chamber of Commerce. The funeral took place at Highgate Cemetery on Saturday, the 20th ult., and was attended by his numerous friends and colleagues, amongst whom we noticed Dr. Spencer, the headmaster of University College School.

VARIETIES.

THE will of the late Mr. John Belcher, R.A., of Redholm, Champion Hill, Surrey, and of Clifford Street, Bond Street, W., has been proved at £23,926 gross; the net personalty was £23,758.

MR. H. KENDALL, architect, Poole, has prepared plans for the proposed rebuilding and enlargement of the nave of St. Mary's Church, Longfleet, at an estimated cost of £5,000. The church was erected in 1833.

THE Tonbridge Rural District Council (Mr. Frank Harris, surveyor) at their last meeting decided to erect thirty-eight cottages in the district, as follows: Brenchley, 10; Hadlow, 8; Hildenborough, 4; Horsmonden, 8; Pembury, 8. An application for a loan of £7,500 is to be made.

PLANS have been prepared for completing the church of St. Osmund, Parkstone, begun in 1904, by the erection of nave and aisles, at a cost of £7,050. The architects are Mr. E. S. Prior, F.S.A., F.R.I.B.A., and Mr. Arthur Grove, London.

AT the annual meeting of the York Master Builders' and Contractors' Association the following were unanimously re-elected to office for 1914:—President, Councillor J. Hardgrave, J.P.; vice-president, Mr. C. Dent; treasurer, Mr. G. Turner; secretary, Mr. J. Hague.

EAST COWES District Council have been informed by the Local Government Board that they have no power to prepare a town-planning scheme in respect of Crown land. Most of the land in the district is on the Osborne estate, and the Council are desirous of acquiring a site for workmen's dwellings.

THE Port of London Authority have placed contracts with two German firms for three pairs of lock gates, a bascule bridge, a swing bridge, and a caisson for the dry dock in connection with the Royal Albert Dock Extension (South). These contracts were obtained in competition with British firms, and show a saving of nearly 26 per cent. on the lowest British tenders of £179,071.

A NEW bridge is proposed over the Tweed at Berwick. The estimated cost is £40,000, of which Berwick is asked to contribute £6,000, the County Councils of Northumberland and Berwickshire £3,000 each, and the Road Board the remainder. The old bridge, a memorial of the Union, opened in 1624, and still in daily use, will remain untouched by the new scheme.

THE Lilford Weaving Company, Ltd., of Leigh, have taken between seven and eight acres of land on Clarke's Charity Estate, near the Leeds and Liverpool Canal, for the erection of a weaving shed which, when completed, will be the biggest in the town, having accommodation for over 2,000 looms. Plans are being prepared for the erection of 60 cottages round the works.

MR. MALLABY-DEELEY has withdrawn his offer for the site of St. George's Hospital. It is understood that he offered £525,000 for the site, £350,000 to be paid on completion of the purchase and £175,000 to remain on mortgage on the property for ten years at 4½ per cent. The offer was withdrawn on account of the difficulties encountered by the hospital authorities in arranging its acceptance.

THE Council of the Society of Engineers (Incorporated) may award in 1914 a premium of books or instruments to the value of £10 10*s*., for an approved essay on "The Status of the Engineering Profession." The Council reserve the right to withhold the premium if the essays received are not of a sufficient standard of merit. The competition is open to all, but, before entering, application for detailed particulars should be made to the Secretary, 17 Victoria Street, Westminster. The last date for receiving essays is May 30, 1914.

THE work of preserving St. Piran's Oratory, Perranzabuloe, an interesting relic of the early British Church, one of the few remaining in the country, has now been accomplished. A strong concrete shell surrounds the oratory, so constructed as to prevent the sand accumulating and burying the building as before. Some difficulty has been experienced in clearing the foundations of water, but this has been met by drainage. During the summer months it is proposed to open the oratory to the public at stated times.

THE Health Committee of Glasgow Town Council recommend that the Corporation adopt the following resolution, and that the Town Clerk be instructed to forward copies of it to the Prime Minister, the Secretary for Scotland, and the President of the Local Government Board for England: "That the Corporation of the City of Glasgow, believing that further legislation is necessary in order to abate the nuisance caused by the emission of smoke from factory chimneys, urges upon his Majesty's Government to give facilities for a full discussion of the Smoke Abatement Bill, to be introduced by Lord Newton in the House of Lords during the forthcoming session of Parliament, the said Bill having been drafted by the Smoke Abatement League of Great Britain, and having been introduced in the House of Commons during the session of 1913, and favourably received in that House. In the event of his Majesty's Government being of opinion that it is not advisable that the said Bill should be passed into law, then the Corporation urge that a Royal Commission be appointed to consider the question of smoke abatement."

THE London University College Committee have appointed Dr. Tancred Borenius to the Lectureship in the History of Art at University College, vacant through the resignation of Mr. Roger Fry. Dr. Borenius is a graduate of Helsingfors University. Since 1909 he has been constantly engaged in the study of the history of art. He has edited Crowe and Cavalcaselle's "History of Painting in North Italy" (1912), and is preparing a new edition of the last two volumes of Crowe and Cavalcaselle's "History of Painting in Italy." Dr. Borenius has written the catalogue *raisonné* of the Italian pictures in Sir Frederick Cook's collection at Richmond, and is now preparing the catalogue of the pictures in the library of Christ Church, Oxford. He is a constant contributor to the "Burlington Magazine," the "Rassegna d'Arte," and other learned periodicals. Dr. Borenius will deliver a course of lectures on "The History of Art" at University College in the second or third term of the present session. Particulars can be obtained from the Secretary of University College, London (Gower Street, W.C.).

THE half-yearly general meeting of the Building Trades' Employers' Federation was held in Liverpool last week, Mr. N. R. Stirling presiding. The report stated that the increase of membership in some of the local associations had been phenomenal, showing what could be done by means of the inter-trading rule, together with an energetic president and secretary. Some thirty cases of disputes with architects, borough engineers, Corporations, Urban District Councils, and others, submitted by the various local associations, have been successfully dealt with, but in some cases not until after a very severe struggle. A tremendous effort was being made at the present time to uplift prices, and in some districts this had been done very successfully. Revised schedules of prices for measured work will be placed before each Branch Trade Committee in January for their final approval. The relations with operatives continued to be very much disturbed, and 115 notices had been handed in affecting rules in 40 districts.

TRADE NOTES.

A LARGE clock, chiming the Westminster quarters, has just been erected in the Canon Evans Memorial Tower, Walmersley Church, Lancs., by John Smith & Sons, Midland Clock Works, Derby, who have also received instructions for a large clock for Tarleton Church, Lancs.

A NOTIFICATION has been issued by the War Office that the tender of Bell's United Asbestos Co., Ltd., of Southwark Street, London, has been accepted for the supply during the three years from December 17, 1913, of asbestos-cement ("Poilite") roofing slates, wall and ceiling sheets, &c., made at Bell's United Asbestos Company's "Poilite" factory at Harefield, Middlesex.

WE have received from Messrs. Robert Boyle & Son, of London and Glasgow, a leaflet giving illustrations of Boyle's latest patent "Air-Pump" ventilator, design No. 175b, and Boyle's Latest Improved Air Inlet Bracket, design No. 245b, which, though but slightly less ornamental than the catalogued designs Nos. 175 and 245, are equally as effective and well made, and substantially lower in price. Messrs. Boyle also send us an ingenious combined calendar and 5-inch rule.

WE have received from the Great Central Railway Company a copy of the Immingham tide table for 1914. This neat booklet, which has been produced in pocket size, gives the high-water and low-water tides at Immingham for each day of the year, in addition to useful facts and figures, charges, steamship services, &c., respecting the ports of Immingham and Grimsby. Copies of the tide table will be sent free on application to the Great Central Publicity Office, 216 Marylebone Road, London, N.W.

THE
Architect and Contract Reporter.
FRIDAY, JANUARY 9, 1914.

EDITORIAL NOTICES.

The Editor will always be pleased to examine drawings or articles with a view to publication, but cannot be responsible for the safety of those sent, though every reasonable care will be taken. Contributors desiring payment should clearly state their wishes. No payment will be made until after publication, and a commission to prepare articles or drawings does not necessarily imply acceptance or approval.

No communication can be inserted unless authenticated by the name and address of the writer—not in every case for publication, but as a guarantee of good faith.

We have upon our staff a very eminent Barrister, who will be glad to answer in the columns of this paper any legal question that may be of interest to our readers. All letters must be addressed "Legal Adviser," Office of "The Architect," Imperial Buildings, Ludgate Circus, London, E.C.

The Editor will be glad to receive from Architects in London and the Provinces results of Competitions and Tenders and other particulars of Works in progress in which they may be interested.

TENDERS, ETC.

⁂ *As great disappointment is frequently expressed at the nonappearance of Contracts Open, Tenders, &c., it is particularly requested that information of this description be forwarded to the Office, Imperial Buildings, Ludgate Circus, London, E.C., not later than 2 P.M. on Thursdays.*

COMPETITIONS OPEN.

Bath.—Jan. 31.—The Council invite architects to submit designs for a new secondary school, and have appointed Mr. H. T. Hare, F.R.I.B.A., to act as their assessor. Applications for particulars, accompanied by a cheque for one guinea, which will be returned on receipt of a bona-fide design, to be made to Mr. Fredk. D. Wardle, town clerk, Guildhall, Bath.

Brighton.—Jan. 31.—The Council invite designs for a clock tower to be erected in Queen's Park at a cost (including the clock) not exceeding £1,000. Conditions of competition can be obtained from Mr. Hugo Talbot, town clerk, Town Hall, Brighton.

Canada.—Jan. 20.—A competition of designs for a Masonic temple building to be erected in Toronto has been announced by the Masonic Temple Corporation. Designs will be received up to Jan. 20, by Mr. W. H. Best, 181 Avenue Road, Toronto, from whom further particulars may be obtained. The first prize will be the commission for designing and supervising the erection of the building. Three other prizes of 750 dollars, 500 dollars, and 250 dollars respectively will be awarded. The estimated cost of the building is to be about £51,400. The conditions of the competition may be seen at the Commercial Intelligence Branch of the Board of Trade, 73 Basinghall Street, E.C.

Canada (Ottawa).—April 2.—Architects are invited to submit by April 2 sketch designs in a preliminary competition for the erection of Departmental and Courts Buildings at Ottawa, Ontario. From the designs submitted six will be chosen by the assessors to take part in a final competition, for which the five unsuccessful competitors will each receive an honorarium of 3,000 dollars. The competition is limited to British subjects practising in the British Empire. The Government has appointed Mr. T. E. Collcutt, Mr. J. H. G. Russell, and Mr. J. O. Marchand as assessors. Conditions may be obtained from the High Commissioner for Canada, 17 Victoria Street, London, S.W., and Mr. R. C. Desrochers, secretary, Department of Public Works, Ottawa.

Coventry.—Feb. 1.—The Corporation invite competitive sketch-plans not later than Feb. 1. for a municipal technical institute at Pool Meadow. The competition is open to all architects. Particulars may be obtained on payment of £1 1s. (returnable on receipt of sketch-plans or the return of the conditions within 14 days of receipt) from the Education Office, 44 Bayley Lane, Coventry.

Durham.—Jan. 31.—The County Council invite competitive plans for a residential school for defective children at Glake Hall, near Durham. For conditions of competition apply to the Clerk to the Education Committee, Shire Hall, Durham.

Hendon.—March 2.—The Urban District Council invite competitive designs for public baths at the Burroughs, Hendon. Premiums of £100, £75, and £50 are offered for the designs placed first, second, and third by Mr. H. W. Wills, F.R.I.B.A., who will act as assessor. Particulars, &c., may be obtained on payment of £1 1s. deposit (returnable) to Mr. Henry Humphries, clerk, Council offices, Hendon, N.W.

Ireland.—March 20.—The Belfast Corporation invite competitive designs for an Art Gallery and Museum, to be erected in the Botanic Gardens. The complete scheme will involve an outlay of £75,000, but it is only intended to spend at first £30,000. Mr. John J. Burnet, A.R.S.A., LL.D., will act as assessor. The conditions and plan of site may be had on the payment of £1 1s. deposit (returnable on receipt of a bonâ-fide design) to Mr. R. Meyer, Town Clerk, Belfast.

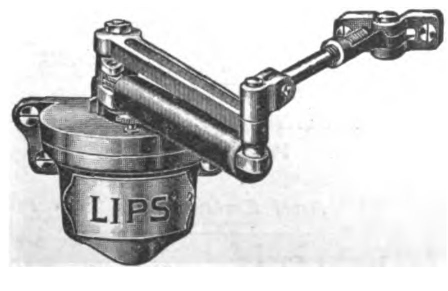
London.—March 11.—The London Society offer a prize (the Gold Medal of the Society and £15) for the best design for the improvement of the north and south entrances to the Broad Walk of Kensington Gardens, London. The Secretary, R.I.B.A., 9 Conduit Street, Hanover Square, London, W.

London.—May 4.—The Bridge House Estates Committee of the Corporation of the City of London invite designs from British architects for the architectural treatment of the new St. Paul's Bridge. The conditions of the competition and instructions may be obtained upon payment of a deposit of £3 3s., which will be returned on receipt of a design in accordance with the conditions. A premium of £300 is offered for the design which may be placed first, and further premiums of £200 and £100 respectively. The committee will be advised by Sir William Emerson, P.P.R.I.B.A., as assessor, whose decision will govern the award of the premiums and be final and binding in all stages of the competition. The Town Clerk, Guildhall, London, E.C.

Shipley—Feb. 1.—The Urban District Council invite plans and designs for new Municipal Offices. This competition is open only to architects residing or having offices in any part of Yorkshire. Apply to Mr. I. Lindow, clerk, Council Offices, Shipley.

(*Continued on page* 27.)

THE "ALL-IN-ONE"



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CONTRACTS OPEN.

ALTRINCHAM.—Jan. 19.—For erection of public conveniences in Kingsway and at Broadheath Bridge, for the Altrincham Urban District Council. Mr. H. E. Brown, surveyor, Town Hall, Altrincham.

BARKING.—Jan. 13.—For erection of workmen's dwellings in St. Paul's Road and Linsdells Road, for the Barking Town Urban District Council. Mr. C. J. Dawson, F.R.I.B.A., architect, Clock House Chambers, East Street, Barking.

BARNET.—Jan. 29.—For erection of Council offices, underground convenience, and work in connection therewith in Wood Street, for the Urban District Council. Deposit £2 2*s*. Mr. W. F. Wilkins, surveyor, 40 High Street, Barnet, Herts.

BILTON.—Jan. 17.—For laying out and fencing land at Croop Hill, in the parish of Bilton, Rugby, for use as a burial ground, and for the erection of a chapel and mortuary, for the Bilton Parish Council. Deposit £2 2*s*. Mr. H. Bulkeley Creswell, F.R.I.B.A., 10 Elborow Street, Rugby.

BOOTLE.—Jan. 25.—For erection and completion of a cemetery chapel in the borough cemetery in Linacre Lane. Deposit £1 1*s*. Messrs. Nagington & Shennan, architects, 35 Dale Street, Liverpool.

CALDERBROOK.—For joiners', slaters', plumbers', builders' (spire), and decorators' work at St. James's Church, Calderbrook, Lancs. Mr. M. Thornley, Calderbrook, Littleborough.

CHARTHAM DOWNS.—Jan. 15.—For erection of two blocks of buildings and other works in connection therewith at the county lunatic asylum at Chartham Downs, near Canterbury, for the Kent County Asylums Committee. Deposit £10. Mr. W. J. Jennings, architect, 4 St. Margaret's Street, Canterbury.

COLCHESTER.—Jan. 19.—For erection of corrugated iron roofing to stock yards at Severalls Hall Farm, Mile End, for the Estate, &c., Committee. Mr. H. Goodyear, A.M.I.C.E., borough surveyor, Town Hall, Colchester.

DENNIS.—Jan. 14.—For erection of a dwelling-house at Dennis, near Padstow, for Mr. J. P. Tom. Mr. Tom, Market Square, Padstow, Cornwall, and Mr. W. T. Martyn Mear, architect, Rock, near Wadebridge.

EGREMONT.—Jan. 30.—For erection and completion of 76 working-class dwelling-houses, and for the construction of roadways, footpaths, sewers, manholes, &c., required in laying out the site at Brisco Road, for the Egremont Urban District Council. Deposit £5 5*s*. Mr. J. S. Stout, M.S.A., architect, 36 Lowther Street, Whitehaven.

GRANGE-OVER-SANDS (LANCS.).—Jan. 20.—For erection of a convalescent home for the Working-Men's Club and Institute Union, 127 Clerkenwell Road, London, E.C. Deposit £3 3*s*. Mr. G. Silvester, F.S.I., quantity surveyor, 7 Adam Street, Strand, London, W.C.

HALIFAX.—Jan. 17.—For the execution of the excavator's and bricklayer's work (contract No. 4) required in the extension of the sewage purification works at Warley Springs, Burnley Road, for the Highways Committee. Deposit £1. Mr. J. Lord, M.I.C.E., borough engineer, Town Hall, Halifax.

HAMPRESTON FERNDOWN.—Jan. 30.—For erection of an elementary school at Ferndown, for the Dorset County Council Education Committee. The County Offices, Dorchester, and Messrs. Fletcher & Brett, architects, Wimborne.

IRELAND.—Jan. 15.—For erection of 252 houses under the Belfast Improvement Order, 1910, for the Public Health Committee. Tenders to be for one house of two rooms and one of three rooms. The Corporation reserve the right to employ one or more contractors. The City Surveyor, City Hall, Belfast.

IRELAND.—Jan. 24.—For building a parochial hall and technical school combined at Carndonagh, co. Donegal, for the Very Rev. Philip O'Doherty, P.P. Mr. W. J. Doherty, architect, 12-14 Castle Street, Londonderry.

IRELAND.—Feb. 7.—For erection of new boiler house, chimney shaft, and new boiler and economiser at the District Lunatic Asylum, Ennis, county Clare. Deposit £3 3*s*. Messrs. Sheehy & Tierney, architects, 57 George Street, Limerick, or Mr. J. Mackey, quantity surveyor, 58 Dame Street, Dublin.

LANCASTER.—Jan. 16.—For the taking down of a chimney at the Lancaster Corporation Gasworks, now in the centre of the retort house, and for the building of a new chimney on an adjacent site, for the Gas Committee. The Gasworks, Lancaster.

LONDON.—Jan. 15.—For execution of certain works required in the construction of an additional vapour bath and refreshment room and alterations to the offices at the public baths, Lower Clapton Road, N.E., for the Hackney Borough Council. The Borough Engineer and Surveyor, Town Hall, Mare Street, Hackney. Send £2 2*s*. deposit to Mr. Norman Scorgie, deputy town clerk.

LONDON.—Jan. 16.—For erection of post office superintending engineer's offices, Denman Street, S.E., for the Commissioners of H.M. Works and Public Buildings. Deposit £1 1*s*. Mr. A. P. Hodges, H.M. Office of Works, Carlisle Place, Westminster, S.W.

LONDON.—Feb. 4.—The Commissioners of H.M. Works, &c., are prepared to receive tenders for the execution of ordinary works and repairs to the buildings in their charge in the (1) North District, (2) South District, for a period of three years from April 1, 1914. Deposit £1 1*s* in respect of each district. H.M. Office of Works, &c., Storey's Gate, London, S.W.

LYDD.—Jan. 26.—The Secretary of State for War invites tenders for the following work: The erection of Camp Commandant's Quarter (Group II.), stable block and site work, drainage, external water and gas, at Lydd, Kent, in the Eastern Command. Send applications and 10*s*. deposit by Jan. 16 to the Director of Barrack Construction, 80 Pall Mall, S.W. (See advertisement.)

MENSTON.—Jan. 19.—For erection of a boiler-house, chimney shaft, and boiler seating, at the West Riding Asylum, Menston, near Leeds. Send £1 deposit to the Treasurer to the Board, West Riding Asylum, Wakefield. Mr. W. E. H. Burton, A.M.Inst.C.E., engineer to the Board, West Riding Asylum, Wakefield.

MENSTON.—Jan. 30.—For the various works required in erection of a diphtheria pavilion and additions to the administration block at the isolation hospital at Menston, Yorks., for the Wharfedale Union Joint Isolation Hospital Committee. Send applications and £1 deposit by Jan. 19 to Messrs. A. Marshall & Son, architects, Otley.

PENGAM (MON.).—Jan. 21.—For erection of a block of twelve shops, with living rooms adjoining, together with all necessary outbuildings, small block of offices, &c., at Pengam garden village, Mon. Mr. W. B. Rees, architect, 3 Dumfries Place, Cardiff.

PLYMOUTH.—Jan. 19.—For alterations and repairs to No. 38 Rendle Street, for the Corporation. Mr. J. Paton, borough engineer and surveyor, Municipal Offices, Plymouth.

RAMSGATE.—Jan. 19.—For erection of a shelter on the west cliff, Ramsgate, for the Corporation. Deposit £1. Mr. T. G. Taylor, borough engineer, Ramsgate.

RICHMOND.—Jan. 14.—For erection of a cookery centre in Paradise Road, Richmond, Surrey, for the Education Committee. Deposit £1 1*s*. Mr. J. H. Brierley, borough surveyor, Town Hall, Richmond, Surrey.

SALTLEY.—Jan. 14.—For works comprised in the construction of stables, loco. shed, and alteration to existing buildings at their sewage outfall works, Saltley, for the Birmingham Tame and Rea District Drainage Board. Mr. J. D. Watson, M.I.C.E., engineer, Tyburn, Birmingham (Castle Bromwich Station, M.R.).

SCOTLAND.—Jan. 12.—For the mason, joiner, and plaster work required in connection with alterations at 25 Waterloo Place, for the Edinburgh and Leith Corporations' Gas Commissioners. The Engineer, 15 Calton Hill, Edinburgh.

STELLA GILL.—Jan. 27.—For erection of nineteen cottages at Stella Gill, near South Pelaw Junction, for the North Eastern Railway. Mr. W. Bell, the Company's architect, Irving House, Westgate Road, Newcastle-on-Tyne.

SUNDERLAND.—Jan. 10.—For erection of electric theatre, Roker Avenue, for the Roker Theatre Co., Ltd. (Mr. G. R. Smith, A.R.I.B.A., architect, Waterloo Chambers, South Shields.) Forward names and £1 1*s*. deposit by Jan. 10 to Messrs. Vasey, Oliver & Co., chartered accountants (secretaries of the Roker Theatre Co., Ltd.), 50 King Street, South Shields.

SWALLOWFIELD.—For erection of two cottages at Swallowfield, Berks., for the Parish Council. Mr. N. T. Salmon, architect, Wokingham.

WALES.—For erection and completion of additions and alterations to the Metal Exchange, Fisher Street, Swansea. Deposit £3 3*s*. Mr. G. Moxham, F.R.I.B.A., architect, 18 Castle Street, Swansea.

WALES.—Jan. 13.—For erection of twenty semi-detached houses at Glyn-Neath, for the Aberpergwm Building Club. Mr. G. A. Treharne, architect, Belmont, Aberdare.

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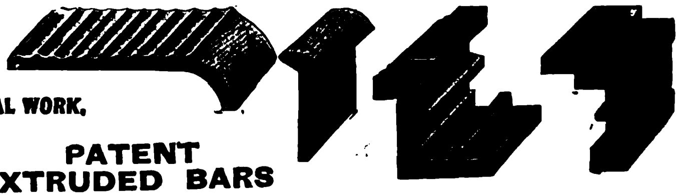

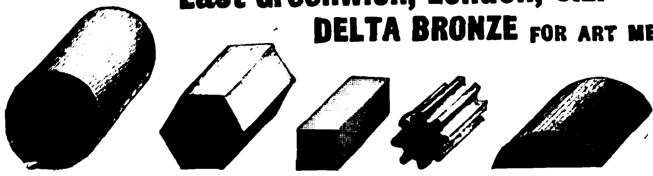

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Wales.—Jan. 12.—For alterations and repairs to Nos. 142 and 143 Gelli Road, Ystrad, for the Trustees of Gelli and Ton Pentre Hibernia Working-Men's Club and Institute. Mr. W. D. Morgan, M.S.A., architect, 194 Ystrad Road, Pentre.

Wales.—Jan. 17.—For the provision of terrazzo flooring at Cardiff Workhouse, for the Guardians of Cardiff Union. Mr. A. J. Harris, clerk, Union Offices, Queen's Chambers, Cardiff.

Wales.—Jan. 19.—For erection of a school at Bettws-y-Coed, for the Carnarvonshire Education Committee. Send names by Jan. 19 to Mr. E. R. Davies, County Education Offices, Carnarvon.

Wales.—Jan. 19.—For extensive alterations and additions to the Pontypridd workhouse, including the erection of new male and female receiving wards, porter's lodge, dining hall, kitchens, new laundry, drainage, and extensive internal alterations and additions. Deposit £3 3*s*. Messrs. Arthur Ll. Thomas & Gomer S. Morgan, architects, 23 Gelliwastad Road, Pontypridd.

Wales.—Jan. 23.—For erection of a drill hall at Argyll Street, Llandudno, for the Carnarvonshire Territorial Force Association. Mr. E. Evans, architect, 8 Castle Street, Carnarvon, and Mr. Tom Hewitt, Queen's Road, Craig-y-don, Llandudno.

Warrington.—Jan. 16.—For erection of a public elementary school, to be known as the Oakwood Avenue Council School, for the Sites and Buildings Committee. Deposit £1 1s. The Education Office, Warrington.

West Bromwich.—Jan. 26.—For erection of homes for mental defectives, &c., in Great Barr Park, for the Walsall and West Bromwich Unions Joint Committee. Send application and £5 5*s*. deposit by Jan. 22 to Mr. G. McMichael, A.R.I.B.A., architect, 105 Colmore Row, Birmingham.

Whitley (Northumberland).—Jan. 26.—For erection of additions adjoining the entrance lodge and extension of boundary wall at the Council's new cemetery, for the Whitley and Monkseaton Urban District Council. (Mr. E. Cratney, M.S.A., Licentiate R.I.B.A., architect, Wallsend-on-Tyne.) Send applications and £2 2*s*. deposit by Jan. 26 to Mr. A. Whitehorn, clerk to the Council, 60 Saville Street, North Shields.

Woolwich.—Jan. 14.—For (1) alteration to laundry and (2) receiving room for measles at the Brook Fever Hospital, Shooter's Hill, for the Metropolitan Asylums Board. Deposit £1 each contract. Mr. W. T. Hatch, M.Inst.C.E., M.I.Mech.E., engineer-in-chief, Office of the Board, Embankment, E.C.

York Town.—Jan. 17.—For erection and completion of a cinema theatre in London Road, York Town, Surrey, for Mr. G. Doman. Mr. W. J. Hodgson, A.M.I.C.E., Vectis,

TENDERS.

BISHOPS WALTHAM.

For the erection of a drill hall, for the County of Southampton Territorial Force Association. Messrs. Hair & Bucknill, architects, Southampton.

Flowers	£1,410	0	0
Jenkins & Son	1,318	0	0
Hunt	1,247	0	0
Draper	1,246	0	0
Hales Bros.	1,242	0	0
Pink	1,199	0	0
Hale Bros.	1,194	0	0
Danbury	1,186	17	7
Creighton	1,160	0	0

DELPH.

For the various works in construction of a filter house, power and battery house, chemical house, washwater tank, sludge tank and reservoir, &c., together with other works in connection therewith, to be erected at their Castleshaw Works, near Delph, for the Oldham Corporation. Mr. Charles J. Batley, M.Inst.C.E., engineer, New Hey.

James Ridyard, Ashton-under-Lyne (*accepted.*)

GILLINGHAM.

For the erection of a villa in Barnsole Road, for Mr. W. Tanner. Mr. F. D. Pott, architect, Gillingham, Kent.

Horne	£301	12	0
Masters	295	0	0
W. W. Hammond, Gillingham (*accepted*)	265	0	0

HEMSWORTH.

For the erection and completion of sixty-two dwelling-houses at Fitzwilliam, Hemsworth, Yorks., for the South Kirkby, Featherstone, and Hemsworth Collieries, Ltd. Messrs. Garside & Pennington, architects and surveyors, Pontefract and Castleford.

Salmon & Co.	£16,570	0	0
Stott & Allcock	15,725	0	0
Thornton & Son	14,650	11	1
Bow	14,560	0	0
Swift Bros.	14,174	0	0
Lister, Brook & Co., Brighouse (*accepted*)	13,824	10	0

LEICESTER.

For additions to dye works, for Messrs. W. Burton & Sons, Ltd. Mr. W. T. Grewcock, A.R.I.B.A., architect, Leicester.

Chapman & Sons	£3,139	0	0
Elliott	3,087	0	0
Haskard, Rudkin & Beck	3,025	0	0
Bentley & Co.	2,996	0	0
Bradshaw Bros.	2,985	5	6
Clarke & Garrett	2,970	0	0
Cole & Sons	2,888	0	0
Bowles & Son	2,844	0	0
Richardson	2,808	0	0
H. Herbert & Sons (*accepted*)	2,800	0	0

All of Leicester.

PONTEFRACT.

For the erection of a nurses' home at the Union workhouse. Messrs. Garside & Pennington, architects and surveyors, Pontefract and Castleford.

Accepted tenders.

A. Askam, builder	£920	0	0
Gelder Bros. & Woodcock, joiners	395	7	11
W. Pearson, plumber	189	0	0
T. W. Senior, plaster	99	10	0
Stewart Bros., slaters	54	0	0
S. Harrison, painter	48	15	0

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A. Gregory & Son, Castleford	1,909	11	0
Lister, Brook & Co., Brighouse	1,793	10	0
R. Walker & Sons, Castleford	1,792	3	4

WALES.

For carrying out alterations to Claremont hydro-hotel, Rhyl, to adapt same for purposes of a convalescent home, for the "William and John Jones" Homes Trustees. Mr. J. H. Swainson, A.M.I.C.E., architect and surveyor, Wrexham. Quantities by the Architect.

Smith	£2,349	0	0
D. Griffiths & Son, Rhyl (*accepted*)	2,307	0	0
Jones & Williams	2,214	0	0
Roberts & Sloss	2,176	0	0
Jones	2,025	14	0

The Bournemouth Town Council adopted on Tuesday last a recommendation from the Pavilion Committee to adopt a scheme for the erection of a pavilion on the Belle Vue site at a cost of £60,000, and that powers be obtained to borrow the money.

The Art Gallery Committee of the Manchester Corporation have decided, subject to the approval of the Council, to invite applications for the post of Art Director which is to be created. The salary is to be £500 per annum. The official to be appointed is to devote the whole of his time to the services of the committee.

The death occurred on the 5th inst. of Mr. George Steane, a well-known architect, of Coventry, in his seventy-third year. Mr. Steane was articled to Mr. Murray, architect, of Coventry, and afterwards removed to London with him. Following a short period with Mr. Pugin, he was engaged as assistant to Mr. Alfred Waterhouse, R.A., at Manchester, and was occupied in various important works in London, Manchester, and elsewhere. At Mr. Waterhouse's death Mr. Steane was left a legacy "in grateful recognition of devoted and efficient services." He left Mr. Waterhouse to commence practice in Coventry, where, in conjunction with his brother, the late Mr. Isaac Steane, he was for forty years engaged in carrying out much of the important local work.

CORRESPONDENCE.

Registration and the Society of Architects.

Sir,—On Monday, January 5, the members of the R.I.B.A. decided unanimously, at a crowded meeting, not to prepare a Bill for the Registration of Architects; consequently, I was very amused to receive by the first post on the 7th inst. a letter from the Society of Architects, dated January 1, touting for members. Apparently the letter had been prepared in advance of the R.I.B.A. meeting, and was posted the day after, so that architects could receive it before having an opportunity of reading a report of the meeting, the statements of Sir Aston Webb and others showing clearly the absurdity of applying to Parliament and the advisability of proceeding by way of a new Charter. Again, the letter was received before architects could read a report of the remarks by our President and others concerning the Society I refer to.—Yours obediently,

Sydney Perks.

Guildhall, E.C.:
January 7, 1914.

The Dublin Building Trade and Non-Union Labour.

Sir,—The attention of my members has been drawn to the fact that gross misrepresentation and interpretation has been circulated in the Press concerning notices of alteration of rules sent out to several of the skilled trades by this Association on the 1st inst., which, if not contradicted, will tend to complicate and nullify negotiations.

I have been instructed, therefore, to state clearly the true facts. The notices in question only cover conditions of labour in operation and unquestioned prior to the present labour trouble.

One paper stated: "The employers are now trying to introduce non-union labour where none previously existed." This is a base fabrication, as the employers have no such intention. Where rules exist between employers and a trade, agreeing that employers shall only employ union workmen, no alteration has been made, or even asked. There are in existence agreements which allow the employers to engage any tradesmen, whether belonging to a union or not. All my members ask is that, where these agreements exist, tradesmen will work amicably as heretofore.

Since the present trouble arose some trade unions have passed resolutions that they will not work with non-union labour in other trades. This would effect a distinct change in the conditions of employment, as heretofore no union interfered with tradesmen outside its own body. The effort to do so now compels my Association to give the regular three months' notice, which we trust will lead, through negotiations, to an amicable settlement.—Yours, &c.,

J. Gibson, Secretary,
Dublin Building Trades Employers' Association.

4 Commercial Buildings, Dublin:
January 5, 1914.

LONDON BUILDING TRADE CRISIS.

On Tuesday and Wednesday last the London Master Builders' Association again considered the best means of dealing with the constant succession of strikes which have been declared by the men since May last in violation of the working rule agreements. At a previous conference on December 23 the master builders had decided to send the following proposals to the Societies concerned:—

1. The return to work of all men to jobs where strikes exist immediately after the holidays.
2. That a Guarantee Trust Fund should be formed by deposits by both sides, to be available for the purpose of paying penalties for strikes or lock-outs in violation of the working rules.
3. That a statement in writing be sent to this Association that your Society deprecates the strikes without the matters in dispute being brought before the Conciliation Board, and that you will undertake to penalise your individual members in case of non-observance of the rules.
4. That an undertaking be given that no attempt will be made on any of the jobs of members of this Association to carry out card inspections.

The replies were received on Monday last, the 5th inst., and were considered by the Master Builders' Association on the two following days. We understand that no suggestion was received in reply. One Society declined the proposals, and the others offered to take a ballot.

At the conclusion of the conference it was decided to inform five trade unions—the carpenters and joiners', bricklayers', masons', plasterers', and labourers'—that the working agreements were no longer in force. The notice is in these terms:—

Koh-i-Noor House, Kingsway, W.C.:
Jan. 7.

Sir,—Your letter was duly brought before my Council yesterday, and I was instructed to inform you that the Council regrets that your Society does not see its way to accept the proposals contained in my letter of the 23rd ult. After further consideration of the existing position my Council resolved that, in view of the action of members of your Society in striking jobs in violation of the working rules of agreement with this Association, and in the absence of any proposals on your part to exercise control of your members in regard to such strikes, my Association hereby gives you notice that the rules with it are no longer in force.

(Signed) S. B. Depree,
Secretary, London Master Builders' Association.

The crux of the situation is whether trade unionists and non-trade unionists should work on the same job, as provided for in the agreements. The master builders are determined to uphold their rights in this matter and, if necessary, to take drastic steps to secure that end.

The area affected by the decision of the masters is within a twelve-mile radius from Charing Cross.

AMERICAN STEEL FOR INDIA.

The problems of building construction in India are described in an American Consular report by Consul Henry D. Balser, who states that one of the most significant recent developments in connection with the construction of large buildings in India has been the increasing use of American reinforcing steel for concrete construction and of various American roofing materials. The use of expanded metal and reinforcing bars imported from the United States has greatly increased economy in recent construction of buildings in India, and it is said that it is cooler and more sanitary than native material. Building operations in India have hitherto been noted for undue cost and unwieldy construction in many particulars. Many houses fall every year during the heavy rains at the break of the monsoon, and as a result, chiefly, of the disasters there is now much more rigid official inspection of building operations in the leading cities. Possibly, says the Consul, there would be a field in India for American architects and building contractors who might introduce more efficient and economical methods, and thus make buildings cost much less and give more safety and comfort.

VARIETIES.

Messrs. Montague Luke & Co., engineers, Plymouth, are advising the Barnstaple Rural Council as to proposed new water supplies for Combemartin and Georgeham.

Messrs. Hatchard-Smith & Son, F.R.I.B.A., have removed from 76 Watling Street, E.C., to 6 Duke Street, Adelphi, W.C. Their new telephone number is 4345 Regent.

The Crediton Urban District Council are about to apply to the Local Government Board for permission to borrow £17,000 for sewage disposal works. The scheme has been prepared by Mr. Jasper.

The Dublin Corporation, at their meeting on Monday last, instructed their Law Agent and Engineer to furnish a report as to the feasibility of erecting the proposed municipal offices by direct labour. This decision is intended as a rebuff to the local master builders.

The death occurred at Lindfield, near Hayward's Heath, on Monday, of Mr. Henry Jones Lanchester, F.R.I.B.A. (retired), who was responsible for laying out, 43 years ago, a considerable part of Hove. Mr. Lanchester, who died on his eightieth birthday, celebrated his golden wedding in 1912.

The Admiralty have placed with Messrs. James Goldie & Son, Glasgow, a contract for the extension of the torpedo factory at Greenock. The extensions will include a new machine shop, a box store, a timber shed, and other departments, and the amount of the contract is understood to be £30,000.

It is proposed to commemorate the association of Benjamin Franklin with the parish of St. Bartholomew-the-Great, Smithfield, where he worked as a printer. In the Lady chapel there are five canopied niches in the east wall waiting for figures of female saints, and the idea is that the gift of one or more such figures would form a suitable memorial.

THE *Illustrated London News*, the oldest-established illustrated journal published in this country, is particularly interesting to the architect in its issue of January 3, containing some excellent reproductions of Indian architecture. Sufficient praise will be accorded when we make the statement that these illustrations are produced in the best *Illustrated London News* style.

THE Local Government Board have forwarded to the Balrothery (Ireland) Rural District Council a letter with reference to their scheme of labourers' cottages, 241 of which are authorised to be built by the Inspector's order, declining to entertain an application for a sum of £41,852 for the purposes of the scheme until the application has been so amended as to allow only £170 for each cottage and allotment. The District Council's estimate of the lowest cost per cottage and allotment is £200.

A LOCAL Government Board inquiry was held last week in Torquay relative to the application of the Town Council for sanction to borrow £15,000 for the extension of the Bath Saloons, including the provision of swimming and medical baths; £250 for the extension of the refuse destructor, and £5,000 for laying a new water main. The scheme for the proposed baths was prepared by Mr. A. J. Taylor, architect, of Bath, and a tender of £14,912 has been provisionally accepted for the work.

THE Local Government Board have sanctioned the application of the Chester Town Council to borrow £2,100 for purchasing 12½ acres of land in Hough Green for 180 workmen's dwellings. The houses will be laid in the form of a garden village. The cottages will not all be built at once, but in blocks as required. Mr. Patrick Abercrombie, M.A., of the Liverpool University Department of Civic Design, is advising the Corporation Housing Committee as to the laying out of the land.

THE Italian Government has, it is understood, decided to proceed with the reconstruction of public buildings in Messina. The Government has already approved of the plans for the reconstruction of the Palace of Justice and the Treasury, the cost of which is estimated at £92,000 and £22,800 respectively. The buildings in course of erection are a Custom House, Post Office, and Police Station. Works for the construction of the Municipal Offices, Provincial Offices and the Education Offices will be put out to contract during the course of 1914. It has also been decided to erect dwelling-houses for the use of people in the employ of the Government, the cost of which is estimated at £164,600. The Belgian Consul-General states that at present the city of Messina presents a very good market for building materials of all kinds.

TRADE NOTES.

MESSRS. GEO. SANDS & SON, LTD., engineers, of Colwick, Nottingham, have removed their London offices from 37 Strand, W.C., to 31 Old Queen Street, Westminster, S.W. Telephone No. 7854 Victoria.

THE British Vacuum Cleaner Co., Ltd. (operating Booth's Patents), Parson's Green Lane, S.W., have recently carried out the following installations: Queen's Cinema, Forest Gate; Balham Palladium, Balham; Olympia, Newport, Mon.; Hippodrome, Huddersfield; Messrs. J. Allder, drapers, North End, Croydon; the Provincial Cinematograph Theatres, Ltd., Newcastle-on-Tyne; Princes Hotel, Hove; Royal Exchange, Newcastle; Granger Picture House, Newcastle; London and N.W.R., Euston; at the offices of the Crown Agents for the Colonies in Millbank; and for the St. Helens Estate, St. Helens.

SIR WM. BURNETT & Co., LTD., Millwall, E., report that they have had a very busy year preserving timber for use in buildings and ships by their patent Burnettising process. By this system the wood is placed in an airtight cylinder and then impregnated under pressure with their uninflammable and odourless preservative, "Burnettizine." As far back as fifteen years ago Burnettised timber was supplied in large quantities to the War Office for use in cold-storage chambers at Gibraltar. The process, therefore, can be accepted as well tried, and its record capable of investigation. Two recent contracts are in connection with new works for Messrs. J. & E. Hall, Dartford, and with new cold-storage at Charterhouse Square, E.C., for the Port of London Authority. "Burnettized" timber has for several years been efficacious under the most trying conditions. For railways, shipbuilding, harbour works, and telegraph poles it has for many years proved completely satisfactory.

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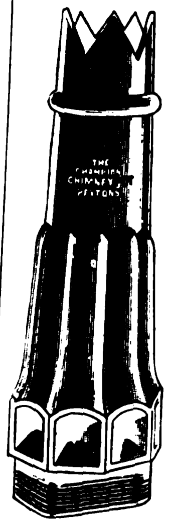

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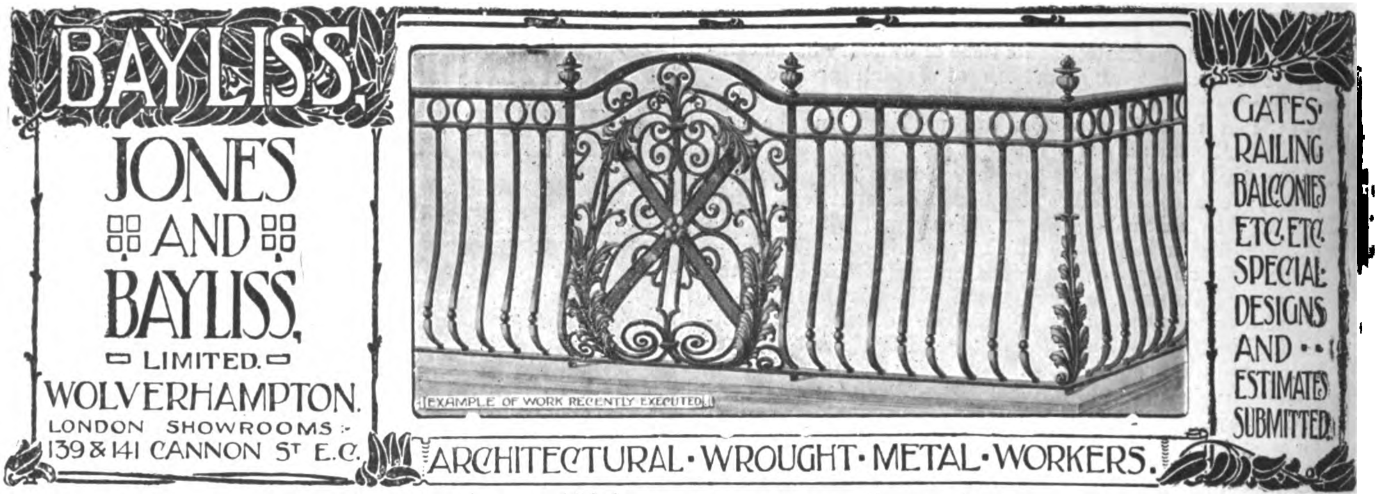

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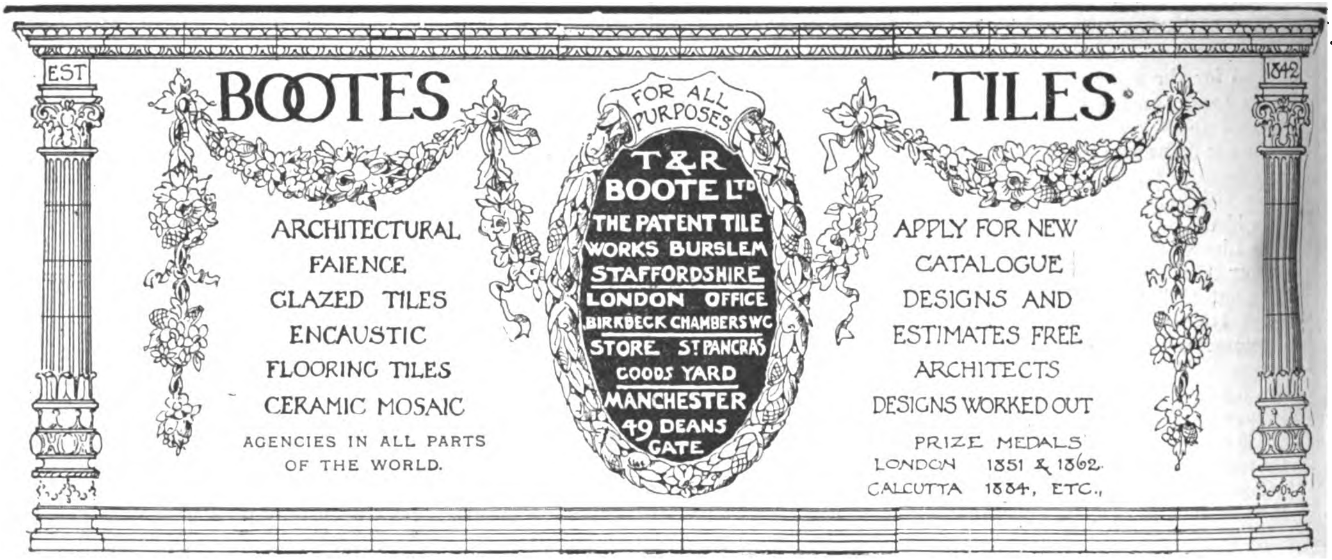

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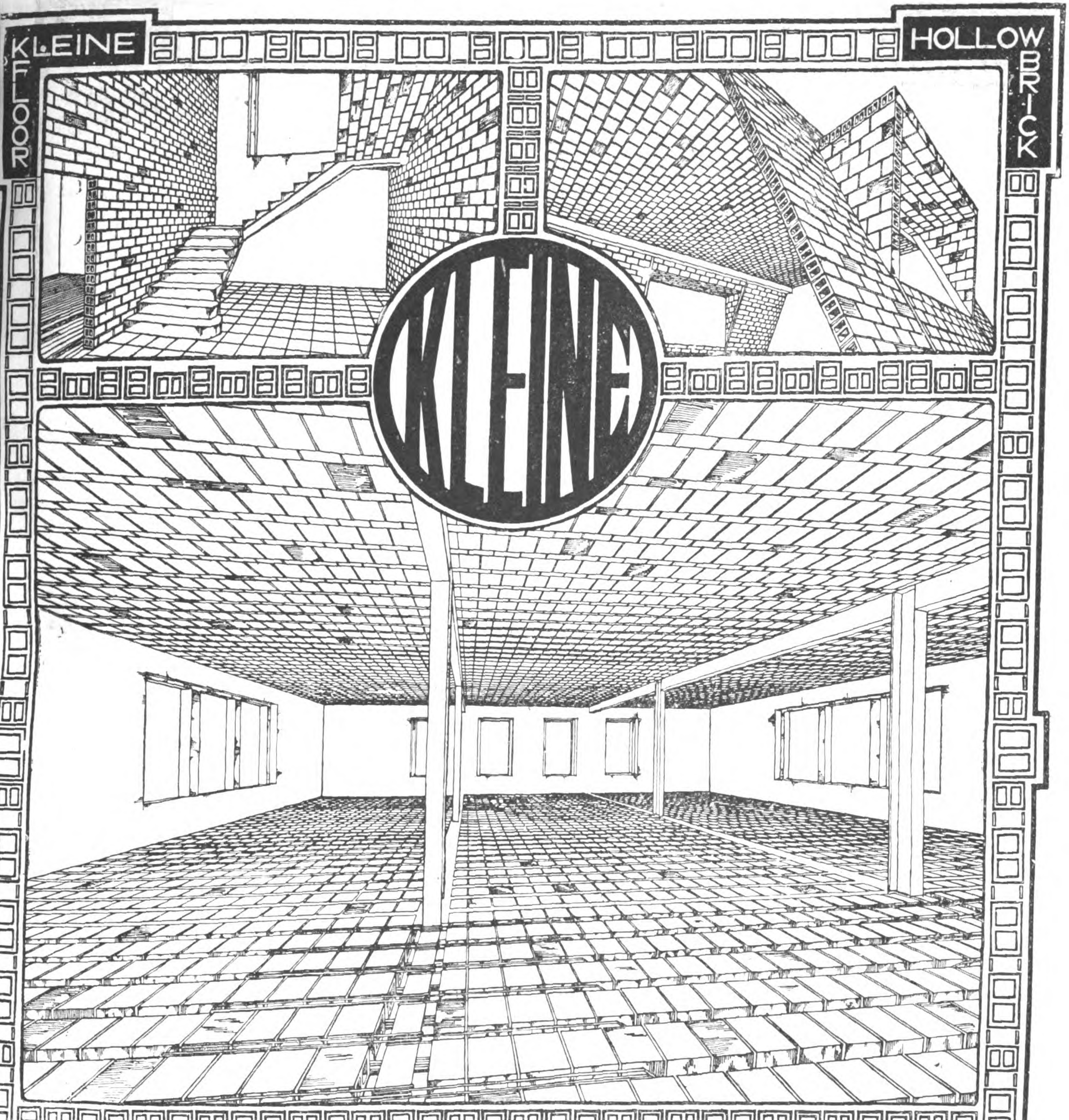
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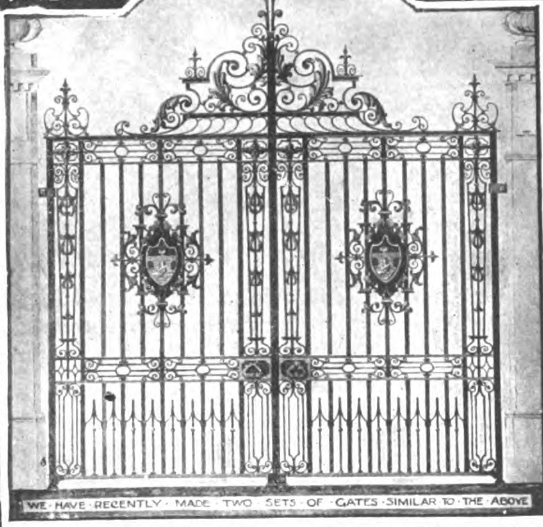

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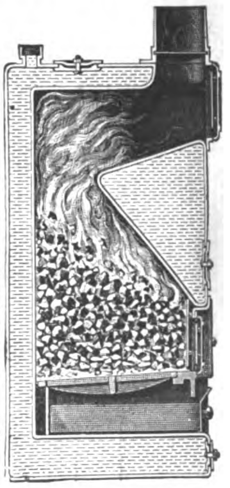

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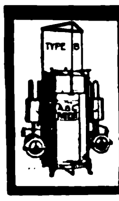

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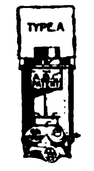

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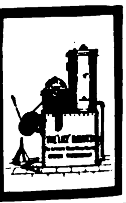

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The Architect and Contract Reporter.

FRIDAY, JANUARY 16, 1914.

EDITORIAL NOTICES.

The Editor will always be pleased to examine drawings or articles with a view to publication, but cannot be responsible for the safety of those sent, though every reasonable care will be taken. Contributors desiring payment should clearly state their wishes. No payment will be made until after publication, and a commission to prepare articles or drawings does not necessarily imply acceptance or approval.

No communication can be inserted unless authenticated by the name and address of the writer—not in every case for publication, but as a guarantee of good faith.

We have upon our staff a very eminent Barrister, who will be glad to answer in the columns of this paper any legal question that may be of interest to our readers. All letters must be addressed "Legal Adviser," Office of "The Architect," Imperial Buildings, Ludgate Circus, London, E.C.

The Editor will be glad to receive from Architects in London and the Provinces results of Competitions and Tenders and other particulars of Works in progress in which they may be interested.

TENDERS, ETC.

⁂ *As great disappointment is frequently expressed at the nonappearance of Contracts Open, Tenders, &c., it is particularly requested that information of this description be forwarded to the Office, Imperial Buildings, Ludgate Circus, London, E.C., not later than 2 P.M. on Thursdays.*

COMPETITIONS OPEN.

Bath.—Jan. 31.—The Council invite architects to submit designs for a new secondary school, and have appointed Mr. H. T. Hare, F.R.I.B.A., to act as their assessor. Applications for particulars, accompanied by a cheque for one guinea, which will be returned on receipt of a bona-fide design, to be made to Mr. Fredk. D. Wardle, town clerk, Guildhall, Bath.

Brighton.—Jan. 31.—The Council invite designs for a clock tower to be erected in Queen's Park at a cost (including the clock) not exceeding £1,000. Conditions of competition can be obtained from Mr. Hugo Talbot, town clerk, Town Hall, Brighton.

Canada (Ottawa).—April 2.—Architects are invited to submit by April 2 sketch designs in a preliminary competition for the erection of Departmental and Courts Buildings at Ottawa, Ontario. From the designs submitted six will be chosen by the assessors to take part in a final competition, for which the five unsuccessful competitors will each receive an honorarium of 3,000 dollars. The competition is limited to British subjects practising in the British Empire. The Government has appointed Mr. T. E. Collcutt, Mr. J. H. G. Russell, and Mr. J. O. Marchand as assessors. Conditions may be obtained from the High Commissioner for Canada, 17 Victoria Street, London, S.W., and Mr. R. C. Desrochers, secretary, Department of Public Works, Ottawa.

Coventry.—Feb. 1.—The Corporation invite competitive sketch-plans not later than Feb. 1. for a municipal technical institute at Pool Meadow. The competition is open to all architects. Particulars may be obtained on payment of £1 1*s*. (returnable on receipt of sketch-plans or the return of the conditions within 14 days of receipt) from the Education Office, 44 Bayley Lane, Coventry.

Durham.—Jan. 31.—The County Council invite competitive plans for a residential school for defective children at Glake Hall, near Durham. For conditions of competition apply to the Clerk to the Education Committee, Shire Hall, Durham.

Hendon.—March 2.—The Urban District Council invite competitive designs for public baths at the Burroughs, Hendon. Premiums of £100, £75, and £50 are offered for the designs placed first, second, and third by Mr. H. W. Wills, F.R.I.B.A., who will act as assessor. Particulars, &c., may be obtained on payment of £1 1*s*. deposit (returnable) to Mr. Henry Humphries, clerk, Council offices, Hendon, N.W.

Ireland.—March 20.—The Belfast Corporation invite competitive designs for an Art Gallery and Museum, to be erected in the Botanic Gardens. The complete scheme will involve an outlay of £75,000, but it is only intended to spend at first £30,000. Mr. John J. Burnet, A.R.S.A., LL.D., will act as assessor. The conditions and plan of site may be had on the payment of £1 1*s*. deposit (returnable on receipt of a bonâ-fide design) to Mr. R. Meyer, Town Clerk, Belfast.

London.—March 11.—The London Society offer a prize (the Gold Medal of the Society and £15) for the best design for the improvement of the north and south entrances to the Broad Walk of Kensington Gardens, London. The Secretary, R.I.B.A., 9 Conduit Street, Hanover Square, London, W.

London.—May 4.—The Bridge House Estates Committee of the Corporation of the City of London invite designs from British architects for the architectural treatment of the new St. Paul's Bridge. The conditions of the competition and instructions may be obtained upon payment of a deposit of £3 3*s*., which will be returned on receipt of a design in accordance with the conditions. A premium of £300 is offered for the design which may be placed first, and further premiums of £200 and £100 respectively. The committee will be advised by Sir William Emerson, P.P.R.I.B.A., as assessor, whose decision will govern the award of the premiums and be final and binding in all stages of the competition. The Town Clerk, Guildhall, London, E.C.

Shipley—Feb. 1.—The Urban District Council invite plans and designs for new Municipal Offices. This competition is open only to architects residing or having offices in any part of Yorkshire. Apply to Mr. I. Lindow, clerk, Council Offices, Shipley.

CONTRACTS OPEN.

Argoed.—Jan. 21.—For erection of a billiard hall and shop premises at Argoed, Mon., for Mr. P. L. Lloyd. Deposit £2 2*s*. Mr. R. Simmonds, architect and surveyor, Royal Chambers, Blackwood.

Ashton-on-Ribble.—Jan. 23.—For the completion of the church and tower of St. Michael's Church, Ashton-on-Ribble, Preston (whole or separate trades). (Messrs. Austin & Paley, architects, Lancaster.) Messrs. Wright & Son, surveyors, Lancaster.

(*Continued on page* 15.)

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Barnet.—Jan. 29.—For erection of Council offices, underground convenience, and work in connection therewith in Wood Street, for the Urban District Council. Deposit £2 2*s*. Mr. W. F. Wilkins, surveyor, 40 High Street, Barnet, Herts.

Beaconsfield.—Feb. 14.—For erection of thirty-four cottages and the construction of roads and sewers, and the provision of all necessary materials and labour, for the Urban District Council. Deposit £3. Mr. H. Sargeant, surveyor, Baring Road, Beaconsfield.

Bishop Auckland.—Feb. 4.—For erection of tuberculosis pavilions and for alterations and additions to the existing administrative blocks at their No. 1 and No. 2 hospitals, situate respectively at Tindale Crescent and Helmington Row, for the Auckland, Shildon, and Willington Joint Hospital Board. Deposit £1 1*s*. Mr. R. B. Thompson, architect, Bishop Auckland.

Blackpool.—Jan. 20.—For erection of a branch reading-room at New Road, Layton, for the Library and Art Gallery Committee. Mr. J. S. Brodie, borough engineer, Municipal Buildings, Market Street, Blackpool.

Blaenavon.—Jan. 26.—For the construction of an eight-target range at Blaenavon, for the Monmouthshire Territorial Force Association. Messrs. Habershon, Fawckner & Co., F.R.I.B.A., surveyors, 41 High Street, Newport, Mon.

Bootle.—Jan. 25.—For erection and completion of a cemetery chapel in the borough cemetery in Linacre Lane. Deposit £1 1*s*. Messrs. Nagington & Shennan, architects, 35 Dale Street, Liverpool.

Buckfastleigh.—Feb. 1.—For erection of three villa residences and boundary walls in Lodger's Park. Deposit 10*s*. 6*d*. Mr. W. J. Goode, architect and surveyor, Buckfastleigh.

Cleator Moor.—Jan. 20.—For erection of leading shed and storehouse for the bakery department of the Cleator Moor Co-operative Society, Ltd., at Cleator Moor. The General Office, Jacktrees Road, Cleator Moor.

Colchester.—Jan. 21.—For the erection of farm buildings, bailiff's house, and two pairs of cottages at Severalls Asylum, Mile End, about 1½ miles north of Colchester main line railway station, for the Committee of Visitors of the Essex and Colchester Lunatic Asylums. Send application and £5 deposit by Jan. 21 to Mr. H. H. Gepp, clerk to the Visiting Committee, 57 New Street, Chelmsford.

Dartford.—Jan. 28.—For the re-erection of two ward blocks in fire-resisting materials at Long Reach Smallpox Hospital, near Dartford, Kent, for the Metropolitan Asylums Board. Deposit £1. Mr. W. T. Hatch, M.I.C.E., M.I.M.E., engineer-in-chief, the Office of the Board, Embankment, E.C.

Dronfield.—Jan. 31.—For alterations and additions to Dronfield Grammar School, for the Governors. Deposit £1 1*s*. Mr. G. H. Widdows, F.R.I.B.A., hon. architect to the Governors, the County Offices, Derby.

Edgware.—Jan. 22.—For erection of iron fire-escape staircases and forming doorways to same at their workhouse, near Edgware, Middlesex, for the Guardians of Hendon Union. Deposit £2 2*s*. Mr. F. J. Seabrook, clerk, Union Offices, Edgware.

Egremont.—Jan. 30.—For erection and completion of 76 working-class dwelling-houses, and for the construction of roadways, footpaths, sewers, manholes, &c., required in laying out the site at Brisco Road, for the Egremont Urban District Council. Deposit £5 5*s*. Mr. J. S. Stout, M.S A., architect, 36 Lowther Street, Whitehaven.

Exeter.—Jan. 19.—For alterations at the Royal Devon and Exeter Hospital. Messrs. E. H. Harbottle & Son, architects, County Chambers, Exeter.

Guiseley.—Jan. 21.—For erection of stables in brick, for the Midland Railway Co. The Engineer's Office, Derby Station.

Hampreston Ferndown.—Jan. 30.—For erection of an elementary school at Ferndown, for the Dorset County Council Education Committee. The County Offices, Dorchester, and Messrs. Fletcher & Brett, architects, Wimborne.

Hendon.—Jan. 22.—For erection of iron fire-escape staircases and forming doorways to same, at the Hendon Union Workhouse, near Edgware. Deposit £2 2*s*. Mr. F. J. Seabrook, clerk, Union Offices, Edgware.

Hertford.—Jan. 29.—For erection and completion of a County Council school at Hertford, for the Hertfordshire Education Committee. Deposit £2 2*s*. Mr. U. A. Smith, county surveyor, Hatfield.

Hull.—Jan. 22.—For the necessary work to be performed in the alterations and additions to Marfleet school. Deposit £2 2*s*. Mr. J. H. Hirst, city architect, Guildhall, Hull.

Ireland.—Jan. 24.—For building a parochial hall and technical school combined at Carndonagh, co. Donegal, for the Very Rev. Philip O'Doherty, P.P. Mr. W. J. Doherty, architect, 12-14 Castle Street, Londonderry.

Ireland.—Jan. 24.—For erection of a church, with boundaries and other works, at Newcastle, for the Rev. James Tuohy. Mr. H. T. O'Rourke, architect, 23 Bachelor's Walk, Dublin.

Ireland.—Jan. 30.—For erection of a hall for the L.O.L. 1270, Irvinestown. Mr. F. E. Townsend, A.M.I.C.E., Forthill House, Enniskillen.

Ireland.—Jan. 31.—For erecting and completing a postmaster's residence at Tuam, county Galway. Tuam Post Office and Office of Public Works, Dublin.

Ireland.—Feb. 2.—For erection and furnishing of National school buildings at Ballinderrig, county Galway. The Tuam R.I.C. Barracks and the District Office of Public Works, Galway.

Ireland.—Feb. 7.—For erection of new boiler house, chimney shaft, and new boiler and economiser at the District Lunatic Asylum, Ennis, county Clare. Deposit £3 3*s*. Messrs. Sheehy & Tierney, architects, 57 George Street, Limerick, or Mr. J. Mackey, quantity surveyor, 58 Dame Street, Dublin.

Kendal.—Jan. 23.—For the whole or separate trades in considerable renewals, alterations, and repairs to houses facing Strickland Gate, and all up the yard, for the Trustees of the late Mr. Jopson. Mr. S. Shaw, F.R.I.B.A., architect, Kendal.

Kettering.—Jan. 20.—For supply of about twelve tons of steelwork, in seven trusses, for public baths, for the Kettering Urban District Council. Deposit £1 1*s*. Mr. T. R. Smith, surveyor, Market Place, Kettering.

Kettering.—Jan. 21.—For erection of public baths on a site near Bath Road, for the Kettering Urban District Council. Deposit £1 1*s*. Mr. T. R. Smith, surveyor, Market Place, Kettering.

Kirkoswald.—For alterations and re-roofing and re-flooring of old factory at Kirkoswald, Notts, for Sir Francis Ley, Bart. Deposit £1 1*s*. Mr. E. R. Ridgway, architect, Long Eaton, Nottingham.

Leeds.—Jan. 27.—For the demolition of the existing bridge and the construction of abutments, jack arches, concreting and paving work, but no steelwork, for a new 40-feet wide bridge over Low Beck, Domestic Street, Holbeck, Leeds. Mr. W. T. Lancashire, city engineer, Municipal Buildings, Leeds.

London.—Feb. 4.—For erection of schools and caretaker's cottage in Alexandra Road, Hounslow, for the Heston and Isleworth Urban District Education Committee. Deposit £2 2*s*. Mr. J. G. Carey, architect and surveyor, Council House, Hounslow.

London.—Feb. 4.—The Commissioners of H.M. Works, &c., are prepared to receive tenders for the execution of ordinary works and repairs to the buildings in their charge in the (1) North District, (2) South District, for a period of three years from April 1, 1914. Deposit £1 1*s*. in respect of each district. H.M. Office of Works, &c., Storey's Gate, London, S.W.

Lydd.—Jan. 26.—The Secretary of State for War invites tenders for the following work: The erection of Camp Commandant's Quarter (Group II.), stable block and site work, drainage, external water and gas, at Lydd, Kent, in the Eastern Command. Send applications and 10*s*. deposit by Jan. 16 to the Director of Barrack Construction, 80 Pall Mall, S.W.

Manchester.—Jan. 27.—For the following in connection with extensions and alterations at their electric car shed, Hyde Road, for the Tramways Committee—viz.: (*a*) general builders' work; (*b*) constructional steel and cast-iron work. Send £3 3*s*. deposit to Mr. J. M. McElroy, general manager, Corporation tramways, 55 Piccadilly, Manchester. Mr. J. Gibbons, architect, 4 St. Mary's Parsonage, Manchester.

Mansfield.—Jan. 24.—For out-offices, drains, formation of playgrounds, fencing, &c., in connection with the proposed temporary school at Rainworth, for the Education Committee. Mr. T. P. Collinge, A.M.I.C.E., borough engineer and surveyor, Exchange Row.

Mablethorpe.—Feb. 3.—For erection of a pair of cottages at Mablethorpe on the farm now in the occupation of Mr. H. H. Gray, for the Small Holdings Committee of the Lindsey County Council, Lincs. Mr. H. C. Tong, county land agent, County Council Offices, Mint Street, Lincoln.

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Menston.—Jan. 30.—For the various works required in erection of a diphtheria pavilion and additions to the administration block at the isolation hospital at Menston, Yorks., for the Wharfedale Union Joint Isolation Hospital Committee. Send applications and £1 deposit by Jan. 19 to Messrs. A. Marshall & Son, architects, Otley.

Middlesbrough.—Jan. 22.—For the erection and completion of a laundry at the sanatorium, West Lane, for the Corporation. Mr. S. E. Burgess, M.I.C.E., borough engineer, Municipal Buildings, Middlesbrough.

Oldham.—Jan. 20.—For the erection of sixteen wastewater closets at Nos. 92 to 140 Eldon Street, for the Health Committee. The Borough Surveyor's Office, Oldham.

Portsmouth.—Jan. 26.—For erecting completing, and maintaining in thorough repair for six calendar months a hostel for girls at Milton, and the pulling down of some old buildings, for the Town Council. Deposit £3 3*s*. Mr. C. W. Bevis, F.R.I.B.A., architect, Elm Grove, Southsea.

Riddlesden.—Jan. 22.—For erection of a house in Scott Lane, Riddlesden. Messrs. J. Haggas & Sons, architects, North Street, Keighley.

Rochdale.—Jan. 21.—For repairing (buttressing if necessary) on Medow Side stone fence wall and raising wall in Birch Hill Lane, leading to cottage homes, for the Guardians. Mr. R. A. Leach, clerk, Union Offices, Townhead, Rochdale.

St. Germans.—Jan. 31.—For alterations and additions to Catchfrench, St. Germans, Cornwall. Deposit £2 2*s*. Mr. A. J. Cornelius, M.S.A., architect, Truro.

Saltburn.—Jan. 28.—For certain additions to the caretaker's cottage, Saltburn High School, and the construction of large coal and coke cellar for the school, for the North Riding of Yorkshire County Council (Education Committee). Mr. J. C. Wrigley, secretary, Education Offices, Northallerton.

Scotland.—Jan. 21.—For (1) mason, carpenter, and slater works of alterations to Reiketlane Farm steading, near Elgin, and (2) mason, carpenter, slater, plumber, plaster, and painter works of new cottage at Rashcrook Farm, Birnie. Mr. A. Cameron, factor, Elgin.

Scotland.—Jan. 22.—For the mason, carpenter, and slater work of (1) new barn at Nether Dallachy; (2) repairs to dwelling-house and men's room, Oxhill; (3) straw sheds at Bogs of Enzie; (4) for mason and carpenter work of covered court at Newton; and (5) repairs to roof of stable and men's room at Westertown. Mr. D. J. Cunningham, factor, the Gordon-Richmond Estates Office, Fochabers.

Scotland.—Jan. 22.—For the mason, carpenter, slater, plumber, plaster, and painter works of (1) cottage in Burghead for Mr. J. M'Kenzie; (2) cottage in Hopeman for Mr. T. Slater. Mr. J. Wittet, architect, Elgin.

Scotland.—Jan. 22.—For the mason, joiner, plumber, plasterer, and slater works required in alterations on six dwelling-houses at stable buildings at Rossend, for the Burntisland Town Council. Mr. J. A. Waddell, burgh surveyor, Burntisland.

Scotland.—Jan. 28.—For the several works required in connection with the proposed erection of caretaker's house, shelter, and lavatories in Cathkin Braes Park, for the Glasgow Corporation. The Office of Public Works, 64 Cochrane Street, Glasgow.

Sunderland.—Jan. 16.—For proposed alterations to premises corner of Fawcett Street and Borough Road, for Messrs. H. Binns, Son & Co., Ltd. Deposit £1 1*s*. Messrs. Wm. & T. R. Milburn, FF.R.I.B.A., 19 Fawcett Street, Sunderland.

Taplow.—Feb. 2.—For erection of a police cottage at Taplow, for the Bucks. Standing Joint Committee. Mr. R. J. Thomas, M.I.C.E., county surveyor, County Hall, Aylesbury.

Tredegar.—Jan. 20.—For alterations and additions to Park Place surgery, for the Tredegar Workmen's Medical Aid Society. Mr. A. F. Webb, M.S.A., architect and surveyor, Blackwood, Mon.

Wales.—Jan. 19.—For erection of certain extensions and alterations to the Cross Inn Hotel, Ammanford, for Mr. O. D. Edwards. Deposit £1 1*s*. Mr. D. Thomas, architect, &c., 10 Quay Street, Ammanford.

Wales.—Jan. 22.—For erection of one villa at Bedwas, for Mr. C. A. Preece. Mr. G. L. Rees, architect and surveyor, Bedwas.

Wales.—Jan. 23.—For erection of a drill hall at Argyll Street, Llandudno, for the Carnarvonshire Territorial Force Association. Mr. E. Evans, architect, 8 Castle Street, Carnarvon, and Mr. Tom Hewitt, Queen's Road, Craig-y-don, Llandudno.

Wales.—Jan. 24.—For erection of proposed Carnegie free library at Port Talbot, for the Margam Urban District Council. Deposit £3 3*s*. Mr. J. Cox, surveyor to the Council, Port Talbot.

Wales.—Jan. 26.—For the erection of general offices at Fernhill, Treherbert, for the Fernhill Collieries, Ltd. Deposit £1 1*s*. Mr. R. S. Griffiths, M.S.A., architect and surveyor, Tonypandy.

West Bromwich.—Jan. 26.—For erection of homes for mental defectives, &c., in Great Barr Park, for the Walsall and West Bromwich Unions Joint Committee. Send application and £5 5*s*. deposit by Jan. 22 to Mr. G. McMichael, A.R.I.B.A., architect, 105 Colmore Row, Birmingham.

Widnes.—Jan. 29.—For certain alterations and additions to the Accident Hospital, for the Corporation. Deposit £1 1*s*. Mr. J. S. Sinclair, A.M.I.C.E., borough surveyor, Town Hall, Widnes.

Whitley (Northumberland).—Jan. 26.—For erection of additions adjoining the entrance lodge and extension of boundary wall at the Council's new cemetery, for the Whitley and Monkseaton Urban District Council. (Mr. E. Cratney, M.S.A., Licentiate R.I.B.A., architect, Wallsend-on-Tyne.) Send applications and £2 2*s*. deposit by Jan. 26 to Mr. A. Whitehorn, clerk to the Council, 60 Saville Street, North Shields.

Wood Green.—Jan. 28.—For erection of a pavilion on the recreation ground in White Hart Lane, for the Urban District Council. Mr. C. H. Crosford, engineer and surveyor, Town Hall, Wood Green.

TENDERS.

ABERTYSSWG.

For the erection of fifty houses, and also for the formation of roads and lanes, near station, Abertysswg, Mon., for the Tredegar Iron and Coal Co., Ltd. Mr. A. F. Webb, M.S.A., architect, Blackwood, Mon.

Botto	£16,804	0	0
Francis	14,350	0	0
Jones	14,000	0	0
Warn	13,750	0	0
Walters & Son	11,656	0	0
Harries	10,542	3	0

DURHAM.

For the erection of screening chamber and apparatus at the city sewage works, Barker's Haugh.

G. Bailey, Ltd., Newcastle-on-Tyne (*accepted*)	£1,680	0	0

HASLEMERE.

For the erection of the cottage and other buildings on the depôt land.

Madgwick	£757	0	0
Chapman, Lowry & Puttick	696	0	0
Bunning & Fitton	604	0	0
Milton & Sons	587	0	0
Privett	587	0	0
Bargery	579	0	0
Cæsar & Sons	572	0	0

HIGH WYCOMBE.

For the erection of a classroom at Bledlow schools, together with fencing and levelling of ground, for the High Wycombe Board of Guardians.

Clark	£547	13	8½
Lacey	540	0	0
Gibson	482	0	0
Turner	471	10	0
J. T. Harris, High Wycombe (*accepted*)	459	0	0
Dean	450	0	0

LONDON.

For erection of the proposed electricity sub-stations, for the Hackney Borough Council.

Northwold Road.

Horswill	£3,461	0	0
Moss & Son	3,245	4	11
S. Roberts, Ltd.	2,760	6	8
Rice & Son, Stockwell Road (*recommended*)	2,527	0	0
Coxhead	2,569	0	0
F. & G. Foster (*withdrawn*)	2,399	0	0
Webster & Son (*withdrawn*)	2,317	18	7

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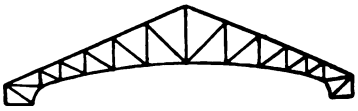

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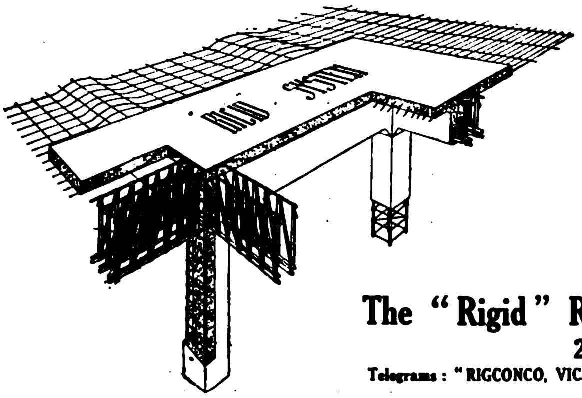

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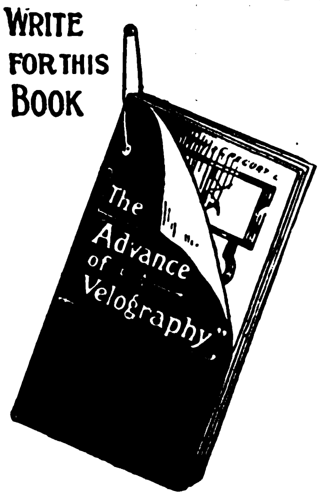

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LONDON—*continued.*

Dalston Lane.

Horswill	£4,322	0	0
Moss & Son	3,790	5	5
S. Roberts, Ltd.	3,630	8	1
Coxhead	3,313	0	0
Rice & Son (*recommended*)	3,342	0	0
F. & G. Foster (*withdrawn*)	3,198	0	0
Webster & Son (*withdrawn*)	3,088	19	9

Balcorne Street.

Horswill	4,498	0	0
Moss & Son	3,890	5	7
S. Roberts, Ltd.	3,719	0	0
Coxhead	3,440	0	0
Rice & Son (*recommended*)	3,341	0	0
Webster & Son (*withdrawn*)	3,128	14	8
F. & G. Foster (*withdrawn*)	2,992	0	0

For the extension of the administration block at the Isolation Hospital, Ealing.

F. W. Hidden & Co., Ltd., Brentford (*accepted*)	£499	10	0

For the electric wiring of the Town Hall extension, Ealing.

W. J. Dickens, Ealing (*accepted*)	£100	0	0

MANSTONE.

For alterations, repairs, and redecoration of "Highlands," for Mr. Edward Browne. Mr. Stanley H. Page, F.S.I., architect, Ramsgate.

Larkin & Co.	£288	0	0
Dunn	267	0	0
Grummant Bros.	200	0	0

MARGATE.

For alterations and additions to the infantry drill hall, Margate, for the Kent Territorial Force Association. Mr. Stanley H. Page, F.S.I., architect, Ramsgate.

Ross & Co.	£1,725	0	0
Denne & Sons	1,575	0	0
Grummant Bros.	1,560	0	0
Stiff	1,550	0	0
Browning	1,463	0	0
Elliott & Co.	1,395	0	0

RAMSGATE.

For the erection of a golf club-house, for St. Augustine's Links, Ltd. Mr. Stanley H. Page, F.S.I., architect, Ramsgate.

Denne	£1,900	0	0
Turner & Watts	1,878	0	0
Browning	1,824	0	0
Martin	1,737	0	0
Grummant Bros.	1,650	0	0

For the erection of a detached house for Mr. W. A. Fenwick. Mr. Stanley H. Page, F.S.I., architect, Ramsgate.

E. W. Martin	£594	0	0
W. W. Martin	575	0	0
Knight	560	0	0
Grummant Bros.*	540	0	0

* Accepted in a modified form.

SAWBRIDGEWORTH.

For the construction of a Council Chamber and offices over the fire station, for the Urban District Council. Mr. A. T. Watts, surveyor to the Council.

Day & Son	£295	0	0
D. Robinson, junr.	295	0	0
Glasscock & Sons' Successors	290	0	0
Hockley	286	0	0
H. & G. Burton	265	0	0
Markwell & Sons	252	10	0
H. Rooke & Sons, Cambridge (*accepted*)	225	0	0

TWICKENHAM.

For the construction of a tunnel under the river Thames between Twickenham and Richmond, for the Metropolitan Water Board.

Tunnel Driven from both Shafts—Compressed Air not used.

Mowlem & Co.	£55,005	0	0
Pearson & Son	54,106	17	1
Perry & Co. (Bow), Ltd.	44,633	0	0
Shellabear & Son	43,077	6	1
Southorn & Co.	42,423	0	0
Dick, Kerr & Co.	37,955	0	0
McAlpine & Sons	37,860	9	0

TWICKENHAM.—*continued.*

Ditto—Compressed Air used.

Pearson & Son	£60,579	14	5
Mowlem & Co.	60,219	0	0
Shellabear & Son	51,914	17	10
Perry & Co. (Bow), Ltd.	51,000	0	0
Southorn & Co.	49,076	17	0
Dick, Kerr & Co.	47,807	0	0
McAlpine & Sons	40,365	15	0

Tunnel Driven from One Shaft—Compressed Air not used.

Mowlem & Co.	52,705	0	0
Pearson & Son	51,739	9	1
Muirhead & Co.	50,025	17	4
Perry & Co. (Bow), Ltd.	40,433	0	0
Shellabear & Son	40,077	6	1
Southorn & Co.	39,243	0	0
Scott & Middleton	38,406	7	9
McAlpine & Sons	35,529	9	0
Price & Son	35,427	18	6
Dick, Kerr & Co.	35,155	0	0

Ditto—Compressed Air used.

Mowlem & Co.	57,919	0	0
Pearson & Son	56,252	6	5
Muirhead & Co.	55,958	8	4
Shellabear & Son	46,114	17	10
Southorn & Co.	45,896	17	0
Perry & Co. (Bow), Ltd.	45,323	0	0
Dick, Kerr & Co.	43,407	0	0
Scott & Middleton	41,990	6	0
Price & Son	40,888	6	4
R. McAlpine & Sons, 25 Victoria Street, S.W. (*accepted*)	37,404	15	0

THE LATE MR. JAMES CHARLES TANNER.

We regret to announce the death, in his forty-fourth year, of Mr. James Charles Tanner, chief clerk of the Royal Institute of British Architects. Mr. Tanner had been in ill-health for some two years past suffering from pulmonary consumption, and he died in Brompton Hospital on Tuesday, the 13th inst., four days after admission. He had been in the service of the Institute for over twenty-eight years.

THE BUILDING TRADE.

In the Annual Trade Review of *The Chamber of Commerce Journal* Mr. J. J. Jarvis, Managing Director of J. Jarvis & Sons, Ltd., deals with the building trade in 1913, and also with the outlook for 1914. From the article we quote the following:—

Some improvement in the building trade is to be recorded during the year that has just closed. It is, however, but fair to state that such improvement is only comparable with a long series of "lean" years. The "trade boom" has given some impetus to manufacturing requirements, and this, in itself, has helped to reduce the percentage of unemployment in the ranks of both men and masters. But it is useless to be blind to the fact that the conditions of the trade generally leave much to be desired.

On the contracting side competition is still of the fiercest. Ordinary work that everyone can do is still taken at prices that can leave no possible margin of profit if specifications be honestly adhered to. The result is seen each month in the list of contractors who are forced by circumstances to give up the unequal contest. Not that the keenness of competition has been alone responsible, for rises in the cost of both labour and materials have badly hit many firms with running contracts, whilst the difficulty of exactly gauging the extent of these advances has made accurate tendering exceptionally difficult.

On the speculative side little can be said, for it has almost ceased to exist. There are many of us who in days gone by have spoken more disrespectfully of the "jerry builder" (as we have been pleased to call him) than circumstances have, perhaps, warranted. For events are proving that he supplied in many places a need for cheap houses. The result of this stoppage of small house-building is already being seriously felt, and in the New Year we are destined to hear much more on this subject. Instead of empty houses, the existence of which we were wont to deplore, we find some of the meanest property in our large towns commanding rents considerably higher than ever before, whilst on the outskirts it is often impossible to find suitable residences for the artisan class at any price at all.

A case in point is in the writer's mind at the moment where, in a London suburb, there were 38 applicants for a house at 12*s.* 6*d.* weekly within an hour of its being vacated.

As a matter of fact, the prospects for 1914 should, by every natural law, be brimful of hope for the building trade. There has been such marked activity in almost every other industry that there must be considerable sums awaiting immediate investment. Not many years ago much of this money would have found its way into large building schemes and for the erection of a still greater number of town and country houses for those fortunate merchants whose time and capital has been so profitably employed. But he would be indeed an optimist who would venture to predict anything so desirable in the year that is before us. Much of the money that should have found its way into the pockets of the builder and his workmen will go abroad for investment, and our emigration returns clearly indicate that the cream of our artisan class is following capital out of the country to lands where they can sell their labour on more profitable terms. In spite of these restricted conditions there is no reason, however, to apprehend that the new year will hold any more unfavourable conditions than the old. On the contrary, labour troubles are improbable, the prices of materials are likely to be downward rather than otherwise, and sooner or later the public will come back to the property market, especially if there should fortunately arise any tangible reasons for a return of confidence.

It is for that happy day that the building trade must wait with patience.

VARIETIES.

The Rotherham Borough Council have decided to apply to the Local Government Board for sanction to borrow £15,956, for extensions at the electric light generating station.

Messrs. Robey E. Carpenter & Son, quantity and measuring surveyors, Leicester, have removed to larger and more central premises at 12 Gotha Street, Leicester, where the practice will be carried on the same as usual.

The will of Mr. John Benjamin Wells, aged 55, of 150 Grosvenor Road, Westminster, builder, of the firm of Messrs. Prestige & Co., has been proved at £170,111; net personalty £6,662.

Mr. P. H. McCarthy, M.A., civil engineer, Dublin, has been appointed by the Newry (Ireland) Urban Council consulting expert in connection with the water filtration scheme, which will cost over £5,000.

The Pembroke (Ireland) Urban Council have received the sanction of the Local Government Board to the loans amounting to £80,218 for housing, applied for by the Council.

The Southampton borough engineer is preparing alternative schemes for the erection of terrace houses (16 ft frontage), or semi-detached houses (15 ft. frontages), on the land southward of the schools in Manor Farm Road.

Messrs. Jas. Gandy & Bennison, surveyors, 22 Essex Street, Strand, W.C., have taken into partnership Mr. Charles James Faux. The business will be carried on as heretofore at the same address under the title of Gandy, Bennison & Faux.

The Royal Scottish Academy will hold a statutory general assembly on February 11, for the purpose of electing one painter and one architect to the rank of Academician, in room of the late Mr. J. Campbell Noble and Mr. Wm. Leiper, F.R.I.B.A.

The Linlithgow District Committee have adopted a scheme for a new supply of water to Linlithgow, Abercorn, Carriden, Blackness and Muirhouses districts, and involving the construction of a reservoir at Beecraigs, at a cost of £30,500.

Mr. D. C. Bluett is acting as secretary of the executive committee, appointed in November last, to consider the advisability of creating a Ministry of Fine Arts in this country. The committee is drafting a petition to Parliament urging the establishment of such a Ministry as soon as possible.

Rhyl Council, after many months consideration, have decided to go on with a scheme for rebuilding the pier. The scheme decided upon will cost about £16,000, and with new works proposed in connection with the extension of the promenade to join the pier will entail an expenditure of about £19,000.

The partnership of Honeyman, Keppie & Mackintosh, architects in Glasgow, was dissolved as on January 1, 1914, by mutual consent. Mr. John Keppie will continue the business on his own account and under the name of Honeyman & Keppie at 257 West George Street, Glasgow. Mr. Charles Rennie Mackintosh will carry on business in his own name at 78 Ann Street, Hillhead, Glasgow.

We understand that Mr. Algernon Lewin Curtis, consulting engineer, Chatteris, R.S.O., is shortly publishing an extensive work on the classification and testing of sands, clays, rocks and refractory materials generally. Mr. Curtis, who is an expert in these materials, would be pleased to receive samples from owners of local sand quarries for inclusion in his forthcoming book.

The voting returns from the British and American branches of the Amalgamated Society of Carpenters and Joiners with reference to the new financial proposals were officially issued last week as follows:—In favour, 4,413; against, 16,737—majority against, 12,324. New Zealand, Australian, and South African figures have still to be added, but that will not alter the result, which is the rejection of the proposals. The scheme involved increased rates of union contributions

The British Committee, formed in connection with the Panama-Pacific Exposition, announce that Sir Edward Poynter, President of the Royal Academy, supported by a committee of artists, has applied for official recognition from the Government for a British Fine Art Section at San Francisco in 1915. This request, which has been transmitted to Mr. Buxton, is signed by Sir E. Poynter, Sir Ernest Waterlow, R.A., late President of the Royal Water Colour Society; Sir James D. Linton, President of the Royal Institute of Painters in Water Colours; Mr. Walter W. Ouless, R.A.; Mr. Frank Dicksee, R.A.; and Mr. Hamo Thornycroft, R.A.

In connection with the International Road Congress, held in London in June last, a competition was instituted by the Local Organising Council for designs for direction posts and plates, with a view to securing a standard type suitable for general adoption by highway authorities. Fifty-nine entries were received, and the Judging Committee, presided over by Sir George Gibb, Chairman of the Road Board, have issued their awards. The successful competitors were: 1, Mr. E. S. Sinnott, M.Inst.C.E., county surveyor of Gloucester, £16; 2, Messrs. W. & F. Wills, Ltd., Perseverance Works, Bridgwater, £12; 3, Messrs. W. Weeks & Son, Ltd., Perseverance Works, Maidstone, £7. Captain H. P. Deasy, Weybridge, Surrey, also received special mention.

TRADE NOTES.

Mr. W. Auerbach has been appointed a director of Claridge's Patent Asphalte Co., Ltd., in the stead of Mr. F. T. Cutbill, deceased.

During the year 1913 Messrs. Kershaw, Brassington & Co. were favoured with an order out of the Pottery district for 147 12-inch extractor ventilators made of copper, and which have been satisfactory, and have supplied other ventilators to churches, chapels, gas companies, railway companies, and various other places numbering 1,889, making a total of over 2,000 for the year. These have been made and supplied direct by Messrs. Kershaw, Brassington & Co., Lancaster and Settle.

On Tuesday, January 6, the directors of Messrs. Harris & Sheldon, Ltd. (the Birmingham shop-fitters), entertained the managers and representatives from their branches established at London, Manchester, Glasgow, and Dublin to a dinner at the Queen's Hotel, Birmingham. Covers were laid for thirty-three, and the occasion was graced with the presence of two directors' wives, Mrs. J. E. Sheldon and Mrs. R. G. Richards. The toast of the directors was proposed by Mr. T. E. Sellers (the London manager), who spoke of the encouragement given at all times to the staff. The Chairman and Managing Director, Mr. J. E. Sheldon, responded on behalf of the Board, pointing out that the success met with during 1913 was mainly due to the splendid enthusiasm exhibited by the staff to promote the welfare of the business. Their works were now equipped to enable them to handle any sized contract, the additions of the latest machinery and the electrifying of the factory helping to considerably reduce the cost of production and to secure that high quality of work for which the firm have for so long been known. The year 1914 has commenced well.

THE
Architect and Contract Reporter.
FRIDAY, JANUARY 23, 1914.

EDITORIAL NOTICES.

The Editor will always be pleased to examine drawings or articles with a view to publication, but cannot be responsible for the safety of those sent, though every reasonable care will be taken. Contributors desiring payment should clearly state their wishes. No payment will be made until after publication, and a commission to prepare articles or drawings does not necessarily imply acceptance or approval.

TENDERS, ETC.

⁂ ***As great disappointment is frequently expressed at the nonappearance of Contracts Open, Tenders, &c., it is particularly requested that information of this description be forwarded to the Office, Imperial Buildings, Ludgate Circus, London, E.C., not later than 2 P.M. on Thursdays.***

ANSWER TO CORRESPONDENT.

ANCIENT LIGHTS (L. R., Yorks.).—You would not be within your rights if you erected a new building which would obstruct the lights of any of the windows in B.'s property which have enjoyed the use of light for twenty years without interruption. In practice it is usual, in cases where buildings are to be erected which would obstruct ancient lights, to require, not that the construction be abandoned, but that it shall be so modified as to allow a line of light at 45 degrees to the ancient lights. Other questions may arise; for example, if the same vendor had sold the land and retained the house, he could not restrain the purchaser of the land from building thereon, even if it obstructed the ancient lights of the house. Your other question is answered in the affirmative.

COMPETITIONS OPEN.

BATH.—Jan. 31.—The Council invite architects to submit designs for a new secondary school, and have appointed Mr. H. T. Hare, F.R.I.B.A., to act as their assessor. Applications for particulars, accompanied by a cheque for one guinea, which will be returned on receipt of a bona-fide design, to be made to Mr. Fredk. D. Wardle, town clerk, Guildhall, Bath.

BRIGHTON.—Jan. 31.—The Council invite designs for a clock tower to be erected in Queen's Park at a cost (including the clock) not exceeding £1,000. Conditions of competition can be obtained from Mr. Hugo Talbot, town clerk, Town Hall, Brighton.

CANADA (OTTAWA).—April 2.—Architects are invited to submit by April 2 sketch designs in a preliminary competition for the erection of Departmental and Courts Buildings at Ottawa, Ontario. From the designs submitted six will be chosen by the assessors to take part in a final competition, for which the five unsuccessful competitors will each receive an honorarium of 3,000 dollars. The competition is limited to British subjects practising in the British Empire. The Government has appointed Mr. T. E. Collcutt, Mr. J. H. G. Russell, and Mr. J. O. Marchand as assessors. Conditions may be obtained from the High Commissioner for Canada, 17 Victoria Street, London, S.W., and Mr. R. C. Desrochers, secretary, Department of Public Works, Ottawa.

COVENTRY.—Feb. 1.—The Corporation invite competitive sketch-plans not later than Feb. 1. for a municipal technical institute at Pool Meadow. The competition is open to all architects. Particulars may be obtained on payment of £1 1s. (returnable on receipt of sketch-plans or the return of the conditions within 14 days of receipt) from the Education Office, 44 Bayley Lane, Coventry.

DURHAM.—Jan. 31.—The County Council invite competitive plans for a residential school for defective children at Glake Hall, near Durham. For conditions of competition apply to the Clerk to the Education Committee, Shire Hall, Durham.

FARNBOROUGH.—Feb. 11.—The Urban District Council invite competitive designs for three types of artisans' dwellings to be erected within their district. A fee of twenty guineas will be paid for the accepted design, which, with the right of using any or all of such designs, shall become the property of the Council. Mr. J. E. Hargreaves, surveyor, Farnborough.

HENDON.—March 2.—The Urban District Council invite competitive designs for public baths at the Burroughs, Hendon. Premiums of £100, £75, and £50 are offered for the designs placed first, second, and third by Mr. H. W. Wills, F.R.I.B.A., who will act as assessor. Particulars, &c., may be obtained on payment of £1 1s. deposit (returnable) to Mr. Henry Humphries, clerk, Council offices, Hendon, N.W.

IRELAND.—March 20.—The Belfast Corporation invite competitive designs for an Art Gallery and Museum, to be erected in the Botanic Gardens. The complete scheme will involve an outlay of £75,000, but it is only intended to spend at first £30,000. Mr. John J. Burnet, A.R.S.A., LL.D., will act as assessor. The conditions and plan of site may be had on the payment of £1 1s. deposit (returnable on receipt of a bonâ-fide design) to Mr. R. Meyer, Town Clerk, Belfast.

LONDON.—March 11.—The London Society offer a prize (the Gold Medal of the Society and £15) for the best design for the improvement of the north and south entrances to the Broad Walk of Kensington Gardens, London. The Secretary, R.I.B.A., 9 Conduit Street, Hanover Square, London, W.

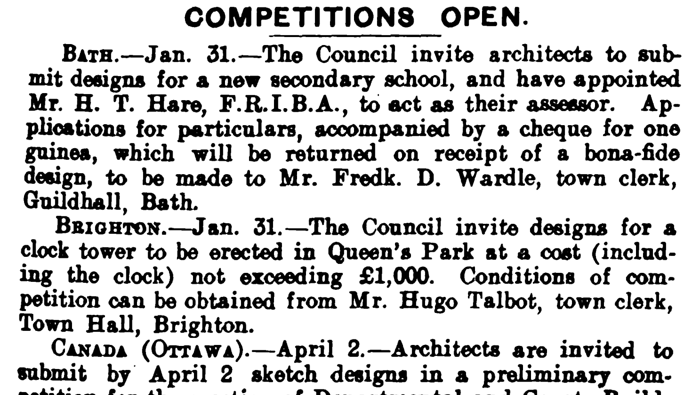
LONDON.—May 4.—The Bridge House Estates Committee of the Corporation of the City of London invite designs from British architects for the architectural treatment of the new St. Paul's Bridge. The conditions of the competition and instructions may be obtained upon payment of a deposit of £3 3s., which will be returned on receipt of a design in accordance with the conditions. A premium of £300 is offered for the design which may be placed first, and further premiums of £200 and £100 respectively. The committee will be advised by Sir William Emerson, P.P.R.I.B.A., as assessor, whose decision will govern the award of the premiums and be final and binding in all stages of the competition. The Town Clerk, Guildhall, London, E.C.

SHIPLEY—Feb. 1.—The Urban District Council invite plans and designs for new Municipal Offices. This competition is open only to architects residing or having offices in any part of Yorkshire. Apply to Mr. I. Lindow, clerk, Council Offices, Shipley.

CONTRACTS OPEN.

AYLESBURY.—Feb. 1.—For alterations and additions to the premises adjoining headquarters, police station, Aylesbury, for the Bucks. Standing Joint Committee. Mr. R. J. Thomas, M.I.C.E., county surveyor, County Hall, Aylesbury.

(*Continued on page 15.*)



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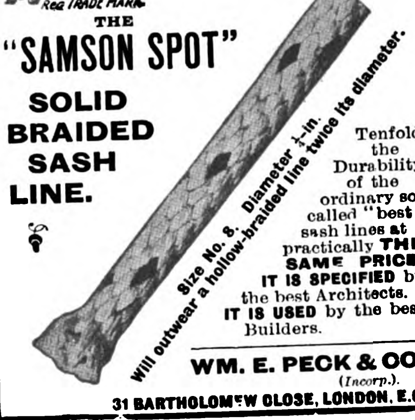
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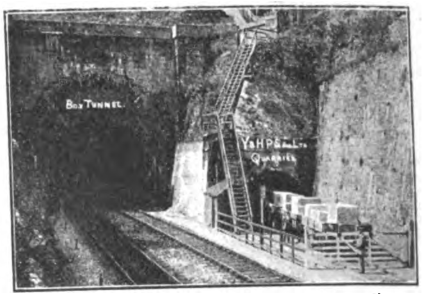

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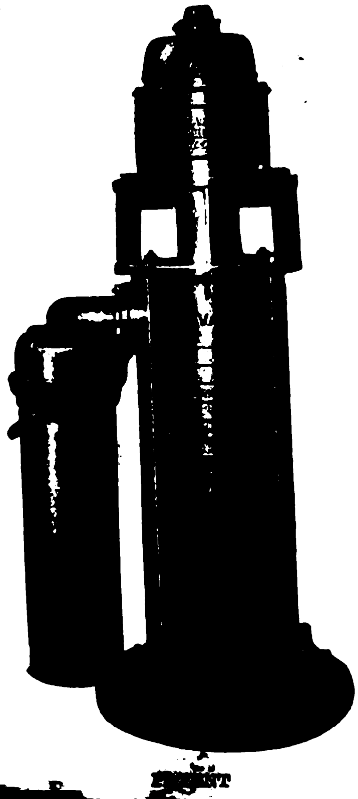

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Baguley.—Jan. 28.—For erection of males' pavilion at Baguley Sanatorium, for the Manchester Sanitary Committee. Deposit £2 2*s*. The City Architect, Town Hall, Manchester.

Barnet.—Jan. 29.—For erection of Council offices, underground convenience, and work in connection therewith in Wood Street, for the Urban District Council. Deposit £2 2*s*. Mr. W. F. Wilkins, surveyor, 40 High Street, Barnet, Herts.

Basingstoke.—Feb. 4.—For erection of drill hall, Basingstoke, Hants, for the County of Southampton Territorial Force Association. Send application and £2 2*s*. deposit by Jan. 24 to Messrs. Hair & Bucknill, architects, 23 Portland Chambers, Southampton.

Beaconsfield.—Feb. 14.—For erection of thirty-four cottages and the construction of roads and sewers, and the provision of all necessary materials and labour, for the Urban District Council. Deposit £3. Mr. H. Sargeant, surveyor, Baring Road, Beaconsfield.

Beckenham.—Feb. 18.—For erection of a public elementary school in the Balgowan Road, for the Urban District Council. Send names and £2 2*s*. deposit by Feb. 5 to Mr. F. Stevens, clerk to the Council and Education Committee, Beckenham.

Birkenhead.—Jan. 27.—For erection of certain buildings at the North End refuse destructor, Cleveland Street, for the Corporation. Deposit 5*s*. Mr. C. Brownridge, M.I.C.E., borough engineer and surveyor, Town Hall, Birkenhead.

Bishop Auckland.—Feb. 4.—For erection of tuberculosis pavilions and for alterations and additions to the existing administrative blocks at their No. 1 and No. 2 hospitals, situate respectively at Tindale Crescent and Helmington Row, for the Auckland, Shildon, and Willington Joint Hospital Board. Deposit £1 1*s*. Mr. R. B. Thompson, architect, Bishop Auckland.

Buckfastleigh.—Feb. 1.—For erection of three villa residences and boundary walls in Lodger's Park. Deposit 10*s*. 6*d*. Mr. W. J. Goode, architect and surveyor, Buckfastleigh.

Bury (Lancs.).—Jan. 31.—For erection of isolation block at the Bury Infirmary. Send applications by Jan. 31 to Mr. C. R. Cooper, architect and surveyor, 20 Market Street, Bury, Lancs.

Chopwell.—Jan. 28.—For excavator and concretor, bricklayer and mason, carpenter and joiner (labour only), also separate tenders (labour and materials complete) ; slater, plumber, plasterer, and painter, for erection of ten houses at Chopwell, for the Blaydon Urban District Council. The Surveyor, Council Offices, Blaydon-on-Tyne.

Darlington.—Jan. 28.—For erection of an elementary school in St. Paul's Street, for the Town Council. Deposit £2. Mr. G. Winter, borough surveyor, Town Hall, Darlington.

Dartford.—Jan. 28.—For the re-erection of two ward blocks in fire-resisting materials at Long Reach Smallpox Hospital, near Dartford, Kent, for the Metropolitan Asylums Board. Deposit £1. Mr. W. T. Hatch, M.I.C.E., M.I.M.E., engineer-in-chief, the Office of the Board, Embankment, E.C.

Dronfield.—Jan. 31.—For alterations and additions to Dronfield Grammar School, for the Governors. Deposit £1 1*s*. Mr. G. H. Widdows, F.R.I.B.A., hon. architect to the Governors, the County Offices, Derby.

East Yorkshire.—For erection of house at Withernwick, East Yorkshire. Mr. B. S. Jacobs, architect, Hull.

Egremont.—Jan. 30.—For erection and completion of 76 working-class dwelling-houses, and for the construction of roadways, footpaths, sewers, manholes, &c., required in laying out the site at Brisco Road, for the Egremont Urban District Council. Deposit £5 5*s*. Mr. J. S. Stout, M.S.A., architect, 36 Lowther Street, Whitehaven.

Goole.—Jan. 28.—For erection of a brick urinal in Bridge Street, for the Urban District Council. The Surveyor, Goole.

Hampreston Ferndown.—Jan. 30.—For erection of an elementary school at Ferndown, for the Dorset County Council Education Committee. The County Offices, Dorchester, and Messrs. Fletcher & Brett, architects, Wimborne.

Hendon.—Feb. 9.—For erection of fifty artisans' dwellings at Child's Hill, for the Hendon Urban District Council. Deposit £3 3*s*. Mr. George Hornblower, architect, 2 Devonshire Terrace, Portland Place, London, W.

Henley-on-Thames.—Jan. 24.—For alterations and additions to the Golf Club-house. Deposit £1. Mr. M. Maberly Smith, F.R.I.B.A., architect, 55 Berners Street, London, W.

Hertford.—Jan. 29.—For erection and completion of a County Council school at Hertford, for the Hertfordshire Education Committee. Deposit £2 2*s*. Mr. U. A. Smith, county surveyor, Hatfield.

Hove (Sussex).—Feb. 4.—For additions and alterations to the police station in the Town Hall and constructing underground lavatories in Norton Road. Deposit £1 1*s*. Mr. H. H. Scott, borough surveyor, Town Hall, Hove.

Huddersfield.—Jan. 30.—For the various works required to be done in the erection of thirty-six workmen's dwellings (in three separate blocks) in Kirkgate, Huddersfield, for the Corporation. Mr. K. F. Campbell, M.I.C.E., borough engineer and surveyor, 1 Peel Street, Huddersfield.

Ireland.—Jan. 30.—For erection of a hall for the L.O.L. 1270, Irvinestown. Mr. F. E. Townsend, A.M.I.C.E., Forthill House, Enniskillen.

Ireland.—Jan. 31.—For erecting and completing a postmaster's residence at Tuam, county Galway. Tuam Post Office and Office of Public Works, Dublin.

Ireland.—Feb. 2.—For erection and furnishing of National school buildings at Ballinderrig, county Galway. The Tuam R.I.C. Barracks and the District Office of Public Works, Galway.

Ireland.—Feb. 7.—For erection of new boiler house, chimney shaft, and new boiler and economiser at the District Lunatic Asylum, Ennis, county Clare. Deposit £3 3*s*. Messrs. Sheehy & Tierney, architects, 57 George Street, Limerick, or Mr. J. Mackey, quantity surveyor, 58 Dame Street, Dublin.

Ireland.—Feb. 9.—For erection of lavatories at their Belfast terminus, for the Great Northern Railway Co. (Ireland). Deposit £1 1*s*. The Engineer's Offices at Dublin and Belfast.

Ireland.—Feb. 9.—For erection of a steel-framed shed, 42 feet by 25 feet, covered with corrugated iron, for the Great Northern Railway Co. (Ireland). Deposit £1 1*s*. Mr. T. Morrison, secretary, Amiens Street Terminus, Dublin.

Keswick.—Jan. 28.—For alterations to house and buildings at Applethwaite. Mr. Little, Elm Garth, Applethwaite, Keswick.

Launceston.—Feb. 2.—For erection of Constitutional Club premises in the Western Road, also for the lighting and heating of the club. Mr. E. Wise, M.S.A., architect, Launceston.

Leeds.—Jan. 27.—For the demolition of 47 St. James Street, and the works connected therewith, for the Improvements Committee. Mr. W. T. Lancashire, city engineer, Municipal Buildings, Leeds.

Leeds.—Jan. 27.—For the demolition of the existing bridge and the construction of abutments, jack arches, concreting and paving work, but no steelwork, for a new 40-feet wide bridge over Low Beck, Domestic Street, Holbeck, Leeds. Mr. W. T. Lancashire, city engineer, Municipal Buildings, Leeds.

Leeds.—Feb. 10.—For erection of a wooden shelter at the Killingbeck Sanatorium, for the Hospitals Sub-Committee. The Steward, Seacroft Hospital, Yorkshire.

London.—Feb. 4.—For erection of schools and caretaker's cottage in Alexandra Road, Hounslow, for the Heston and Isleworth Urban District Education Committee. Deposit £2 2*s*. Mr. J. G. Carey, architect and surveyor, Council House, Hounslow.

London.—Feb. 4.—The Commissioners of H.M. Works, &c., are prepared to receive tenders for the execution of ordinary works and repairs to the buildings in their charge in the (1) North District, (2) South District, for a period of three years from April 1, 1914. Deposit £1 1*s*. in respect of each district. H.M. Office of Works, &c., Storey's Gate, London, S.W.

Mablethorpe.—Feb. 3.—For erection of a pair of cottages at Mablethorpe on the farm now in the occupation of Mr. H. H. Gray, for the Small Holdings Committee of the Lindsey County Council, Lincs. Mr. H. C. Tong, county land agent, County Council Offices, Mint Street, Lincoln.

Manchester.—Jan. 27.—For the following in connection with extensions and alterations at their electric car shed, Hyde Road, for the Tramways Committee—viz. : (*a*) general builders' work ; (*b*) constructional steel and cast-iron work. Send £3 3*s*. deposit to Mr. J. M. McElroy, general manager, Corporation tramways, 55 Piccadilly, Manchester. Mr. J. Gibbons, architect, 4 St. Mary's Parsonage, Manchester.

Manchester.—Jan. 28.—For the construction of sculleries at Chester Street tenement dwellings, for the Sanitary Committee. Deposit £1 1*s*. The City Architect, Town Hall, Manchester.

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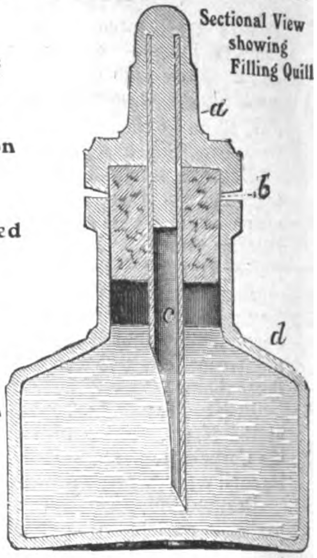

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Milnsbridge.—Jan. 30.—For the various works required in erection of warehouse, stable, and boundary walls. Messrs. Lunn & Kaye, architects and surveyors, Milnsbridge, Yorks.

Newbiggin.—Jan. 24.—For the whole or any of the trades in connection with a new north aisle for Newbiggin Church. Send names by Jan. 24 to Messrs. Hicks & Charlewood, architects, 67 Westgate Road, Newcastle-on-Tyne.

Newton Poppleford.—Feb. 5.—For the erection of six houses at Newton Poppleford, Devon, on a site near the schools, for the St. Thomas Rural District Council. (Mr. E. E. Ellis, architect, Polsloe Road, Exeter.) Send names and £1 1*s.* at once to Mr. A. E. Ward, clerk, 9 Bedford Circus, Exeter.

Norfolk.—Feb. 6.—For erection of three pairs of cottages in each of the parishes of Great Cressingham, Holme Hale, and North Pickenham, in the rural district, for the Swaffham Rural District Council. Deposit £1 1*s.* Mr. S. Matthews, clerk, Swaffham, Norfolk.

Portsmouth.—Jan. 26.—For erection of temporary buildings in the playground of St. Cuthbert's Mission Hall, Copnor, for the Portsmouth Education Committee. Mr. A. H. Bone, surveyor, Cambridge Junction, Portsmouth.

Ramsgate.—Feb. 4.—For structural alterations and additions, and other works in connection therewith to St. George's Schools. Deposit £5. Messrs. Jennings & Gray architects, 4 St. Margaret's Street, Canterbury. (See advertisement.)

Rugby.—Feb. 7.—For alterations and additions at the cattle market, Railway Terrace, for the Rugby Urban District Council. Mr. J. H. Sharp, M.I.Mun.E., A.M.S.E., surveyor, Benn Buildings, Rugby.

St. Germans.—Jan. 31.—For alterations and additions to Catchfrench, St. Germans, Cornwall. Deposit £2 2*s.* Mr. A. J. Cornelius, M.S.A., architect, Truro.

Saltburn.—Jan. 28.—For certain additions to the caretaker's cottage, Saltburn High School, and the construction of large coal and coke cellar for the school, for the North Riding of Yorkshire County Council (Education Committee). Mr. J. C. Wrigley, secretary, Education Offices, Northallerton.

Scotland.—Jan. 26.—For mason, carpenter, plumber, slater, plaster, painter, and glazier works of dwelling-house to be erected at Portgordon for Mr. G. Reid. Mr. W. Hendry, architect, 91 West Church Street, Buckie.

Scotland.—Jan. 26.—For the mason, joiner, slater, plumber, smith, plaster, asphalt, and tile works in connection with proposed erection of shop and houses at Denbeath, Methil, for the Buckhaven Co-operative Society, Ltd. Mr. G. C. Campbell, architect and ordained surveyor, Methil.

Scotland.—Jan. 27.—For the mason, carpenter, slater, plumber, plaster, and painter works of cookery and manual instruction department at Aberlour Public School. Mr. J. Wittet, architect, Elgin.

Scotland.—Jan. 28.—For the several works required in connection with the proposed erection of caretaker's house, shelter, and lavatories in Cathkin Braes Park, for the Glasgow Corporation. The Office of Public Works, 64 Cochrane Street, Glasgow.

Scotland.—Jan. 29.—For the mason, carpenter, slater, plumber, plaster, and painter works of cottages to be erected at Blackhills, for Mr. T. North Christie. Mr. J. Wittet, architect, Elgin.

Scotland.—Jan. 30.—For the demolition of old buildings, building boundary and retaining walls, laying cement paving, and incidental works in connection with the formation of a playground, and widening of the roadway at Dean Path, for the Edinburgh Town Council. Mr. A. H. Campbell, M.I.C.E., burgh engineer, City Chambers, Edinburgh.

Scotland.—Jan. 31.—For the mason, carpenter, slater, plumber, plaster, and painter works of new school buildings, water supply, and drainage at Duffus. Mr. J. Wittet, architect, Elgin.

Selby.—Feb. 9.—The West Riding Small Holdings and Allotments Committee invite whole or separate tenders for the following works in connection with two new farmsteads at Selby, viz.: builder, carpenter and joiner, ironfounder, tiler, plasterer, plumber and glazier, painter. The West Riding Land Agent, County Hall, Wakefield. Send £1 deposit by separate letter to the West Riding Treasurer, County Hall, Wakefield.

Sevenoaks.—Feb. 6.—For the erection of a dwelling-house for occupation by the head teacher at the Sevenoaks Weald Council School, for the Kent Education Committee. (Mr. W. H. Robinson, M.S.A., committee's architect.) Send in name and address and £1 deposit by Jan. 29 to Mr. F. W. Crook, secretary, Sessions House, Maidstone.

Sheffield.—Jan. 29.—For the construction of weighbridge office, steel roof to tipping dock 75 feet by 34 feet, entrance gates, dock walls, fences, and other contingent works at Stevenson Road, for the Health Committee. The City Engineer, Town Hall, Sheffield.

Shoreham-by-Sea.—Jan. 27.—For erection of public elementary school, for the West Sussex and Chichester Joint Education Committee. Deposit £1 1*s.* Mr. H. P. Roberts, F.R.I.B.A., county education architect, Thurloe House, High Street, Worthing.

South Kirkby.—For erection of fifty-six dwelling-houses at South Kirkby, near Wakefield, for the South Kirkby, Featherstone, and Hemsworth Collieries, Ltd. Deposit £2 2*s.* Messrs. Garside & Pennington, architects and surveyors, Pontefract and Castleford.

South Shields.—Jan. 30.—For erection of a tuberculosis dispensary at the Municipal Buildings, Westoe Road, for the Corporation. Mr. L. Roseveare, A.M.I.C.E., borough engineer, Municipal Buildings, South Shields.

Taplow.—Feb. 2.—For erection of a police cottage at Taplow, for the Bucks. Standing Joint Committee. Mr. R. J. Thomas, M.I.C.E., county surveyor, County Hall, Aylesbury.

Toft Hill.—Jan. 28.—For renovation of the Primitive Methodist church and schoolroom, for the Trustees. Mr. J. G. Raine, Toft Hill, Durham.

Upwey.—Feb. 7.—For a new shelter, 100 yards grouping targets, concrete wall, and other repairs at the Bincombe range, for the Territorial Force Association of the County of Dorset. Mr. F. T. Maltby, A.M.I.C.E., architect and surveyor, Dorchester.

Wales.—For building a public hall and workmen's institute at the Tumble, Carmarthen, for the Tumble Public Hall and Workmen's Institute Co., Ltd. Messrs. W. Griffiths, F.S.I., & Son, architects, Llanelly.

Wales.—Jan. 26.—For erection of the following, for the Bedwellty Urban District Council: (1) pumping station at Cwmsyfiog; (2) meter house at Brithdir; (3) meter house at Tirphil. Deposit £1 1*s.* The Surveyor's Office, Aberbargoed.

Wales.—Jan. 27.—For the erection of entrance lodges at Morriston Park and Llewelyn Park respectively, in the borough of Swansea, for the Corporation. Deposit £1 1*s.* for each lodge. Mr. E. E. Morgan, A.R.I.B.A., borough architect, 3 Prospect Place, Swansea.

Wales.—Jan. 28.—For the following works, for the Flintshire Education Committee: (1) a new school at Sealand to accommodate 342 scholars; (2) alterations to the Mold Junction school to form special subjects' room; (3) alterations and extensions to the Coed Talon Council School to form special subjects' rooms; (4) tar-paving Coed Talon Council School yard. Deposit £1 1*s.* Mr. S. Evans, county architect, Mold.

Wales.—Jan. 29.—For completion of St. Luke's Church, Canton, Cardiff, for the Rev. T. J. Richards, vicar, and Committee. Mr. G. E. Halliday, F.S.A., architect, 9 Quay Street, Cardiff.

Wales.—Jan. 31.—For erection of a police station at Pontlottyn and alterations and additions to the police station at Bargoed, for the Standing Joint Committee of the Glamorgan Quarter Sessions and County Council. The Glamorgan County Hall, Cardiff.

Wales.—Feb. 2.—For erection of rooms for manual instruction and domestic subjects at Pentrebach mixed school; also for school cupboards for various schools in the borough of Merthyr Tydfil. The Borough Architect, Town Hall, Merthyr Tydfil.

Wales.—Feb. 3.—For erection of an electric power substation at Uplands, Swansea, for the Corporation. Deposit £1 1*s.* Mr. E. E. Morgan, A.R.I.B.A., borough architect, 3 Prospect Place, Swansea.

Wales.—Feb. 4.—For carrying out the following works, for the Ogmore and Garw Urban District Council: (*a*) building retaining and boundary walls in rubble masonry; (*b*) the erection of iron fencing and iron gates, &c., which will be supplied by the Council; (*c*) levelling, draining, and forming footpaths, &c., at their recreation grounds in Nantymoel and Ogmore Vale. The Council Offices, Brynmenyn, Glam.

Warminster.—Feb. 20.—For erection of an isolation hospital and work in connection therewith in the Bradley Road, for the Warminster Joint Isolation Hospital Committee. Deposit £2 2*s.* Mr. C. H. Lawton, architect, 32 High Street, Warminster.

Warrington.—Feb. 2.—For erection of boiler house chimney and alterations at the baths in Bath Street. The Borough Surveyor, Town Hall, Warrington.

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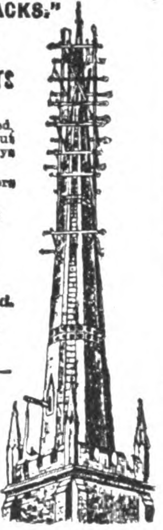

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West Molesey.—Jan. 28.—For the erection of coal and other stores, &c., at their isolation hospital, West Molesey, for the East and West Molesey Urban District Council. The Surveyor's Office, East Molesey.

Widnes.—Jan. 29.—For certain alterations and addit to the Widnes Accident Hospital, for the Corporation. Deposit £1 1s. Mr. J. S. Sinclair, A.M.I.C.E., borough surveyor, Town Hall, Widnes.

Winchelsea.—Jan. 31.—For enlargement of the existing engine house at the pumping station, for the Rye Rural District Council. Mr. H. M. Jeffery, surveyor to the Council, 25 High Street, Rye.

Wood Green.—Jan. 28.—For erection of a pavilion on the recreation ground in White Hart Lane, for the Urban District Council. Mr. C. H. Croxford, engineer and surveyor, Town Hall, Wood Green.

TENDERS.

BEYTON.

For the erection of a cottage, set of farm buildings, and provision of water supply, at Beyton, for the West Suffolk County Council. Mr. A. Ainsworth Hunt, M.S.A., county architect, Bury St. Edmunds.

Cottage, including water supply.			
G. A. Adams, Stanton	£206	18	0
For New Farm Buildings.			
English Bros., Wisbech	128	0	0
For Foundations and Floors of New Buildings.			
G. A. Adams, Stanton	42	17	0

BRAUNTON.

For the erection of six cottages at Wrafton Lane, Braunton, Devon, for Mr. H. Isaac.

Cater	£1,698	0	0
Slee & Sons	1,634	12	0
Sillifant	1,589	0	0
Pichard	1,545	10	0
Woolaway & Sons	1,518	0	0
Huxtable	1,416	2	6
Hancock	1,278	0	0
W. H. Robins, Ilfracombe (*accepted*)	1,276	19	0

CHARNDON.

For the erection of the Council School, Charndon, for the Bucks County Education Committee.

Crook & Judd, Waddesdon (*accepted*)	£766	11	7

EASINGTON.

For the erection of an infectious diseases hospital at Thorpe, for the Easington Rural Council.

C. Brown, Ltd., West Hartlepool (*accepted*)	£12,580	0	0

LANCHESTER.

For the several works required in additions to the administrative block at Leadgate Hospital, for the Lanchester Joint Hospital Board. Mr. G. T. Wilson, Licentiate R.I.B.A., architect, Blackhill.

Ledger	£318	5	6
Jackson	308	7	6
Gallacher	299	0	0
Eltringham	288	4	6
Aylon & Sons	282	0	0
Moyle	274	12	4
Aylon & Moralee	265	0	0
Robt. Southren, Depton, co. Durham (*accepted*)	256	14	6

LONDON.

For the provision of steam, exhaust, condenser, feed, &c., piping, water tanks, &c., at the Greenwich generating station, for the London County Council.

Butterley Co., Ltd., Butterley Ironworks, near Derby	£6,634	10	5
E. L. Bas & Co., Billiter Street, E.C.	6,290	0	0
Staveley Coal and Iron Co., Ltd., Staveley Works, near Chesterfield	5,973	9	4
Brightside Foundry and Engineering Co., Ltd., Victoria Street, S.W.	5,438	15	0

Chief tramway officer's estimate, £7,000.

NORTHAMPTON.

For the extension to Far Cotton and for doubling a large part of the Kingsthorpe route, for the Tramways Committee.

Wimpey & Co.	£26,208	0	0
Finnegan	25,408	0	0
Clarke	24,835	0	0
Griffiths, Ltd.	24,066	0	0
Clough, Smith & Co.	23,408	0	0
Dick, Kerr & Co.	22,571	0	0
Foster, Ltd.	22,490	0	0
Trentham	21,486	0	0
Law	21,319	0	0
Fidler, borough engineer, Northampton	20,922	0	0
Pearce, Ltd.	20,613	0	0
Stark, Ltd. Glasgow (*recommended*)	20,353	0	0

PLYMOUTH.

For plastering the gable-ends of the premises in Tavistock Road, adjoining the Free Library.

G. P. Turpin, Plymouth (*accepted*)	£132	0

SLOUGH.

For the enlargement of the Slough Secondary School, for the Bucks County Education Committee.

J. T. Harris, High Wycombe (*accepted*)	£3,669	0	0

STONY STRATFORD.

For the enlargement of Stony Stratford Council school, for the Bucks County Education Committee.

Cowley & Son, Stony Stratford (*accepted*)	£1,047	0	0

LONDON MASTER BUILDERS' ASSOCIATION.

The ordinary meeting of the Council was held on Thursday, January 15, at the offices of the Association, Koh-i-Noor House, Kingsway, W.C., the President, Mr. Walter Lawrence, jun., in the chair, and there was a large attendance of members.

The reports of the Special Council and Committee meetings whereat particular attention was devoted to the procedure to be adopted in carrying out the policy authorised at the general meeting on the 15th ult., and instructions for the issue of the posters and circulars to all members in order that the information therein contained might be conveyed to all workmen in their employ a week before the plan adopted would come into operation were read and adopted.

New members were elected, and further applications for membership received.

In reference to the preceding paragraph, attention may be called to an allusion in the preface to the L.M.B.A. Handbook for the present year, which says:—

"Very serious issues are in the balance, and by withholding moral and valuable support during a crisis that may prove to be without parallel in the history of the industry, non-contributory employers are incurring a grave moral responsibility, since obviously they are imperilling not only their own prospects, but the well-being of employers generally."

Correspondence and trade matters of interest were considered, and instructions issued.

The annual dinner of the Association will take place on February 18.

The rebuilding of Nos. 37 and 38 Hatton Garden, London, E.C., is now complete, and No. 36 is now being demolished, and will be re-erected as an extension to Nos. 37 & 38 Hatton Garden, from the design of Messrs. Homer & Lucas, architects, of Evelyn House, Oxford Street, W., the builders being Messrs. Spiers & Son, Ltd., of 2 Hill Road, Abbey Road, St. John's Wood, N.W.

The Public Health Committee of the Belfast Corporation recently waited on the Local Government Board in Dublin with reference to the housing scheme under the Improvement Order, 1910. They laid before the Board plans prepared by the surveyor for self-contained houses of two and three rooms each in substitution for the maisonette design which had been selected, after competition, inasmuch as the houses of that design could not be erected for the £25,000 sanctioned by the Board. The Board intimated their approval of the new plans, and that they would be prepared to assist the Corporation in every way in their power in dealing with the scheme.

MIDLAND BUILDING TRADES.

THE annual meeting of the Midland Centre of the National Federation of Building Trades Employers of Great Britain and Ireland was held at the Grand Hotel, Birmingham, on the 8th inst. The President (Mr. Walter W. Chambers, of Leicester) took the chair, and there was a large attendance of representatives of Master Builders' Associations in the Midlands affiliated to the centre.

The annual report stated that the building trade in the centre had, on the whole, been good during the past twelve months, though there were decided indications of a reduced volume of business towards the close of the year. Competition had been as keen as ever, and the enhanced cost of labour and materials had not always been accompanied by the proportionately increased price which the builder should obtain for his work. The tendency to advance wages had continued, and increases had been granted in sixteen of the federated towns. All these changes were effected in a peaceable manner, either by conciliation or by arbitration, except in the case of the Redditch bricklayers, who struck work from March 17 to April 16.

Six meetings of the Midland Centre Conciliation Board had been held. At one of these the Worcester bricklayers, carpenters, and labourers were granted an advance in wages of ¼*d.* per hour; a claim by the Birmingham carpenters for a day's wages in lieu of notice in respect of a man who had disobeyed an order to work overtime was disallowed. The Board considered an appeal by the Birmingham builders' labourers that yardmen should be paid the labourer's rate of wages, but no settlement was arrived at, and the dispute was referred to the National Board, who decided that the builders' labourers' rate in the working rules did not apply to yardmen. A dispute with the Leamington carpenters with regard to the overtime rule was satisfactorily settled, but a difficulty with the Malvern carpenters with regard to an increase of wages and alteration of other rules had to be referred to the National Board. An application by the Derby bricklayers for an advance of wages was considered, but no settlement was arrived at. The National Board subsequently granted an increase of ½*d.* per hour.

The Associations affiliated to the centre now number twenty-three, Rugby and Tamworth having become federated during the year. An organisation campaign has been inaugurated to affiliate towns at present outside the ranks of the Federation. The collective insurance scheme arranged for the insurance of members against workmen's compensation risks was renewed for a further twelve months at increased rates. It was reported that the number of policy-holders had doubled during the previous twelve months. For the first time in its history the centre had lost its president during his term of office, Mr. W. Yates having passed away suddenly, at Leicester, on April 2 last. It was felt that the honour of the presidency for 1913 belonged to the Leicester Association, and the half-yearly meeting in July unanimously appointed Mr. Walter W. Chambers for the remainder of the year.

The report was approved, and the officers for 1914 were appointed as follows:—Mr. George Gough (Wolverhampton), president; Mr. Ralph Webb (Birmingham), and Mr. Albert Brazier (Bromsgrove), vice-presidents; Mr. H. Willcock (Wolverhampton), treasurer; and Mr. F. T. Doleman (Nottingham), and Mr. William Moffat (Birmingham), auditors.

THE Greenock Corporation held a special meeting to discuss the scheme for the erection of workmen's dwellings which it is proposed to carry out in Roxburgh Street at a capital expenditure of between £30,000 and £40,000. It is suggested that the houses should be of two rooms rather than three-roomed.

THE Architects' and Surveyors' Diary, published by Messrs. Waterlow Bros. & Layton, is, without question, the best architects' diary now issued to the architect and surveyor. The 6*s.* copy is a handsomely bound book of reference, and has a liberal amount of space for each day in the year.

EXAMINATION of the electric lighting system of the Newcastle Cathedral has revealed that it is defective, and, to a certain extent, dangerous. Serious faults have, it is stated, been discovered in the wires put in sixteen or eighteen years ago. At any moment, in fact, it is stated they might fuse with disastrous results. It has therefore been decided to make extensive alterations, costing about £300, and an appeal is to be made for funds.

VARIETIES.

AN interesting scheme is being evolved for the breaking up of the Copsewood Grange estate, Stoke. The estate is located to the south-east of Coventry, and occupies a position in a delightful stretch of country. A syndicate have the matter in hand, and it is understood it is their intention to provide sites for two thousand houses.

A STEP towards the scheme for the remodelling of Brighton Aquarium was taken by the Corporation last week, when, by twenty-eight votes to eleven, it was decided to accept the offer of Mr. Rosenthal, of the Palace Pier, to lease the buildings, provided that the Corporation would spend £75,000 on them. By the offer the Corporation will only have to pay £3,000 yearly, instead of the present annual average charge of £7,000. The Corporation passed the necessary resolution to proceed to seek Parliamentary powers.

A BIG property deal has just been concluded at Sunderland, the Provincial Cinematograph Theatres, Ltd., having acquired the block of property known as Havelock House at the corner of Fawcett Street and High Street. On the more interior part of the site a picture theatre on a large scale will be constructed, fitted up in the most modern style, while shops and offices will be provided on the frontages. The site occupies about 1,600 square yards, and it is stated that the purchase price was about £60,000.

AN important scheme was considered by the Water Committee of the Bradford Corporation on Tuesday, and ultimately it was decided to recommend the city Council to double the inverted syphons in the pipes from the Nidd Valley, and thus double the quantity of water that can be brought to the city by the mains. The estimated cost of the scheme is about £180,000, and the work will be undertaken in sections.

STRONG opposition is to be organised in Richmond to the proposal of the Surrey County Council to negotiate with the Middlesex County Council for widening Richmond Bridge at a cost of £15,000. It is declared that any tampering with the present structure would result in spoiling its picturesqueness and also one of the most beautiful scenes on the lower Thames.

THE Aberdeen Town Council have under consideration a series of schemes for the construction of a new access to the Links, and a scheme for a new access to the Joint Station. For the Links access three main schemes are being considered. The first is one to cost £29,400, with alternative schemes costing £36,000 and £53,680. The second scheme is to cost £80,750, with two alternatives costing £70,000 and £63,660, while the third scheme, which has no alternative, would cost £26,100. A scheme for a new access to the Joint Railway Station from Union Street, at a net cost of £72,000, is also being considered.

THE Exeter City Council at their last meeting adopted the following resolution: (*a*) That the work hitherto performed by Mr. James Jerman as architect and surveyor to the Education Authority be transferred to the city surveyor's department, and that Mr. Jerman be appointed consulting architect to the Education Authority at a salary of £52 10*s.* per *annum*; and (*b*) that a competent architect be appointed in the city surveyor's department as a whole-time officer, at a salary of £220, rising to £250 per annum by three equal annual instalments.

"ENGLISH CLUBS," a list of over 4,000 clubs frequented by the English in all parts of the world, for 1914, has just been published by Messrs. Spottiswoode & Co., Ltd., and is edited by Mr. E. C. Austen Leigh. The book, which has been thoroughly revised this year, is bound in red cloth and printed in tabular form. It gives much information about each club; for instance, it notes the names of secretaries, dates of establishment, entrance fees and subscriptions, and has, in some cases, remarks on the qualifications for membership, &c. There are included in it, of course, London and provincial clubs in England, and a special feature is made of those in the Colonies, India, and on the Continent, besides which some 2,000 golf clubs and 500 ladies' clubs are mentioned. The price of the work is 5*s.*, post free 5*s.* 3*d.*

THE fire protection arrangements at the Ipswich Workhouse have just been augmented by a stationary steam fire pump, supplied by Messrs. Merryweather & Sons, of London. It has a capacity of 350 gallons per minute for fire service, and it will also be employed for filling the water tanks at the workhouse, for which purpose it is required to deliver 200 gallons per minute. This dual capacity not only makes for economy, but is also advantageous as the pump's frequent use for water supply duty will ensure its always being in proper working order. The pump, which takes its steam from the existing boiler, is able to start at pressures as low as 20 to 30 lbs.

THE
Architect and Contract Reporter.
FRIDAY, JANUARY 30, 1914.

EDITORIAL NOTICES.

The Editor will always be pleased to examine drawings or articles with a view to publication, but cannot be responsible for the safety of those sent, though every reasonable care will be taken. Contributors desiring payment should clearly state their wishes. No payment will be made until after publication, and a commission to prepare articles or drawings does not necessarily imply acceptance or approval.

No communication can be inserted unless authenticated by the name and address of the writer—not in every case for publication, but as a guarantee of good faith.

We have upon our staff a very eminent Barrister, who will be glad to answer in the columns of this paper any legal question that may be of interest to our readers. All letters must be addressed "Legal Adviser," Office of "The Architect," Imperial Buildings, Ludgate Circus, London, E.C.

The Editor will be glad to receive from Architects in London and the Provinces results of Competitions and Tenders and other particulars of Works in progress in which they may be interested.

TENDERS, ETC.

⁂ *As great disappointment is frequently expressed at the nonappearance of Contracts Open, Tenders, &c., it is particularly requested that information of this description be forwarded to the Office, Imperial Buildings, Ludgate Circus, London, E.C., not later than 2 P.M. on Thursdays.*

COMPETITIONS OPEN.

CANADA (OTTAWA).—April 2.—Architects are invited to submit by April 2 sketch designs in a preliminary competition for the erection of Departmental and Courts Buildings at Ottawa, Ontario. From the designs submitted six will be chosen by the assessors to take part in a final competition, for which the five unsuccessful competitors will each receive an honorarium of 3,000 dollars. The competition is limited to British subjects practising in the British Empire. The Government has appointed Mr. T. E. Collcutt, Mr. J. H. G. Russell, and Mr. J. O. Marchand as assessors. Conditions may be obtained from the High Commissioner for Canada, 17 Victoria Street, London, S.W., and Mr. R. C. Desrochers, secretary, Department of Public Works, Ottawa.

FARNBOROUGH.—Feb. 11.—The Urban District Council invite competitive designs for three types of artisans' dwellings to be erected within their district. A fee of twenty guineas will be paid for the accepted design, which, with the right of using any or all of such designs, shall become the property of the Council. Mr. J. E. Hargreaves, surveyor, Farnborough.

HENDON.—March 2.—The Urban District Council invite competitive designs for public baths at the Burroughs, Hendon. Premiums of £100, £75, and £50 are offered for the designs placed first, second, and third by Mr. H. W. Wills, F.R.I.B.A., who will act as assessor. Particulars, &c., may be obtained on payment of £1 1*s.* deposit (returnable) to Mr. Henry Humphries, clerk, Council offices, Hendon, N.W.

IRELAND.—March 20.—The Belfast Corporation invite competitive designs for an Art Gallery and Museum, to be erected in the Botanic Gardens. The complete scheme will involve an outlay of £75,000, but it is only intended to spend at first £30,000. Mr. John J. Burnet, A.R.S.A., LL.D., will act as assessor. The conditions and plan of site may be had on the payment of £1 1*s.* deposit (returnable on receipt of a bonâ-fide design) to Mr. R. Meyer, Town Clerk, Belfast.

LONDON.—March 11.—The London Society offer a prize (the Gold Medal of the Society and £15) for the best design for the improvement of the north and south entrances to the Broad Walk of Kensington Gardens, London. The Secretary, R.I.B.A., 9 Conduit Street, Hanover Square, London, W.

LONDON.—May 4.—The Bridge House Estates Committee of the Corporation of the City of London invite designs from British architects for the architectural treatment of the new St. Paul's Bridge. The conditions of the competition and instructions may be obtained upon payment of a deposit of £3 3*s.*, which will be returned on receipt of a design in accordance with the conditions. A premium of £300 is offered for the design which may be placed first, and further premiums of £200 and £100 respectively. The committee will be advised by Sir William Emerson, P.P.R.I.B.A., as assessor, whose decision will govern the award of the premiums and be final and binding in all stages of the competition. The Town Clerk, Guildhall, London, E.C.

CONTRACTS OPEN.

ABERCARN.—Feb. 14.—For erection of a school, to accommodate 400 children, together with a manual training centre, for the Monmouthshire Education Committee. Deposit £1 1*s.* Mr. J. Bain, F.R.I.B.A., County Council Offices, Newport, Mon.

BEACONSFIELD.—Feb. 14.—For erection of thirty-four cottages and the construction of roads and sewers, and the provision of all necessary materials and labour, for the Urban District Council. Deposit £3. Mr. H. Sargeant, surveyor, Baring Road, Beaconsfield.

BECKENHAM.—Feb. 18.—For erection of a public elementary school in the Balgowan Road, for the Urban District Council. Send names and £2 2*s.* deposit by Feb. 5 to Mr. F. Stevens, clerk to the Council and Education Committee, Beckenham.

BEDWAS.—Feb. 14.—For erection of a school at Tre Thomas, Bedwas, to accommodate 800 children, together with a manual training centre, for the Monmouthshire Education Committee. Deposit £1 1*s.* Mr. J. Bain, F.R.I.B.A., County Council Offices, Newport, Mon.

BISHOP AUCKLAND.—Feb. 4.—For erection of tuberculosis pavilions and for alterations and additions to the existing administrative blocks at their No. 1 and No. 2 hospitals, situate respectively at Tindale Crescent and Helmington Row, for the Auckland, Shildon, and Willington Joint Hospital Board. Deposit £1 1*s.* Mr. R. B. Thompson, architect, Bishop Auckland.

BLYTH.—Feb. 9.—For erection of new workshops and store at Blyth, comprising three brick buildings, each about 70 feet by 37 feet, with reinforced concrete floors, for the Harbour Commissioners. Deposit £1 1*s.* Mr. C. E. Baldwin, secretary and general manager, Blyth Harbour Commissioners, Blyth.

(*Continued on page 15.*)

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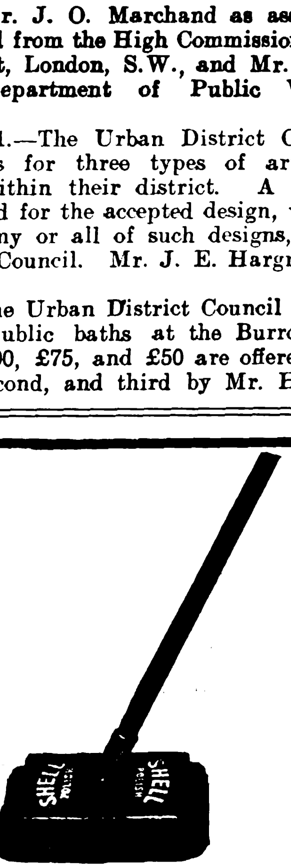

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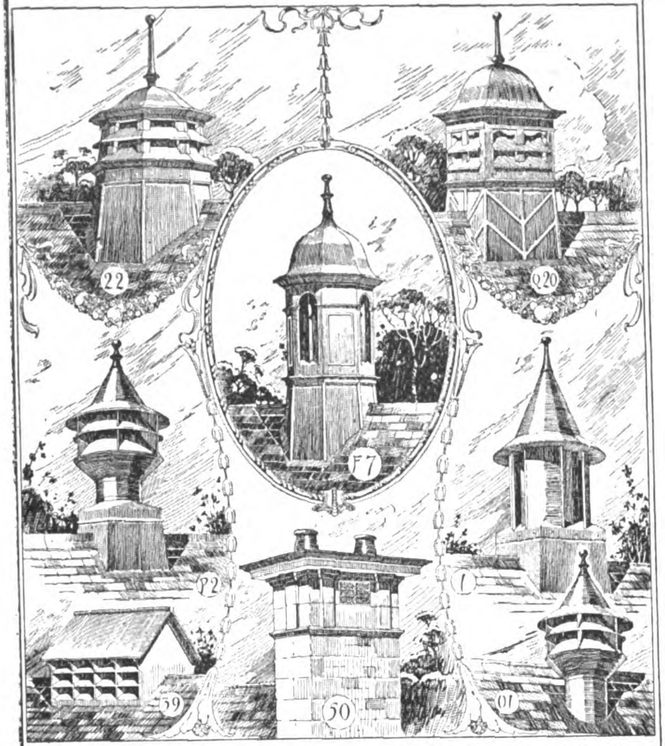

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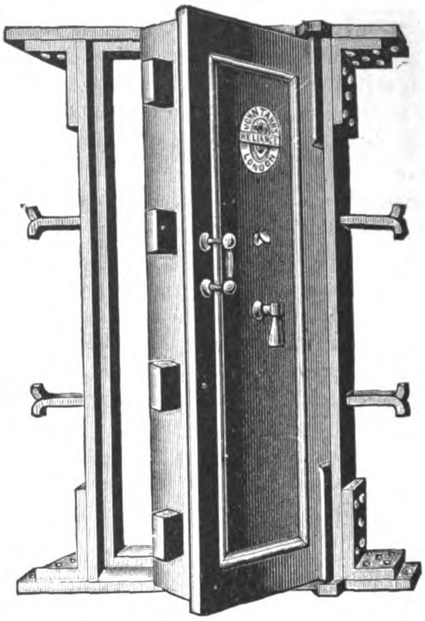

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BRADFORD.—Feb. 4.—For the erection of superintendent's house, waterworks depôt, Belmont Street, for the Corporation. The City Architect, Town Hall, Bradford.

BRIGHOUSE.—Jan. 31.—For trades required in connection with alterations and extensions to foundry and erection of new pattern store at Woodhouse Works—viz. mason, joiner, slater, plasterer, and painter. The new buildings comprise one two-storey building, 150 feet long by 40 feet wide; two single-storey buildings, 130 feet long by 40 feet wide, and 110 feet long by 30 feet wide respectively. Send applications by Jan. 31 to Messrs. J. Blakeborough & Sons, Brighouse.

BRISTOL.—Feb. 10.—For erection of steel and corrugated iron roofing at Temple Meads Goods Station, Bristol, for the Great Western Railway Co. The Engineer, Paddington Station, London, W.

BROADWAY.—Feb. 14.—For erection of an elementary school, for the Worcestershire Education Committee. (Mr. C. E. Bateman, architect, 18 Bennett's Hill, Birmingham.) Send applications by Feb. 3 to Mr. A. Weston Priestley, director of education, County Education Office, Worcester.

CAMBRIDGE.—Feb. 11.—For erection of additional wards, pavilion, &c., at the infectious diseases hospital, for the Town Council. Deposit £2 2*s*. The Borough Surveyor, Guildhall, Cambridge.

CHESTER.—Feb. 9.—For alterations and additions to the Boughton Old Industrial School, Chester, for adaptation as a Home of Detention for fifty boys and girls. Deposit £1. Mr. H. Beswick, F.R.I.B.A., county architect, Newgate Street, Chester.

COAD'S GREEN.—Feb. 14.—For alterations and additions to a dwelling-house at Coad's Green, North Hill, near Launceston. Mr. L. Scantlebury, architect, Callington, Cornwall.

DEVIZES.—Feb. 25.—For erection of a new building at the Wilts. County Asylum to accommodate 200 patients. Send applications and £2 deposit by Feb. 4 to Messrs. G. T. Hine & H. C. Pegg, architects, 35 Parliament Street, Westminster, S.W.

DURHAM.—Feb. 14.—The County Council invite sole tenders for alterations and additions at the following schools:—(1) For Oxhill, Newton Cap, Spennymoor H.E. Schools. Apply at the office of Mr. W. Rushworth, Shire Hall, Durham. (2) For Westgate and Wearhead Schools. Apply at the office of Mr. N. Richley, Shire Hall, Durham.

ELLISTOWN.—Feb. 13.—For erection of a school, for the Leicestershire County Council. Deposit £10 10*s*. The County Education Architect, 33 Bowling Green Street, Leicester.

FEATHERSTONE.—Feb. 28.—For all trades in connection with the erection of 149 working-class dwellings on the Church Fields site, near Station Lane, for the Urban District Council. Deposit £5. Mr. S. Chesney, A.R.I.B.A., architect, Council Offices, Featherstone.

FOLESHILL.—Feb. 16.—For the construction of a brick and concrete underground tar and liquor storage tank, 100 feet long by 98 feet 6 inches wide by 13 feet 6 inches deep, to springing of cover arches at the gas works, Foleshill, for the Coventry Corporation. Deposit £1 1*s*. Mr. F. W. Stevenson, engineer and general manager, Gas Works, Coventry.

GOSBERTON.—Feb. 10.—For erection of cottages in the parish of Gosberton, Lincs., on the following sites, for the Spalding Rural District Council—viz.: three pairs at Cape's Entry, 2½ miles from station; two pairs at Westhorpe, two miles from station; two pairs near Belnie Bridge, two miles from station. Mr. W. H. H. Davis, architect and surveyor, 6 Double Street, Spalding, and 2 York Row, Wisbech.

GRIFFYDAM.—Feb. 13.—For erection of a school for the Leicestershire County Council. Deposit £10 10*s*. The County Education Architect, 33 Bowling Green Street, Leicester.

HENDON.—Feb. 9.—For erection of fifty artisans' dwellings at Child's Hill, for the Hendon Urban District Council. Deposit £3 3*s*. Mr. George Hornblower, architect, 2 Devonshire Terrace, Portland Place, London, W.

HINCKLEY.—Feb. 13.—For erection of a handicraft centre, for the Leicestershire County Council. Deposit £5 5*s*. The County Education Architect, 33 Bowling Green Street, Leicester.

HIGH CARLEY.—Feb. 21.—For erection of tuberculosis sanatorium (about 90 beds) at High Carley, near Ulverston, for the Lancashire County Council (whole or separate trades). Deposit £1 1*s*. Mr. D. J. Brundritt, architect, County Square, Ulverston.

HIGHTOWN.—Feb. 6.—For the various works required in erection of Liberal club at Hightown, Yorks. Messrs. R. Castle & Son, architects, London City and Midland Bank Chambers, Cleckheaton.

HORNCHURCH.—Feb. 11.—For erection of dressing accommodation at the swimming bath attached to their cottage homes, Hornchurch, Essex, for the Guardians of St. Leonard, Shoreditch. Mr. F. D. Smith, A.R.I.B.A., architect, Parliament Mansions, Victoria Street, S.W.

HOVE.—Feb. 4.—For enlarging the steam roller sheds at Sackville Road depôt, for the Town Council. Mr. H. H. Scott, borough surveyor, Town Hall, Hove.

HOVE (SUSSEX).—Feb. 4.—For additions and alterations to the police station in the Town Hall and constructing underground lavatories in Norton Road. Deposit £1 1*s*. Mr. H. H. Scott, borough surveyor, Town Hall, Hove.

HUNSLET.—Feb. 2.—For demolition of 19 houses, Denmark Street and Neale Place, Leathley Road, Hunslet. Mr. G. Fredk. Bowman, architect, 5 Greek Street, Leeds.

IRELAND.—Feb. 7.—For erection of new boiler house, chimney shaft, and new boiler and economiser at the District Lunatic Asylum, Ennis, county Clare. Deposit £3 3*s*. Messrs. Sheehy & Tierney, architects, 57 George Street, Limerick, or Mr. J. Mackey, quantity surveyor, 58 Dame Street, Dublin.

IRELAND.—Feb. 7.—For erection of shops and dwelling-house in South Main Street, Bandon, for Mr. E. H. Harte. Messrs. Chillingworth & Levie, civil engineers and architects, 11 South Mall, Cork.

IRELAND.—Feb. 9.—For erection of lavatories at their Belfast terminus, for the Great Northern Railway Co. (Ireland). Deposit £1 1*s*. The Engineer's Offices at Dublin and Belfast.

IRELAND.—Feb. 9.—For erection of a steel-framed shed, 42 feet by 25 feet, covered with corrugated iron, for the Great Northern Railway Co. (Ireland). Deposit £1 1*s*. Mr. T. Morrison, secretary, Amiens Street Terminus, Dublin.

IRELAND.—Feb. 12.—For erection of a building to comprise mill room, cream room, office, and coal store at Abbeydorney, for the Committee of Abbeydorney Co-operative Dairy Society. Messrs. F. & C. Downing, solicitors, Denny Street, Tralee.

IRELAND.—Feb. 14.—For building and fencing forty-two labourers' single cottages, also for repairing nineteen labourers' cottages throughout the district, for the Milford Rural District Council. Mr. S. Watters, clerk, Board Room, Milford.

LAKESIDE.—Feb. 16.—For erection of a residence at Finsthwaite, Lakeside, to be tendered for: (1) erection of residence and out-offices, &c.; (2) making and forming road and approaches; (3) well sinking. Send applications by Feb. 2 to Messrs. J. W. Grundy & Son, architects and surveyors, Central Buildings, Ulverston.

LEEDS.—Feb. 12.—For construction of (*a*) an extension of a transformer chamber at 1 Whitehall Road, and (*b*) the construction of a transformer chamber (overground) at Stanningley Park, for the Corporation Electric Lighting Department. Mr. C. Nelson Hefford, manager, Whitehall Road, Leeds.

LEEDS.—Feb. 10.—For erection of a wooden shelter at the Killingbeck Sanatorium, for the Hospitals Sub-Committee. The Steward, Seacroft Hospital, Yorkshire.

LLANVAIR DISCOED.—Feb. 14.—For erection of a school at Llanvair Discoed (between Wentwood and Caerwent), to accommodate sixty children, for the Monmouthshire Education Committee. Deposit £1 1*s*. Mr. J. Bain, F.R.I.B.A., County Council Offices, Newport, Mon.

LONDON.—Feb. 4.—For erection of schools and caretaker's cottage in Alexandra Road, Hounslow, for the Heston and Isleworth Urban District Education Committee. Deposit £2 2*s*. Mr. J. G. Carey, architect and surveyor, Council House, Hounslow.

LONDON.—Feb. 4.—The Commissioners of H.M. Works, &c., are prepared to receive tenders for the execution of ordinary works and repairs to the buildings in their charge in the (1) North District, (2) South District, for a period of three years from April 1, 1914. Deposit £1 1*s*. in respect of each district. H.M. Office of Works, &c., Storey's Gate, London, S.W.

LONDON.—Feb. 11.—For erection of public washhouses, for the Stoke Newington Borough Council. The Town Clerk, Town Hall, Milton Road, Stoke Newington, N.

LONDON.—Feb. 11.—For erection of a receiving-room for measles at the Grove Fever Hospital, Tooting Grove, Tooting Graveney, S.W., for the Metropolitan Asylums Board. Deposit £1. Mr. W. T. Hatch, M.I.C.E., M.I.M.E., engineer-in-chief, the Office of the Board, Embankment, E.C.

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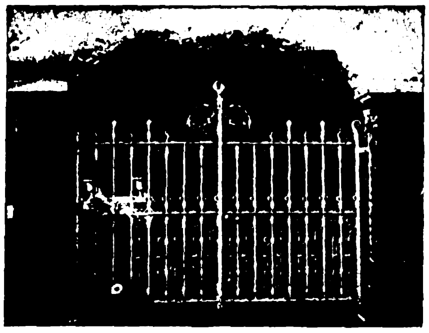

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THE EVENT OF 1914.

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Long Benton.—Feb. 4.—For erection of a permanent isolation pavilion at Scaffold Hill, near Long Benton, for the Earsdon Joint Hospital Boad. Mr. J. R. MacMillan, inspector of hospitals, Council Offices, Shiremoor.

Lowestoft.—Feb. 16.—For erection and completion of an additional ward pavilion and porters' lodge at the sanatorium, Rotterdam Road, for the Urban Sanitary Authority. Deposit £2. Mr. G. H. Hamby, A.M.I.C.E., borough surveyor, Town Hall, Lowestoft.

Manchester.—Feb. 4.—For erection of new larders at the New Bridge Street workhouse, for the Guardians. Deposit 10*s*. 6*d*. Mr. A. J. Murgatroyd, architect, 23 Strutt Street, Manchester.

Mossley.—Feb. 2.—For erection of Livingstone Council School, for the Education Committee. Send applications by Feb. 2 to Messrs. Winder & Taylor, architects, 61 Union Street, Oldham.

Newton Abbot.—Feb. 10.—For erection of extensions at the Newton Abbot hospital. Deposit £1 1*s*. Mr. J. C. Beare, architect, Newton Abbot.

Norfolk.—Feb. 6.—For erection of three pairs of cottages in each of the parishes of Great Cressingham, Holme Hale, and North Pickenham, in the rural district, for the Swaffham Rural District Council. Deposit £1 1*s*. Mr. S. Matthews, clerk, Swaffham, Norfolk.

Normanton.—Feb. 12.—For erection of seventy-six houses for the working classes near Church Lane, for the Urban District Council. Persons may tender for the whole of the works or for separate trades. Mr. A. Hartley, architect and surveyor, Council Offices, Normanton.

Oldham.—Feb. 4.—For works required, including steelwork, in connection with extension of Rhodes Bank destructor, for the Surveyor's and Buildings Committee. The Borough Surveyor's Office, Oldham.

Ossett.—Feb. 5.—For the various works required in erection of a shop at Ossett, Yorks., for the Industrial Co-operative Society, Ltd. Messrs. Kirk, Sons & Ridgway, F.R.I.B.A., architects, surveyors, and valuers, Market Place, Dewsbury.

Otley.—For erection of a pair of cottages at Otley, Suffolk, for the Trustees of the Ipswich Municipal Charities. Apply at once to Mr. H. R. Hooper, A.R.I.B.A., architect, Ipswich.

Partridge Green.—Feb. 21.—For additions to the West Grinstead (Jolesfield C.E.) schools, Partridge Green, Sussex. Send names at once to Mr. E. H. Lingen Barker, architect, 4 Moscow Court, London, W.

Pelton.—Feb. 17.—For erection of a school at Pelton Lane, to accommodate about 960 scholars, for the Durham County Council. Mr. W. Rushworth, Shire Hall, Durham.

Ramsgate.—Feb. 4.—For structural alterations and additions, and other works in connection therewith to St. George's Schools. Deposit £5. Messrs. Jennings & Gray architects, 4 St. Margaret's Street, Canterbury. (See advertisement.)

Sandbach.—Feb. 5.—For construction of a concrete depositing tank and alterations at the pumping station, for the Sandbach Urban District Council. Mr. W. Woodley Wyatt, engineer, Whitchurch, Salop.

Scotland.—Feb. 2.—For mason, carpenter, slater, plumber, plasterer, painter, and glazier works of dwelling-house to be erected at Baron Street, Buckie, for Mr. W. Thomson. Mr. W. Hendry, 91 West Church Street, Buckie.

Scotland.—Feb. 9.—For execution of the digger-work, brickwork, and steelwork of an hotel proposed to be constructed at Gleneagles, Perthshire. Deposit £2 2*s*. Mr. James Miller, A.R.S.A., architect, 15 Blythswood Square, Glasgow.

Selby.—Feb. 9.—The West Riding Small Holdings and Allotments Committee invite whole or separate tenders for the following works in connection with two new farmsteads at Selby, viz.: builder, carpenter and joiner, ironfounder, tiler, plasterer, plumber and glazier, painter. The West Riding Land Agent, County Hall, Wakefield. Send £1 deposit by separate letter to the West Riding Treasurer, County Hall, Wakefield.

Sheffield.—For erection of a picture palace near Endcliffe Park, for the Ecclesall and Endcliffe Picture Palace, Ltd. Mr. J. P. Earle, architect, 9 Norfolk Row, Sheffield.

Southend-on-Sea.—Feb. 2.—For erection of ward pavilion at the sanatorium, Balmoral Road, for the Corporation. Deposit £1 1*s*. Mr. E. J. Elford, M.I.C.E., borough engineer and surveyor, Southend-on-Sea.

Swindon.—Feb. 9.—For the construction of foundations and condenser pit for a turbo-generator and the construction of a cooling tower pond at their electricity works, for the Corporation. Mr. A. Dimmack, M.I.E.E., borough electrical engineer, Electricity Works, Swindon.

Thorne.—Feb. 20.—The West Riding Education Committee invite whole or separate tenders for the following works in connection with Thorne new school—viz.: builder, joiner, slater, plumber, plasterer, painter, ironfounder and smith, and asphalter. The Education Architect, County Hall, Wakefield. Send £1 deposit to the West Riding Treasurer, County Hall, Wakefield.

Todmorden.—Feb. 3.—For erection and completion of bandstand, three shelters, and bowling green pavilion at the Centre Vale Park. The Borough Engineer, Municipal Offices, Rise Lane, Todmorden.

Upwey.—Feb. 7.—For a new shelter, 100 yards grouping targets, concrete wall, and other repairs at the Bincombe range, for the Territorial Force Association of the County of Dorset. Mr. F. T. Maltby, A.M.I.C.E., architect and surveyor, Dorchester.

Wales.—For erection of a cinema, Mostyn Street, Llandudno. Deposit £1 1*s*. Mr. A. Hewitt, architect, Town Hall Chambers, Llandudno.

Wales.—For alterations and extensions to Caeffynnon, Llanelly, for Mr. J. Holmes. Send names immediately to Messrs. W. Griffiths, F.S.I., & Son, architects, Llanelly.

Wales.—Jan. 31.—For erection and completion of the Port Talbot, Aberavon and District Hospital. Send applications and £2 2*s*. deposit by Jan. 31 to Mr. F. B. Smith, M.S.A., architect, Port Talbot.

Wales.—Feb. 2.—For erection of rooms for manual instruction and domestic subjects at Pentrebach mixed school; also for school cupboards for various schools in the borough of Merthyr Tydfil. The Borough Architect, Town Hall, Merthyr Tydfil.

Wales.—Feb. 3.—For erection of an electric power substation at Uplands, Swansea, for the Corporation. Deposit £1 1*s*. Mr. E. E. Morgan, A.R.I.B.A., borough architect, 3 Prospect Place, Swansea.

Wales.—Feb. 4.—For carrying out the following works, for the Ogmore and Garw Urban District Council: (*a*) building retaining and boundary walls in rubble masonry; (*b*) the erection of iron fencing and iron gates, &c., which will be supplied by the Council; (*c*) levelling, draining, and forming footpaths, &c., at their recreation grounds in Nantymoel and Ogmore Vale. The Council Offices, Brynmenyn, Glam.

Wales.—Feb. 4.—For rebuilding the Royal Oak Inn, Penlock, Abercynon, for Messrs. Giles & Harrap, Merthyr. Mr. C. M. Davies, M.S.A., 112 High Street, Merthyr.

Wales.—Feb. 6.—For the extension of retort house and coal store and two tubular regenerators and settings at the Porth gasworks, for the Rhondda Urban District Council. Deposit £1 1*s*. Mr. O. Thomas, engineer and manager, Gas and Water Offices, Pentre, Rhondda.

Wales.—Feb. 7.—For erection of new farm buildings and alteration of existing buildings at Castle Eley Farm, Cyffig, and Woolstone Farm, St. Clears, for the Carmarthenshire County Council (Small Holdings Committee). Separate tenders are required for Castle Eley—No. 2 holding, new house and adaptation of farm buildings; No. 3 holding, adaptation of farm buildings; No. 4 holding, rebuilding house and farm buildings; No. 5 holding, new house and farm buildings; No. 6 holding, new house and farm buildings. Woolstone—No. 1 holding, adaptation of farm buildings; No. 2 holding, new house and adaptation of farm buildings. Mr. W. V. Morgan, A.R.I.B.A., county architect, County Offices, Carmarthen.

Wales.—Feb. 9.—For the renovation and conversion of the old Snowdon Valley Hotel, Llanberis, Carnarvon, to business premises and private dwelling-house, also for repairs to certain cottages situate in Snowdon Street, Ceunant Street, and Rallt Goch, Llanberis, for the Governors of the Ruthin Charities. Mr. J. W. Roberts, M.S.A., M.R.S.I., architect and surveyor, 36 High Street, Pwllheli.

Wales.—Feb. 11.—For erection of eighteen houses at Abercrave, twenty-two houses at Ystradgynlais, and twenty houses at Colbren, for the Ystradgynlais District Council. Mr. J. C. Rees, architect, Parade Chambers, Neath.

Warminster.—Feb. 20.—For erection of an isolation hospital and work in connection therewith in the Bradley Road, for the Warminster Joint Isolation Hospital Committee. Deposit £2 2*s*. Mr. C. H. Lawton, architect, 32 High Street, Warminster.

Wellington.—Feb. 5.—For erection of Council offices. Mr. E. T. Howard, architect, North Street, Wellington.

West Ham.—Feb. 16.—For erection of the Knox Road special school, Forest Gate, for the West Ham Education Committee. Send names and £5 deposit by Feb. 2 to Mr. W. Jacques, A.R.I.B.A., architect to the Education Committee, 2 Fen Court, Fenchurch Street, E.C.

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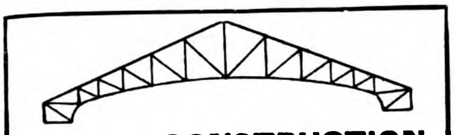

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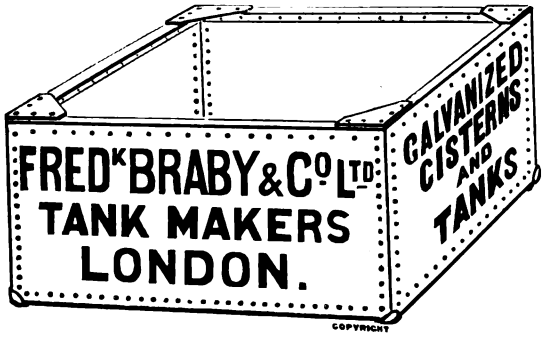

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TENDERS.

ASTON.

For the erection of new premises in Thomas Street and Pool Street, Aston, for the Moss Gear Co., Ltd. Messrs. INGALL, BRIDGWATER & PORTER, Licentiate R.I.B.A., architects and surveyors, Birmingham.

Dallow & Sons	£2,070	0	0
Briley	1,958	0	0
Teall & Son	1,950	0	0
Harper	1,883	0	0
Lee & Son	1,860	0	0
T. JOHNSON*	1,737	0	0

* Amended estimate accepted.

HARWELL.

For the erection of four workmen's dwellings, with other works, for the Wantage Rural District Council. Mr. J. W. HARRIS, surveyor, Challow, Wantage.

G. Percy Trentham, Ltd.	£1,262	0	0
Organ & Sons	1,000	0	0
Stibbs & Son	809	0	0
Cox & Son	809	0	0
Simms & Son	802	0	0
J. P. BARRETT, West Hanney (*accepted*)	797	0	0
Surveyor's estimate	813	0	0

LONDON.

For the rearrangement of stores block at Queen Mary's Hospital, for the Metropolitan Asylums Board. Mr. W. T. HATCH, M.I.C.E., engineer-in-chief.

Smith & Sons (Norwood)	£660	0	0
Wall	620	0	0
J. ELLIMAN, Beckenham (*recommended*)	595	0	0

For the construction of receiving room for measles at the Brook Hospital, Shooter's Hill, Woolwich, for the Metropolitan Asylums Board. Mr. W. T. HATCH, M.I.C.E., engineer-in-chief.

Rushton & Cory	£299	0	0
Dyke	298	0	0
Wall	282	0	0
Gardner & Hazell	275	0	0
E. MILLS, Blackheath (*recommended*)	247	0	0

For the construction of roads and sewers in the development of a further portion of the White Hart Lane estate, Tottenham, to the north of Risley Avenue, for the London County Council.

Markham & Markham	£3,981	0	0
Ford	2,965	5	4
Cloke	2,945	16	7
Wheeler & Co.	2,899	14	4
Griffiths & Co.	2,821	1	0
Bell & Sons	2,765	0	0
Vine	2,575	18	9
Farrow	2,525	6	11
Coxhead	2,468	0	0
Bloomfield	2,410	7	4
NASH & CRACKNELL, Hendon (*recommended*)	2,149	8	8

NORTH SHIELDS.

For the erection of the proposed Y.M.C.A. building (first contract). Mr. A. B. PLUMMER, F.R.I.B.A., architect, Newcastle-on-Tyne.

H. D. Burton, 60 King Street, North Shields, lowest with additions (*accepted*).

SCOTLAND.

For the erection of a Y.M.C.A. Institute in High Street, Ayr.

Accepted tenders.

Mason work, D. Kirkland.
Joiner work, J. & D. Meikle.
Slater and plumber work, J. Meikle & Son.
Plaster and cement work, J. Leggat & Son.
Painter work, M'Gilvray & M'Culloch.
All of Ayr.

SOUTHAMPTON.

For erection of four cottages at the Otterbourne waterworks, for the Corporation.

Stevens & Co.	£1,435	0	0
Jenkins & Sons	1,394	0	0
Franklin & Co.	1,337	16	4
Payne	1,334	17	9
Holly & Herbert	1,272	0	0
Fussell	1,264	6	10
Hales & Sons	1,230	0	0
Saunders	1,149	0	0
PITFIELD BROS., Eastleigh (*accepted*)	881	5	0

WALES.

For the erection of ten houses at Glyn-Neath, for the Aberpergwm Building Club. Mr. G. A. TREHARNE, architect, Aberdare.

JONES BROS., Ystalyfera, near Swansea (*accepted*)	£2,180	0	0

For the erection of a further ten houses (second contract), as above.

JONES BROS., Ystalyfera (*accepted*)	£2,360	0	0

YORK TOWN.

For the erection of a cinema theatre to be erected in London Road, York Town, Surrey, for Mr. G. Doman. Mr. W. J. HODGSON, A.M.I.C.E., architect, Camberley.

McCarthy Fitt	£1,987	0	0
Cæsar Bros.	1,924	0	0
T. King	1,853	0	0
W. W. King	1,747	10	0
J. W. SEWARD, Wokingham (*accepted*)	1,743	0	0
Sanderson	1,355	15	0

SCOTTISH MASTER PAINTERS.

THE annual meeting of the Association of Master Painters in Scotland was held at Galashiels on the 16th inst. The business meeting was well attended, and among those present were Mr. Higson (president), Messrs. Butterworth and Harwood (vice-presidents), and Mr. Sutherland (secretary), of the English Association of Master Painters; Mr. Morrow, President of the Irish Association; and Provost Sutherland, Galashiels, who welcomed the company to the town.

The annual report showed that the membership of the Association on December 31 last numbered 269, being an increase of forty over last year. The Committee noted with satisfaction that there had been a large increase to the membership of Edinburgh, Leith, and vicinity Master Painters' Association, and also that Kirkcaldy and Perth Associations had affiliated to the National Association, there being now ten affiliated associations. The relations between masters and workmen in the practical carrying out of their business during the past year had been satisfactory. A few minor complaints had been raised at the instance of the operative societies as to alleged infringements by the masters of the working rules, but in the main these had been found, on inquiry, to be the results of misunderstandings, and had been afterwards amicably settled. In general, trade during the past year continued good, and in the West of Scotland was somewhat brisker than for some years past. New work, however, continued to be scarce. During the early part of the year there was a trade dispute in Perth, and later in Dundee, but these, after negotiations between the masters and the operatives, were amicably settled. The committee were informed that the demands made by the operative societies in Glasgow, Edinburgh, Dundee, and Kirkcaldy, with reference to the working rules for 1914, were considered to be of so drastic a nature that the Masters' Association had refused to concede them. No definite settlement had so far been arrived at in these places relative to the working rules for 1914, although there had been prolonged negotiations between the representatives of the employers and employees. The working rules for 1914 had been adjusted in Aberdeen, Greenock, and Perth.

Office bearers were elected for the ensuing year as follows: President, Mr. H. M. Tait, Galashiels; Vice-President, Mr. John K. Donald, Glasgow; Secretary and Treasurer, Mr. George J. Cameron, Glasgow.

The Secretary reported that Mr. F. Morley Fletcher, Director of Edinburgh College of Art, who had been appointed adjudicator of the work in the International Travelling Scholarship Competition to the value of £50, open for competition to apprentices and young journeymen in the employment of members of the National Associations of England and Wales, Scotland, and Ireland, had been awarded to Mr. Robert Roughley, Liverpool.

THE New Town Hall Committee of the Newcastle Corporation met last week, when further discussion took place on the question of a site. The members eventually agreed that Eldon Square would be the most suitable site for the proposed structure. It was felt that the scheme should include a Town Hall, Police Court, and Assize Court. A sub-committee was appointed to go fully into the matter, and report as to the probable cost of the entire undertaking.

VARIETIES.

MR. G. PARKER PEARSON has been appointed borough surveyor to the Marlborough Town Council.

MR. SPENCER ROGERS, of Flint, has, out of eighty applicants, been appointed architectural and engineering assistant of the Cornwall County Council.

MESSRS. HENRY DUKE & SON, land agents and surveyors, of Dorchester, have taken into partnership Mr. Henry E. Duke and Mr. A. Barnaby Duke.

THE Denbigh Rural District Council are about to expend an amount approaching £3,000 on workmen's dwellings at Llandulas.

COVENTRY Town Council on Tuesday passed a scheme for the erection of 198 artisans' dwellings at an estimated cost of £40,282.

MR. ROBERT NEILL, for many years head of the well-known building firm of Messrs. Robert Neill & Sons, Manchester, died last week at Bowdon in his 74th year.

MR. TOM G. LUMB, A.M.Inst.C.E., of 26 Birley Street, Blackpool, has taken into partnership his son, Mr. Francis L. Lumb, and Mr. William B. Walton, M.S.A. The style of the firm will in future be Tom G. Lumb, Son & Walton.

MR. G. TOPHAM FORREST, architect to the Northumberland Education Committee, has been appointed architect to the Essex County Council, in the place of Mr. F. Whitmore, retired.

PWLLHELI Town Council has invited the Welsh Housing Association to prepare and submit a scheme for the erection of 20 houses on land belonging to the Corporation. Ten of the houses are to be let at 5*s*. per week, and the remainder at 3*s*. 9*d*. per week.

THE Nantyglo and Blaina District Council have decided that application should be made to the Local Government Board for power to obtain a loan of £24,600 for the erection of 101 houses at Blaina under the Housing of the Working Classes Act.

THE business of B. T. Batsford has for family reasons been converted into a private limited company, of which Mr. Herbert Batsford, the senior partner in the firm of B. T. Batsford, is managing director, and Mr. Harry Batsford assistant manager.

THE date for the annual conference of the Institution of Municipal and County Engineers, to be held in Cheltenham, has been definitely fixed for the 24th, 25th, 26th, and 27th June next. It has been decided to make a special feature of town planning, and also of roads, and, if possible, to arrange for an exhibition of town plans.

THE Executive Committee of the Swansea Harbour Trust have agreed to erect another warehouse at the King's Dock in order to provide for the requirements of the growing general cargo trade. The cost will be about £15,000, and the dimensions 400 feet by 150 feet, which will make it the biggest warehouse in the port.

THE Dean and Chapter of St. Paul's Cathedral wish it to be known that the statements about the condition of the Cathedral fabric which have recently appeared in some newspapers are not authorised by them. The Dean and Chapter hope to issue an official statement very shortly.

THE Finchley District Council have decided to apply to the Local Government Board for sanction to a loan of £93,443 for the building of 300 workmen's cottages on the Woodhouse Estate, North Finchley. The scheme provides for 240 houses each to cost £265, and 60 houses to cost £225 each, the more expensive dwellings to be let at 8*s*. 6*d* a week, and the less expensive at 7*s*. 6*d*.

MR. ROWLAND PLUMBE, F.R.I.B.A., has taken into partnership Mr. J. C. S. Mummery, A.R.I.B.A., and Mr. C. L. Fleming-Williams, A.R.I.B.A., who have been associated with him in his practice for many years. The practice will be continued as heretofore at 13 Fitzroy Square, London, W., under the style of Messrs. Rowland Plumbe & Partners.

THE Restoration Committee at St. Bartholomew-the-Great, Smithfield, have decided to complete the work outside the church on the south side rather than to carry out the electric lighting. The subscriptions are not sufficient for both works. All the ground on the south side will be lowered, and the rough wall left exposed by the demolition of the old schoolhouse for girls will be refaced with stone and flint.

THE Associated Provincial Picture Houses, Ltd., has been promoted with a capital of £500,000, primarily for the purpose of acquiring properties and building sites occupying central positions in the main thoroughfares of provincial cities and towns of the United Kingdom, with a view to erecting thereon high-class cinematograph theatres and cafés, and of operating the same. The architects mentioned in the prospectus are J. R. Naylor, F.R.I.B.A. (surveyor to the Royal Agricultural Society), and G. H. Sale, F.R.I.B.A., Derby; Atkinson & Alexander, AA.R.I.B.A., 199 Piccadilly, London, W.

THE Incorporated Church Building Society held its usual monthly meeting on the 15th inst. at the Society's house, 7 Dean's Yard, Westminster Abbey, S.W. Grants of money were made in aid of the following objects—viz.: Building new churches at Easton, All Saints, Isle of Portland, Dorset, £125; Ilford, St. Luke, Essex, £150; Aldersbrook, St. Gabriel, Essex, £200; Copnor, St. Alban, Portsmouth, £200; and Llandrillo-yn-Rhos, St. George, North Wales, £225; and towards enlarging or otherwise improving the accommodation in the churches at Blofield, St. Andrew and St. Peter, Norfolk, £35; Lambeth, St. Philip, Surrey, £50; Newchapel, St. James, Staffs, £50. In addition to grants for works completed, the sum of £138 was paid towards the repairs of thirteen churches from Trust Funds held by the Society.

AT a meeting of the Birmingham City Council in May last a councillor asked that an instruction should be given to all committees of the Council, when issuing tenders for work in connection with buildings, engineering, or constructive and demolition work of any description where navvies are employed, that the contractor should be required to pay navvies the same rate of wages and observe the conditions of work laid down for builders' labourers, and that all work done direct by the Corporation of this description should be paid for at builders' rate of wages, and under the rules of the Birmingham District Building Trade. The subject was considered by the Joint Committee on Labour and eventually, in December, the following resolution was adopted:—"That, seeing the master builders and road contractors have offered 6½*d*. per hour to all navvies from April 1 next, this Joint Committee on Labour recommend the City Council to pay a minimum rate of 6½*d*. per hour to all navvies employed by the Corporation, as from January 1, 1914, the definition of a navvy to be that already agreed to by the master builders and road contractors, and by the operatives' representatives, but that such definition be subject to adjustment in detail to fit Corporation work." The direct annual cost to the Corporation of carrying out this proposal is estimated at about £9,000.

TRADE NOTES.

MESSRS. C. CHANCELLOR & CO., LTD., have conceived a happy way of impressing architects with the virtues of "Velure" paint. We have received a generous piece of excellent india-rubber protected by a lustrous tin sheath. The beautiful surface of this sheath was, we are told, produced with one coat of "Velure" put on with an ordinary brush. No bending of the tin produces any effect on the covering, thereby bearing out the makers' claim that "Velure" will not crack, chip, peel, blister, or fade.

PROFESSOR SIR THOMAS OLIVER, delivering the first of a course of six lectures on "Industrial Hygiene," at the Royal Institute of Public Health, stated that no metal was more hurtful to health than lead. In this connection it is interesting to note that in a large block of telephone buildings being erected in Leeds, the Government are prohibiting lead glaze, and are even insisting that none of the paint used shall contain any lead whatever, while the whole of the water supply for the building is being provided with Walker's "Ideal" non-poisonous water pipes, the patent of Messrs. E. Walker & Co., Heckmondwike, Yorks.

THE Lowden Schools, Wilts, the new Workhouse Hospital at Hull, and the Union Workhouse for Wellingborough, are being supplied with Shorland's warm air ventilating patent Manchester grates by Messrs. E. H. Shorland & Brother, Ltd., of Failsworth, Manchester. The new Council schools, Oldham, are being supplied with Shorland's patent exhaust roof ventilators. The Wesleyan Schools, Gillingham, are being supplied with Shorland's warm air ventilating patent Manchester stoves.

THE Engineer to H.M. Board of Public Works in Ireland used "Pudlo" in an underground heating chamber at the G.P.O., Dublin, and the result being entirely successful, he has now specified it for a large job at the Botanic Gardens, Dublin. Rough casting being particularly liable to the penetration of damp, many architects are specifying the powder "Pudlo" to be incorporated in the cement. One of the latest users is the architect for the Middleton Sanatorium, near Wakefield. Messrs. Bromley & Dahl also have specified it in the repairs to St. Margaret's at Folkestone.

THE
Architect and Contract Reporter.
FRIDAY, FEBRUARY 6, 1914.

EDITORIAL NOTICES.

The Editor will always be pleased to examine drawings or articles with a view to publication, but cannot be responsible for the safety of those sent, though every reasonable care will be taken. Contributors desiring payment should clearly state their wishes. No payment will be made until after publication, and a commission to prepare articles or drawings does not necessarily imply acceptance or approval.

No communication can be inserted unless authenticated by the name and address of the writer—not in every case for publication, but as a guarantee of good faith.

We have upon our staff a very eminent Barrister, who will be glad to answer in the columns of this paper any legal question that may be of interest to our readers. All letters must be addressed " Legal Adviser," Office of " The Architect," Imperial Buildings, Ludgate Circus, London, E.C.

The Editor will be glad to receive from Architects in London and the Provinces results of Competitions and Tenders and other particulars of Works in progress in which they may be interested.

TENDERS, ETC.

⁂ *As great disappointment is frequently expressed at the nonappearance of Contracts Open, Tenders, &c., it is particularly requested that information of this description be forwarded to the Office, Imperial Buildings, Ludgate Circus, London, E.C., not later than 2 P.M. on Thursdays.*

COMPETITIONS OPEN.

CANADA (OTTAWA).—April 2.—Architects are invited to submit by April 2 sketch designs in a preliminary competition for the erection of Departmental and Courts Buildings at Ottawa, Ontario. From the designs submitted six will be chosen by the assessors to take part in a final competition, for which the five unsuccessful competitors will each receive an honorarium of 3,000 dollars. The competition is limited to British subjects practising in the British Empire. The Government has appointed Mr. T. E. Collcutt, Mr. J. H. G. Russell, and Mr. J. O. Marchand as assessors. Conditions may be obtained from the High Commissioner for Canada, 17 Victoria Street, London, S.W., and Mr. R. C. Desrochers, secretary, Department of Public Works, Ottawa.

HENDON.—March 2.—The Urban District Council invite competitive designs for public baths at the Burroughs, Hendon. Premiums of £100, £75, and £50 are offered for the designs placed first, second, and third by Mr. H. W. Wills, F.R.I.B.A., who will act as assessor. Particulars, &c., may be obtained on payment of £1 1*s.* deposit (returnable) to Mr. Henry Humphries, clerk, Council offices, Hendon, N.W.

IRELAND.—March 20.—The Belfast Corporation invite competitive designs for an Art Gallery and Museum, to be erected in the Botanic Gardens. The complete scheme will involve an outlay of £75,000, but it is only intended to spend at first £30,000. Mr. John J. Burnet, A.R.S.A., LL.D., will act as assessor. The conditions and plan of site may be had on the payment of £1 1*s.* deposit (returnable on receipt of a bonâ-fide design) to Mr. R. Meyer, Town Clerk, Belfast.

LONDON.—March 11.—The London Society offer a prize (the Gold Medal of the Society and £15) for the best design for the improvement of the north and south entrances to the Broad Walk of Kensington Gardens, London. The Secretary, R.I.B.A., 9 Conduit Street, Hanover Square, London, W.

LONDON.—May 4.—The Bridge House Estates Committee of the Corporation of the City of London invite designs from British architects for the architectural treatment of the new St. Paul's Bridge. The conditions of the competition and instructions may be obtained upon payment of a deposit of £3 3*s.*, which will be returned on receipt of a design in accordance with the conditions. A premium of £300 is offered for the design which may be placed first, and further premiums of £200 and £100 respectively. The committee will be advised by Sir William Emerson, P.P.R.I.B.A., as assessor, whose decision will govern the award of the premiums and be final and binding in all stages of the competition. The Town Clerk, Guildhall, London, E.C.

CONTRACTS OPEN.

ABERCARN.—Feb. 14.—For erection of a school, to accommodate 400 children, together with a manual training centre, for the Monmouthshire Education Committee. Deposit £1 1*s.* Mr. J. Bain, F.R.I.B.A., County Council Offices, Newport, Mon.

BEACONSFIELD.—Feb. 14.—For erection of thirty-four cottages and the construction of roads and sewers, and the provision of all necessary materials and labour, for the Urban District Council. Deposit £3. Mr. H. Sargeant, surveyor, Baring Road, Beaconsfield.

BEDWAS.—Feb. 14.—For erection of a school at Tre Thomas, Bedwas, to accommodate 800 children, together with a manual training centre, for the Monmouthshire Education Committee. Deposit £1 1*s.* Mr. J. Bain, F.R.I.B.A., County Council Offices, Newport, Mon.

BELPER.—Feb. 12.—For erection of five lock-up shops adjoining the Midland Station, King Street. The Midland Railway Co.'s Engineer's Office, Derby Station.

BLACKLEY.—Feb. 12.—For cleaning the ceilings in the wards and the corridors at their Booth Hall Infirmary, Charlestown Road, for the Guardians of the Prestwich Union. The Steward at the Infirmary.

BODMIN.—Feb. 20.—For erection of a residence in Harleigh Road, for Mr. W. W. R. Nicholls, of St. Austell. Mr. W. J. P. Jenkins, architect, Bodmin.

BRADFORD.—Feb. 19.—For (*a*) building a battery room at Valley Road electricity works, contract " R. 34 " ; and (*b*) supplying and erecting the constructional iron and steel work for the foregoing building, contract " R. 35," for the Corporation. Deposit £1 1*s.* each contract. Mr. T. Roles, city electrical engineer and manager, Electricity Offices, Town Hall, Bradford.

CAMBRIDGE.—Feb. 11.—For erection of additional wards, pavilion, &c., at the infectious diseases hospital, for the Town Council. Deposit £2 2*s.* The Borough Surveyor, Guildhall, Cambridge.

(*Continued on page* 15.)

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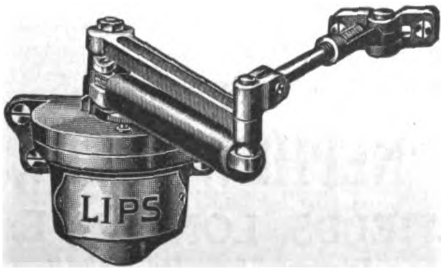

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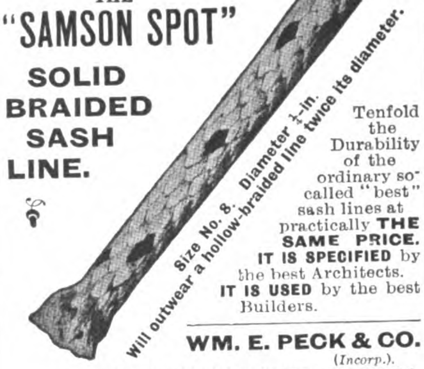
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Chester.—Feb. 16.—For (*a*) alterations to the old female wards; (*b*) alterations and additions to chapel at the Upton Asylum, Chester. Deposit £2. Mr. H. Beswick, F.R.I.B.A., county architect, Newgate Street, Chester.

Coad's Green.—Feb. 14.—For alterations and additions to a dwelling-house at Coad's Green, North Hill, near Launceston. Mr. L. Scantlebury, architect, Callington, Cornwall.

Coseley.—Feb. 13.—For retiling roofs at Hurst Hill Council Schools, for the Coseley Education Committee. (Messrs. Ewen Harper, Bro. & Co., architects, Ruskin Chambers, Corporation Street, Birmingham.) Send applications and 10*s.* 6*d.* deposit by Feb. 13 to Mr. F. J. C. Poole, secretary, Education Office, Coseley, near Bilston.

Crumpsall.—Feb. 18.—For extension of goods yard, for the Lancashire and Yorkshire Railway Co. The Engineer, Hunt's Bank, Manchester.

Dorchester.—Feb. 9.—For erection of semi-detached houses, Victoria Park Estate. Deposit 10*s.* 6*d.* Messrs. Jackson, Son & Feacey, architects, 26 South Street, Dorchester.

Durham.—Feb. 14.—The County Council invite sole tenders for alterations and additions at the following schools:—(1) For Oxhill, Newton Cap, Spennymoor H.E. Schools. Apply at the office of Mr. W. Rushworth, Shire Hall, Durham. (2) For Westgate and Wearhead Schools. Apply at the office of Mr. N. Richley, Shire Hall, Durham.

Ebbw Vale.—Feb. 12.—For erection of a drill hall at Ebbw Vale for the 3rd Battalion the Monmouthshire Regiment, for the Monmouthshire Territorial Force Association. Messrs. Habershon, Fawckner & Co., F.R.I.B.A., architects, 41 High Street, Newport, Mon.

Egremont.—Feb. 12.—For the various works required in erection of Sunday schools for St. Mary's Church, Egremont, Cumberland. Send applications by Feb. 7 to Mr. J. H. Martindale, F.R.I.B.A., architect, Eaglesfield Abbey Rooms, Castle Street, Carlisle.

Ellistown.—Feb. 13.—For erection of a school, for the Leicestershire County Council. Deposit £10 10*s.* The County Education Architect, 33 Bowling Green Street, Leicester.

Featherstone.—Feb. 28.—For all trades in connection with the erection of 149 working-class dwellings on the Church Fields site, near Station Lane, for the Urban District Council. Deposit £5. Mr. S. Chesney, A.R.I.B.A., architect, Council Offices, Featherstone.

Foleshill.—Feb. 16.—For the construction of a brick and concrete underground tar and liquor storage tank, 100 feet long by 98 feet 6 inches wide by 13 feet 6 inches deep, to springing of cover arches at the gas works, Foleshill, for the Coventry Corporation. Deposit £1 1*s.* Mr. F. W. Stevenson, engineer and general manager, Gas Works, Coventry.

Folkingham.—For erection of a residence at Folkingham, Lincs. Mr. G. W. Cooper, architect and surveyor, 1 Market Place, Sleaford.

Glass Houghton.—For erection of semi-detached houses, Glass Houghton, Yorks. Mr. F. Scatchard, architect, Midland Bank Chambers, Castleford.

Great Houghton.—Feb. 10.—For the various works required to be done in the erection of forty-nine houses and a shop, and the construction of new streets, for the Dearne Valley Colliery Co., Ltd. Send applications by Feb. 10 to Mr. A. B. Linford, architect, Carlton Villa, Wombwell.

Greenfield.—For the various trades required in erection of branch premises for the Greenfield Co-operative Society, Ltd. Deposit £1 1*s.* The Architect's Department, Co-operative Wholesale Society, Ltd., 1 Balloon Street, Manchester.

Griffydam.—Feb. 13.—For erection of a school for the Leicestershire County Council. Deposit £10 10*s.* The County Education Architect, 33 Bowling Green Street, Leicester.

Halifax.—Feb. 11.—For erection of garage, workshop, and showrooms, for the Halifax Motor Exchange. Send names by Feb. 11 to Mr. T. L. Patchett, architect and surveyor, George Square, Halifax.

Hendon.—Feb. 16.—For erection of fifty artisans' dwellings at Child's Hill, for the Hendon Urban District Council. Deposit £3 3*s.* Mr. G. Hornblower, 2 Devonshire Terrace, Portland Place, London, W.

Hinckley.—Feb. 13.—For erection of a handicraft centre, for the Leicestershire County Council. Deposit £5 5*s.* The County Education Architect, 33 Bowling Green Street, Leicester.

High Carley.—Feb. 21.—For erection of tuberculosis sanatorium (about 90 beds) at High Carley, near Ulverston, for the Lancashire County Council (whole or separate trades). Deposit £1 1*s.* Mr. D. J. Brundritt, architect, County Square, Ulverston.

Hornchurch.—Feb. 11.—For erection of dressing accommodation at the swimming bath attached to their cottage homes, Hornchurch, Essex, for the Guardians of St. Leonard, Shoreditch. Mr. F. D. Smith, A.R.I.B.A., architect, Parliament Mansions, Victoria Street, S.W.

Hull.—Feb. 19.—For the necessary work to be performed in erection of a girls' secondary school, Cottingham Road, for the Education Committee. Deposit £2 2*s.* Mr. J. H. Hirst, city architect, Guildhall, Hull.

Ings.—Feb. 13.—For the whole or separate works required in converting Higher Grassgarth, Ings, Westmoreland, into two country houses, and for constructing a water supply. Mr. S. Shaw, F.R.I.B.A., architect, Kendal.

Ireland.—Feb. 10.—For erection and completion of premises and other works at Buckingham Place, George's Quay, Cork, for Messrs. T. R. Holland & Co. Mr. J. F. M'Mullen, M.R.I.A.I., architect, 30 South Mall, Cork.

Ireland.—Feb. 14.—For building and fencing forty-two labourers' single cottages, also for repairing nineteen labourers' cottages throughout the district, for the Milford Rural District Council. Mr. S. Watters, clerk, Board Room, Milford.

Ireland.—Feb. 25.—For erection of a retort house and coal store in concrete, or alternatively in stone, at their Corporation gasworks in Clonmel. Deposit £1 1*s.* Mr. H. O'Connor, A.M.I.C.E., engineer, 1 Drummond Place, Edinburgh.

Isle of Wight.—Feb. 23.—For erection of a Sunday school, for the Vicar, Churchwardens, and Building Committee of Holy Trinity Church, Cowes. Mr. J. W. Bessant, architect, 95 Pelham Road, Cowes, I.W.

Ironbridge.—Feb. 14.—For building a drill hall and stores at the Mount, Ironbridge, for the Shropshire Territorial Force Association. Send applications and £1 1*s.* deposit by Feb. 7 to Mr. J. Butters, architect, Castle Square, Ludlow.

Leeds.—Feb. 12.—For construction of (*a*) an extension of a transformer chamber at 1 Whitehall Road, and (*b*) the construction of a transformer chamber (overground) at Stanningley Park, for the Corporation Electric Lighting Department. Mr. C. Nelson Hefford, manager, Whitehall Road, Leeds.

Leytonstone.—Feb. 24.—For stripping existing slates and reslating the roofs of the public baths, Cathall Road, for the Leyton Urban District Council. Deposit £2. Mr. E. H. Essex, A.M.I.C.E., at the offices of the Council, Town Hall, Leyton.

Llanvair Discoed.—Feb. 14.—For erection of a school at Llanvair Discoed (between Wentwood and Caerwent), to accommodate sixty children, for the Monmouthshire Education Committee. Deposit £1 1*s.* Mr. J. Bain, F.R.I.B.A., County Council Offices, Newport, Mon.

London.—Feb. 11.—For erection of public washhouses, for the Stoke Newington Borough Council. The Town Clerk, Town Hall, Milton Road, Stoke Newington, N.

London.—Feb. 11.—For erection of a receiving-room for measles at the Grove Fever Hospital, Tooting Grove, Tooting Graveney, S.W., for the Metropolitan Asylums Board. Deposit £1. Mr. W. T. Hatch, M.I.C.E., M.I.M.E., engineer-in-chief, the Office of the Board, Embankment, E.C.

London.—Feb. 24.—For raising a water tank of 20,000 gallons capacity 15 feet above the present height at the baths and washhouses, Laurie Grove, New Cross, for the Deptford Borough Council. The Borough Surveyor, Town Hall, New Cross Road, S.E.

Longton.—For erection of a picture palace, fronting to Upper Normacot Road and Herbert Road, in Normacot, Longton, Staffs. Messrs. Nagington & Shennan, architects, 35 Dale Street, Liverpool.

Longhoughton.—Feb. 14.—For erecting a stationmaster's house at Longhoughton, for the North-Eastern Railway. The Stationmaster at Alnmouth, and Mr. William Bell, the company's architect, at York.

Lowestoft.—Feb. 16.—For erection and completion of an additional ward pavilion and porters' lodge at the sanatorium, Rotterdam Road, for the Urban Sanitary Authority. Deposit £2. Mr. G. H. Hamby, A.M.I.C.E., borough surveyor, Town Hall, Lowestoft.

Murton Colliery.—For erection of a workmen's club at Murton Colliery. Deposit £2 2*s.* Messrs. J. Potts & Son, architects, 57 John Street, Sunderland.

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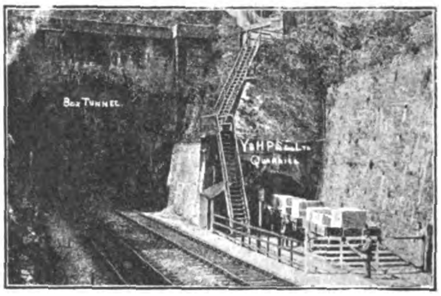

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NEWTON ABBOT.—Feb. 10.—For erection of extensions at the Newton Abbot hospital. Deposit £1 1*s.* Mr. J. C. Beare, architect, Newton Abbot.

NORMANTON.—Feb. 12.—For erection of seventy-six houses for the working classes near Church Lane, for the Urban District Council. Persons may tender for the whole of the works or for separate trades. Mr. A. Hartley, architect and surveyor, Council Offices, Normanton.

RAINHAM.—Feb. 16.—For supply and erection of a fire hose shed for fronting on Upminster Road, Rainham, for the Rainham (Essex) Parish Council. Mr. T. A. Capron, clerk, 2 Orsett Road, Grays.

RAINOW.—Feb. 12.—For erection of a small pumping station at Dane Bent, Rainow, for the Bollington Urban District Council. Mr. S. Knight, clerk, Council Offices, Bollington.

ROUGHTON HEATH.—Feb. 7.—For erection of the administrative block at the isolation hospital site on Roughton Heath, Norfolk, for the Erpingham Rural District Council. Mr. J. T. Willis, deputy clerk to the Council, Cromer Road, Sheringham.

ST. AUSTELL.—Feb. 16.—For erection of a workhouse infirmary, St. Austell. Deposit £2 2*s.* Mr. B. C. Andrew, M.S.A., architect, St. Austell.

SCARBOROUGH.—For erection of a bakery and extension to central premises, for the Scarborough and District Co-operative Society, Ltd. Deposit £2 2*s.* The Architect's Department, the Co-operative Wholesale Society, Ltd., 1 Balloon Street, Manchester.

SCOTLAND.—Feb. 11.—For mason, carpenter, slater, plaster, plumber, glazier, and painter works of additions to the Tough public school, Aberdeen, to accommodate the cookery and woodwork departments, for the Tough School Board. Messrs. D. & J. R. M'Millan, architects, 105 Crown Street, Aberdeen.

SCOTLAND.—Feb. 14.—For carrying out the works in reconstructing their present stores, erecting new buoy store, smithy, &c., and laying down rails at Granton, for the Commissioners of Northern Lighthouses. Deposit £1 1*s.* The Engineer to the Commissioners, 84 George Street, Edinburgh.

SCOTLAND.—Feb. 16.—For the various works required in alterations and extensions to the head office premises of the Corporation tramways at 46 Bath Street, Glasgow—viz.: (1) mason and brick work; (2) carpenter and joiner work; (3) plaster work; (4) plumber work; (5) steel work; (6) marble and tile work. Deposit £1 1*s.* Mr. F. Burnet, F.S.I., 180 Hope Street, Glasgow.

SCOTLAND.—Feb. 23.—For the works to be executed in the construction of station buildings and relative works at Carstairs, for the Caledonian Railway Co. Deposit £2 2*s.* The Company's Engineer, Buchanan Street, Glasgow.

SHAW.—Feb. 11.—For erection of bowling green shelter and pavilion at Dun Wood Park, for the Crompton Urban District Council. Deposit £1 1*s.* Mr. F. F. Gartside, clerk and surveyor, Town Hall, Shaw, near Oldham.

SHEFFIELD.—Feb. 11.—For erection of new children's department and connecting corridor at the Union hospital, Firvale, and for the construction of permanent roads. (Messrs. Potter & Sandford, architects, 16 St. James's Row, Sheffield.) Send names by Feb. 11 to Mr. A. E. Booker, clerk, Union Offices, Westbar, Sheffield.

SHOTTON COLLIERY.—Feb. 14.—For erection of twenty houses at Shotton Colliery, Durham. Mr. J. Hamilton, Colliery Offices, Horden Colliery.

SOUTHPORT.—Feb. 18.—For extension of Chapel Street Station, for the Lancashire and Yorkshire Railway Co. The Engineer's Office, Hunt's Bank, Manchester.

THORNE.—Feb. 20.—The West Riding Education Committee invite whole or separate tenders for the following works in connection with Thorne new school—viz.: builder, joiner, slater, plumber, plasterer, painter, ironfounder and smith, and asphalter. The Education Architect, County Hall, Wakefield. Send £1 deposit to the West Riding Treasurer, County Hall, Wakefield.

TONBRIDGE.—Feb. 12.—For extensions to the boundary walls, &c., at the Tonbridge Barden Road Council School, for the Kent Education Committee. Mr. A. H. Neve, correspondent, 103 High Street, Tonbridge, Kent.

ULVERSTON.—Feb. 12.—For the various branches of work required in building offices at their mart, for the Ulverston and North Lonsdale Auction Mart Co., Ltd. Messrs. J. W. Grundy & Son, architects, Brogden Street, Ulverston.

WALES.—Feb. 11.—For erection of eighteen houses at Abercrave, twenty-two houses at Ystradgynlais, and twenty houses at Colbren, for the Ystradgynlais District Council. Mr. J. C. Rees, architect, Parade Chambers, Neath.

WALES.—Feb. 11.—For erection of new premises, The Hayes, Cardiff, for Mr. P. Halewood. Deposit £1 1*s.* Mr. S. Williams, Licentiate R.I.B.A., architect, Wharton Street, Cardiff.

WALES.—Feb. 16.—For erection and completion of a temporary school to accommodate 495 scholars situate upon the Corporation estate, Baptist Well, Swansea, for the Education Committee. Deposit £1 1*s.* Mr. E. E. Morgan, A.R.I.B.A., borough architect, 3 Prospect Place, Swansea.

WALES.—Feb. 17.—For the construction of a masonry retaining wall, about 350 yards in length, and contingent works, alongside the river Llynfi, and adjoining the sewage disposal works at Garth, Maesteg, for the Masteg Urban District Council. Deposit £1 1*s.* Mr. S. J. Harpur, M.I.C. and M.E., engineer, 32 Commercial Street, Maesteg.

WARMINSTER.—Feb. 10.—For building a bungalow at Victoria Road, for Mr. R. Scott. Deposit £1 1*s.* Mr. A. F. Long, architect, 53 Market Place, Warminster.

WARMINSTER.—Feb. 20.—For erection of an isolation hospital and work in connection therewith in the Bradley Road, for the Warminster Joint Isolation Hospital Committee. Deposit £2 2*s.* Mr. C. H. Lawton, architect, 32 High Street, Warminster.

WELLINGTON.—Feb. 14.—For redecoration of the parish church. Deposit £1 1*s.* Messrs. F. H. Shayler, F.R.I.B.A., & E. R. Bill, M.S.A., architects, Wrekin Hotel Chambers, Wellington, Salop.

WORKSOP.—Feb. 14.—For erection of offices, Beaver Place, for the Worksop Gas Co. Deposit £1 1*s.* Mr. A. H. Richardson, architect and surveyor, Market Place, Worksop.

TENDERS.

BARKING.

For the erection of 38 workmen's dwellings in St. Paul's Road and Linsdells Road, for the Barking Town Urban District Council. Mr. C. J. DAWSON, F.R.I.B.A., architect, Barking.

E. H. GLENNY (*accepted*)	£6,206	3	0

BOOTLE.

For the erection and completion of a chapel in the borough cemetery in Linacre Lane. Messrs. NAGINGTON & SHEENAN, architects, Liverpool. Quantities by the Architects.

Henshaw & Son	£2,571	0	0
J. & G. Chappell	2,445	0	0
Gale	2,439	0	0
Costain & Son	2,395	0	0
Spencer	2,378	0	0
Webster	2,345	0	0
Fowler	2,345	0	0
Duthie & Son	2,295	0	0
Hall & Co.	2,249	0	0
ROBERTS & SLOSS, Liverpool (*recommended*)	2,236	0	0

HEANOR.

For the erection of a cookery and dining-room at the secondary school.

A. EARNSHAW, Ilkeston (*accepted*)	£1,520	0	0

LONDON.

For the work for adapting for park purposes the buildings on the land recently added to Wandsworth Common, for the London County Council.

J. & C. Bowyer	£1,549	0	0
Jewell	1,549	0	0
Garrett & Son	1,450	0	0
Hollingsworth	1,225	0	0
Fletcher	1,221	0	0
E. TRIGGS & Co., Clapham (*accepted*)	1,220	0	0
Architect's estimate	1,299	0	0

For sanitary improvement at the Brecknock school, St. Pancras, for the London County Council.

McCormick & Sons	£1,516	0	0
Price	1,445	0	0
Marchant, Hirst & Co.	1,386	0	0
Finch & Co.	1,100	0	0
Triggs & Co.	1,074	0	0
Barton & Co.	1,045	0	0
Patman & Fotheringham	1,020	0	0
Beattie	1,007	0	0
C. P. ROBERTS & Co., Dalston (*recommended*)	970	0	0
Architect's estimate	1,220	0	0

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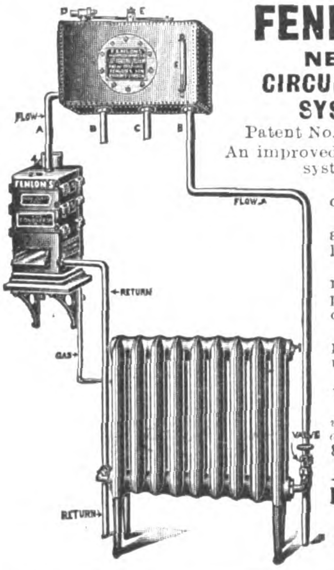

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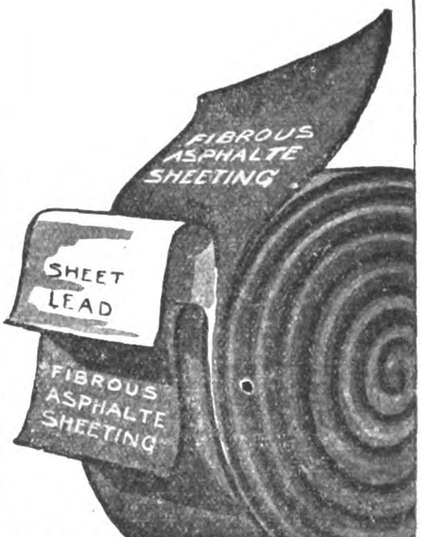

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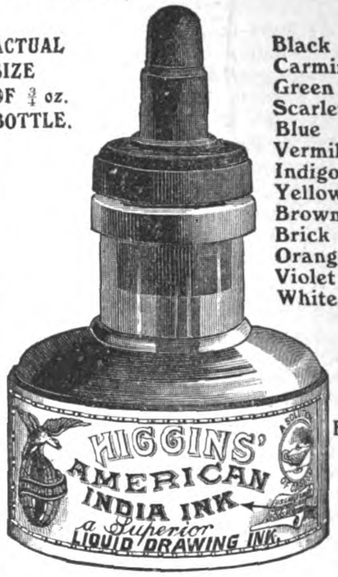

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Violet
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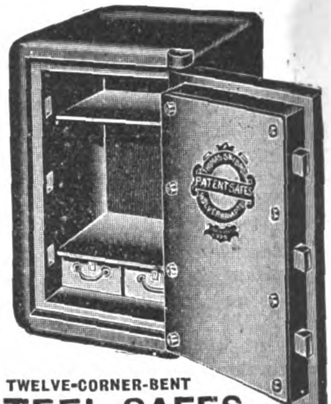

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LOWESTOFT.

For the erection of temporary accommodation for 150 children at Church Road school, for the Education Committee.

Cowieson (*accepted*)	248	10	0

MARGATE.

For the erection of Margate Strict Baptist Chapel. Messrs. G. Baines & Son, architects, 5 Clement's Inn, Strand, London, W.C.

Skinner	£2,028	0	0
Brightman & Son	1,987	0	0
Dorey & Co.	1,950	0	0
Lewis & Sons	1,915	0	0
W. W. Martin	1,899	0	0
West Bros.	1,897	0	0
Hayward & Paramour	1,878	0	0
Wallis & Sons	1,830	0	0
E. W. Martin	1,800	0	0
Denne	1,794	0	0
Archer & Son	1,791	0	0
Elliott & Co. (*accepted*)	1,755	10	0

MARKET DRAYTON.

For the erection of an additional classroom at the secondary school.

T. Huxley, Malpas (*accepted*)	£735	0	0

SHILDON.

For the erection of a school for the Durham County Council.

Makepeace & Valks (*accepted*)	£13,883	0	0

SILLOTH.

For the erection of a police station.

Recommended tenders.

J. & R. Bell, Carlisle, builders' work	£1,166	0	0
J. Jamieson, Annan, joiners' work	478	0	0
W. Thomson, Annan, plasterers' work	280	0	0
D. Thomson & Sons, Carlisle, plumbers' work	192	0	0
J. Hewitson, Carlisle, slaters' work	116	0	0
W. M. Mark, Wigton, painters and glaziers' work	70	0	0

SOUTHALL.

For additions and alterations to the North Road Council School at Southall, for the County Council of Middlesex. Mr. H. G. Crothall, F.R.I.B.A., architect to the Education Committee.

Willmott & Sons, Ltd.	£10,050	0	0
Knight & Son	9,807	0	0
Dickens	9,739	0	0
Neal	9,472	0	0
Porter	9,401	0	0
Lawrence & Son	9,392	0	0
Fassnidge & Son	9,349	0	0
Mattock Bros.	9,356	0	0
Lacey	9,334	0	0
A. & B. Hanson	9,242	0	0
Albert Monk (*recommended*)	9,215	0	0

WALES.

For the erection of a special subjects' room at the Mold Junction Council School, for the Flintshire Education Committee. Mr. S. Evans, county architect, Mold.

Lunt & Son	£275	0	0
Parker Bros.	266	0	0
Mayers and Sons & Co.	263	0	0
Wright & Sons, Hawarden (*accepted*)	232	0	0

For the erection of a Council School at Sealand to accommodate 342 scholars, for the Flintshire Education Committee. Mr. S. Evans, county architect, Mold.

Parker Bros.	£6,024	0	0
R. Williams	5,700	0	0
Roberts & Sloss	5,556	0	0
Jones & Hough	5,430	0	0
Mayers & Son	5,380	0	0
Cash & Sons	5,117	0	0
Price Williams	4,930	0	0
Ll. Davies	4,902	0	0
Miles Bros., Wrexham (*accepted*)	4,832	0	0

For carrying out extensions to the Soughton Council School, for the Flintshire Education Committee. Mr. S. Evans, county architect, Mold.

R. Williams	£1,268	0	0
Price Williams	1,155	0	0
Price	1,101	0	0
A. B. Lloyd, Flint (*accepted*)	1,064	0	0

WALES—*continued.*

For erection of a special subjects' room at Coed Talon Council School, for the Flintshire Education Committee. Mr. S. Evans, county architect, Mold.

Samuel	£1,418	0	0
R. Williams	1,322	0	0
R. Roberts	1,286	0	0
D. H. Roberts	1,276	0	0
J. Roberts	1,249	0	0
Price Williams	1,159	0	0
Miles Bros.	1,152	0	0
Ll. Davies	1,135	0	0
R. E. Price, Mold (*accepted*)	975	0	0

WALLINGTON.

For the rebuilding of the Hack Bridge, Wallington, for the Croydon and Carshalton Rural District Councils.

Kavanagh	£1,356	0	0
Jackerman & Co.	1,341	0	0
Garrett & Sons	1,310	0	0
Holloway Bros.	1,282	0	0

WATH.

For the construction of two reservoirs in connection with the waterworks extension.

Yorkshire Hennebique Contracting Co., Leeds (*accepted*)	£5,270	19	3
Surveyor's estimate	5,313	4	0

WORKSOP.

For the erection of a school in Stanley Street to accommodate 320 junior mixed and infant children.

T. H. Harper, Carlton (*accepted*)	£4,057	0	0

CORRESPONDENCE.

Important Test Cases on Undeveloped Land Duty.

Sir,—The appeal of the Commissioners of Inland Revenue against Allen was heard to-day before the Court of Appeal, consisting of the Master of the Rolls, the President of the Admiralty, Probate, and Divorce Division, and Mr. Justice Joyce.

In this case Mr. Allen had sold a plot of building land under a contract whereby the purchaser was let into possession on payment of a deposit, and the balance of the purchase money was payable in instalments with interest. The instalments and all interest due to date had been paid, but no conveyance had been executed. The Commissioners assessed Mr. Allen for Undeveloped Land Duty, and he resisted the claim on the ground that he was not the person liable to pay the duty within the provisions of the Finance Act. The Referee decided against Mr. Allen, but this decision was reversed with costs by Mr. Justice Scrutton, and his judgment was to-day confirmed by the Court of Appeal, who dismissed the appeal of the Commissioners with costs, the Court holding that in the circumstances the purchaser and not the vendor was the person "entitled to the rents and profits" of the property, and, therefore, the "owner" within the meaning of the Act, and that accordingly the vendor was not liable to pay the duty.

The Land Union desires to draw attention to the importance of this decision. The definition clause in the Act upon which the decision turned is not confined to Undeveloped Land Duty, but applies to the land taxes imposed by the Act generally. As one result from the decision it would seem that where a property is vested in trustees it does not necessarily follow that the trustees are the "owners" and, therefore, liable to duty within the Act. Further, having regard to the provision in Section 19 of the Finance Act to the effect that the "owner" for the time being shall pay and bear the duty notwithstanding any contract to the contrary, all trustees, mortgagees, and other persons in whom the legal estate of land is vested, the beneficial interest being vested in other parties, should carefully consider whether they are not protected by the above referred to decision.—I am, yours faithfully,

C. H. Kenderdine,
Secretary.

St. Stephen's House, Westminster, London, S.W.:
February 4, 1914.

Mr. Sydney Priday, timber merchant, of Millwall Docks and Eastcheap, has removed from his city address to more commodious offices at King William House, 2a Eastcheap, E.C. His telephone number will remain as 667 Avenue.

SETTLEMENT OF BUILDING TRADES DISPUTE AT DUBLIN.

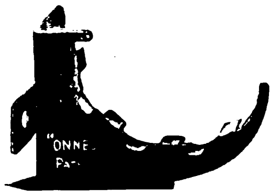
A settlement has been arrived at between the Dublin Builders' Labourers' Union and the Dublin Building Trades Employers' Association, as a result of which the men will resume work at once. About 2,000 men are affected by the settlement. Following a conference, the representatives of the men signed the following undertaking, submitted by the masters as a condition of resuming:—

"We undertake, on behalf of the United Builders' Labourers and General Workers of the Dublin Trade Union, that none of our members will remain or become in the future members of the Irish Transport and General Workers' Union. Further, that our members will not take part in or support any form of sympathetic strike. They will handle all materials, no matter from where or how delivered, and carry out all instructions given to them in the course of their employment. They will also work amicably with all other employees, whether they be members of a Union or not, and none of our members will in any way interfere with or make any objection to work with those who have already signed any agreement. Any of our members who may make any breach of any of these undertakings will be immediately dismissed from our Union—the employers undertaking to re-employ such of our members as they may require on the terms in force previous to September 13 last."

Further batches of men resumed work in Dublin on Saturday, the strikers in each instance signing the employers' undertaking.

THE "ONNEJ" PATENT GUTTER BRACKET.

The "Onnej" gutter bracket, manufactured by the Dascan Manufacturing Co., Queen Square, Bristol, is one of those simple and useful appliances which builders always appreciate. The principal advantage of the "Onnej" is that it is made from one piece of metal, which, being arranged on edge, makes it extremely strong. The spike at the back of the bracket is intended to be driven home with a hammer; the bracket is then firmly held, leaving the workman the use of both hands for screwing up. The fitting gives air space and room for painting between gutter and facia board. Other advantages claimed are that this bracket gives the gutter a perfect bearing, there being no rivet heads in the seat to make it shifty, and that when fixed the bracket is neat and of good appearance. For exposed positions the bracket is provided with a clip which bends over the front edge of the gutter, holding the latter absolutely rigid.



117 NEWGATE STREET.

Much further back than within the recollection of any living Londoner has existed the firm of Messrs. John Tann, whose new address is the above. Messrs. John Tann were established as safe makers as early as the year 1795. The gradual rebuilding of City property has recently caused their removal from the south to the north side of Newgate Street. Here, in a more modern and commodious building, they have opened their showrooms. There is on view on the ground floor and in the basement a fully representative display of their manufactures, ranging from a deed box for ordinary purposes to the diamond merchant's safe, fireproof and thiefproof, and also a selection of doors for a banker's strong-room or a butler's pantry. An interesting exhibit at the present moment is the jeweller's safe which withstood burglars in Hatton Garden. After a fruitless attempt to drill holes, the safe was wrapped in workmen's overalls to deaden the sound, and an effort made to blow it open with gelignite. The effect of the explosion is of particular value: the lock was completely shattered, some portions of it being blown inside the safe, with the result that it was made still further burglarproof. The force of the explosion was such that part of the nameplate, Tann's "Reliance" Safe, was blown through a partition, and was found in the fireplace of the adjoining room. We understand that this is the second occasion on which the Hatton Garden merchants have had a Tann safe tampered with. Each time, however, the burglars' efforts were unavailing. The firm of John Tann has been registered as a private limited company, the management still being under the personal control and supervision of the Messrs. Tann.

VARIETIES.

Messrs. Hatchard Smith & Son, architects and surveyors, have removed their offices from 76 Watling Street, E.C., to 6 Duke Street, Adelphi, London, W.C.

Mr. L. W. Barnard, F.R.I.B.A., of Messrs. Prothero, Phillott & Barnard, architects, Cheltenham, has opened a branch office at Old Bank Chambers, Chester.

Count Plunkett has been re-elected president of the Royal Society of Antiquaries of Ireland, which has over a thousand members, who work for the study of her history and the preservation of her ancient remains. The Society is engaged in a systematic archæological survey, and desires a Commission empowered to protect the monuments of Ireland.

There will be held at the Imperial Institute, London, from May 18 to 21, a Victoria League Imperial Health Conference. The object is to effect an interchange of knowledge between the different countries of the Empire on the questions of housing and town-planning and the care of child life. The conference will be opened by Earl Grey, the chairmen of the different sections being Lord Robert Cecil, M.P., Sir Edward Cook, Professor Michael Sadler, and Mr. Henry Vivian.

An appeal for help is made to preserve the fabric of St. Mary's Church, Tunstead, Norfolk, an excellent specimen of late decorated Gothic architecture. The most noteworthy features of the interior are the nave arcades and the rood-screen, recorded to have been "new made" in 1470, and containing on its lower panels paintings of the twelve Apostles and the four doctors of the Church. The blank east wall—now a sheet of cracked plaster—is believed to hide an east window. A sum of £1,195 is required for the repairs.

The Chester Town Council have adopted a scheme prepared by Mr. Patrick Abercrombie, M.A., for laying out a portion of their Buddicom estate, at Hough Green. The scheme includes the erection of 55 five-roomed houses, 65 four-roomed houses, and ten houses containing two two-room tenements for old people. It is proposed to proceed immediately with about 70 houses, for which designs will be invited by advertisement.

At a Consistory Court at Chester Cathedral a faculty was granted for the restoration of the chapter-house of the Priory of Birkenhead. The chapter-house is a comparatively small, two-storeyed building, and its principal feature is a beautiful Norman vaulting which formed the roof of the lower chamber. There seems to be no actual record of its consecration, but it stood within the churchyard of St. Mary's Church, and there is evidence that its lower storey was used as a church. While the rest of the Priory was vested in the Town Council, the chapter-house had not been so transferred. That, again, was probably owing to the fact that it was a consecrated building. It is proposed to furnish the lower chamber as a chapel.

TRADE NOTES.

Under the direction of Mr. S. Wilson Reside, architect, Newry, the "Boyle" system of ventilation (natural), embracing Boyle's latest patent "Air-Pump" ventilators and air inlets, has been applied to the Masonic Hall, Newry.

Messrs. George MacLellan & Co., the Glasgow Rubber Works, Maryhill, Glasgow, inform us that architects are more and more realising the advantages of india rubber floor tiling—a discovery which was made long ago by shipbuilders. They are confident that during the next few years, with low prices of rubber, its undoubted merits will be still further appreciated. Last year the firm secured a large number of contracts in buildings, including the following:—Bathrooms in (Ingleneuk) Pollokshields, for Mr. T. L. McLintock; lounge and passages in Strathearn Hydropathic, Crieff; bathroom, cloakroom, lavatory, in Mr. John M. Nairn's house, Dundee; kitchen in Mr. A. B. Gilroy's house, Castleroy, Broughty Ferry; the new offices of Messrs. Alf. Holt & Co., Liverpool, and the new offices of Messrs. Thos. Hinshelwood & Co.

THE
Architect and Contract Reporter.

FRIDAY, FEBRUARY 13, 1914.

EDITORIAL NOTICES.

The Editor will always be pleased to examine drawings or articles with a view to publication, but cannot be responsible for the safety of those sent, though every reasonable care will be taken. Contributors desiring payment should clearly state their wishes. No payment will be made until after publication, and a commission to prepare articles or drawings does not necessarily imply acceptance or approval.

No communication can be inserted unless authenticated by the name and address of the writer—not in every case for publication, but as a guarantee of good faith.

We have upon our staff a very eminent Barrister, who will be glad to answer in the columns of this paper any legal question that may be of interest to our readers. All letters must be addressed "Legal Adviser," Office of "The Architect," Imperial Buildings, Ludgate Circus, London, E.C.

The Editor will be glad to receive from Architects in London and the Provinces results of Competitions and Tenders and other particulars of Works in progress in which they may be interested.

TENDERS, ETC.

⁂ *As great disappointment is frequently expressed at the nonappearance of Contracts Open, Tenders, &c., it is particularly requested that information of this description be forwarded to the Office, Imperial Buildings, Ludgate Circus, London, E.C., not later than 2 P.M. on Thursdays.*

COMPETITIONS OPEN.

CANADA (OTTAWA).—April 2.—Architects are invited to submit by April 2 sketch designs in a preliminary competition for the erection of Departmental and Courts Buildings at Ottawa, Ontario. From the designs submitted six will be chosen by the assessors to take part in a final competition, for which the five unsuccessful competitors will each receive an honorarium of 3,000 dollars. The competition is limited to British subjects practising in the British Empire. The Government has appointed Mr. T. E. Collcutt, Mr. J. H. G. Russell, and Mr. J. O. Marchand as assessors. Conditions may be obtained from the High Commissioner for Canada, 17 Victoria Street, London, S.W., and Mr. R. C. Desrochers, secretary, Department of Public Works, Ottawa.

HENDON.—March 2.—The Urban District Council invite competitive designs for public baths at the Burroughs, Hendon. Premiums of £100, £75, and £50 are offered for the designs placed first, second, and third by Mr. H. W. Wills, F.R.I.B.A., who will act as assessor. Particulars, &c., may be obtained on payment of £1 1*s*. deposit (returnable) to Mr. Henry Humphries, clerk, Council offices, Hendon, N.W.

IRELAND.—March 20.—The Belfast Corporation invite competitive designs for an Art Gallery and Museum, to be erected in the Botanic Gardens. The complete scheme will involve an outlay of £75,000, but it is only intended to spend at first £30,000. Mr. John J. Burnet, A.R.S.A., LL.D., will act as assessor. The conditions and plan of site may be had on the payment of £1 1*s*. deposit (returnable on receipt of a bonâ-fide design) to Mr. R. Meyer, Town Clerk, Belfast.

LONDON.—March 11.—The London Society offer a prize (the Gold Medal of the Society and £15) for the best design for the improvement of the north and south entrances to the Broad Walk of Kensington Gardens, London. The Secretary, R.I.B.A., 9 Conduit Street, Hanover Square, London, W.

LONDON.—May 4.—The Bridge House Estates Committee of the Corporation of the City of London invite designs from British architects for the architectural treatment of the new St. Paul's Bridge. The conditions of the competition and instructions may be obtained upon payment of a deposit of £3 3*s*., which will be returned on receipt of a design in accordance with the conditions. A premium of £300 is offered for the design which may be placed first, and further premiums of £200 and £100 respectively. The committee will be advised by Sir William Emerson, P.P.R.I.B.A., as assessor, whose decision will govern the award of the premiums and be final and binding in all stages of the competition. The Town Clerk, Guildhall, London, E.C.

CONTRACTS OPEN.

BINBROOK.—For the whole of the works required in alterations (including new roof and new pewing) to the United Methodist chapel and school, Binbrook, Lincoln. Forward names to Mr. F. W. Dixon, architect, Trevelyan Buildings, Manchester.

BIRKENHEAD.—March 3.—For erection of a wood-sawing shed at the Birkenhead Union workhouse, for the Guardians. Messrs. E. Kirby & Sons, architects, 5 Cook Street, Liverpool.

BIRMINGHAM.—For the erection of the Villa Cross Picture House, Handsworth, Ltd. (Mr. H. Robinson, A.R.I.B.A., Cadogan Chambers, Birmingham.) Send applications to Mr. A. Hodgetts, secretary, 10A Temple Row, Birmingham.

BIRMINGHAM.—Feb. 25.—For the reconstruction of about 115 yards of the southern wall of the Hockley Brook in Aston Brook Street, for the Public Works Committee. Deposit £2. Mr. H. E. Stilgoe, M.I.C.E., city engineer and surveyor, the Council House, Birmingham.

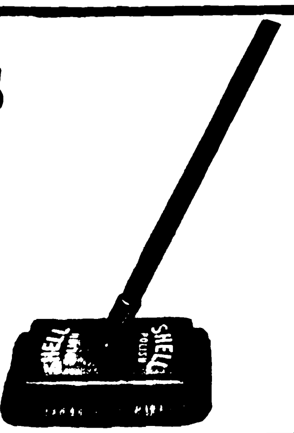
BISHOP'S STORTFORD.—Feb. 24.—For erecting an engine house and making alterations to the existing buildings at the waterworks. Mr. R. S. Scott, A.M.I.C.E., Council Offices, Bishop's Stortford.

BODMIN.—Feb. 20.—For erection of a residence in Harleigh Road, for Mr. W. W. R. Nicholls, of St. Austell. Mr. W. J. P. Jenkins, architect, Bodmin.

BRADFORD.—Feb. 19.—For (*a*) building a battery room at Valley Road electricity works, contract "R. 34"; and (*b*) supplying and erecting the constructional iron and steel work for the foregoing building, contract "R. 35," for the Corporation. Deposit £1 1*s*. each contract. Mr. T. Roles, city electrical engineer and manager, Electricity Offices, Town Hall, Bradford.

CARLISLE.—Feb. 18.—For the various trades required in connection with the alteration of four shops into gentlemen's outfitting department, boot and shoe department, and confectionery shop and tea rooms, including new fronts and fixtures, in Botchergate, for the Carlisle South End Co-

(*Continued on page* 15.)



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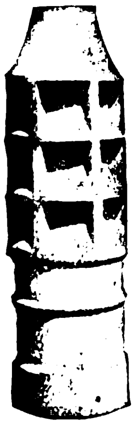

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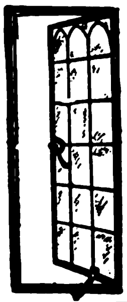

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operative Society, Ltd. Mr. T. W. B. Jack, architect and surveyor, 19 Lowther Street, Carlisle.

BOLDON COLLIERY.—Feb. 20.—For erection of a picture hall and two cottages. (Mr. J. N. Bingle, architect, 3 Ocean Road, South Shields.) Send application and £1 1*s.* deposit by Feb. 20 to the Boldon Electric Palace, Ltd., 93 Roman Road, South Shields.

CHESTER.—Feb. 16.—For (*a*) alterations to the old female wards; (*b*) alterations and additions to chapel at the Upton Asylum, Chester. Deposit £2. Mr. H. Beswick, F.R.I.B.A., county architect, Newgate Street, Chester.

CARLISLE.—For the whole or any of the various trades required in erection of business premises, Blackfriars Street, for Mr. D. Johnston. Mr. H. Higginson, Licentiate R.I.B.A., Lonsdale Street, Carlisle.

CASTLEFORD.—For all trades in the following works: (contract No. 1) five houses and shops, Beancroft Road; (2) three cottages, Ridgefield Street. Mr. F. Scatchard, architect, Midland Bank Chambers, Castleford.

CRUMPSALL.—Feb. 18.—For extension of goods yard, for the Lancashire and Yorkshire Railway Co. The Engineer, Hunt's Bank, Manchester.

DORCHESTER.—Feb. 23.—For alterations and additions to 12 Cornhill, for the Town Council. The Borough Surveyor, 21 North Square, Dorchester.

EDGWARE.—Feb. 19.—For erection of wards for infectious cases, including nurses' room, bathroom, &c., at their workhouse near Edgware, for the Guardians of Hendon Union. Deposit £2 2*s.* Mr. F. J. Seabrook, clerk, Union Offices, Edgware.

FEATHERSTONE.—Feb. 28.—For all trades in connection with the erection of 149 working-class dwellings on the Church Fields site, near Station Lane, for the Urban District Council. Deposit £5. Mr. S. Chesney, A.R.I.B.A., architect, Council Offices, Featherstone.

FLEUR-DE-LIS.—Feb. 23.—For building a public urinal at Fleur-de-Lis, for the Bedwellty Urban District Council. Mr. D. H. Price, surveyor to the Council, Aberbargoed.

GOOLE.—Feb. 25.—For erection of additional slipper baths at the public baths, Pasture Road, for the Urban District Council. The Town Surveyor, Goole.

HIGH CARLEY.—Feb. 21.—For erection of tuberculosis sanatorium (about 90 beds) at High Carley, near Ulverston, for the Lancashire County Council (whole or separate trades). Deposit £1 1*s.* Mr. D. J. Brundritt, architect, County Square, Ulverston.

HULL.—Feb. 19.—For the necessary work to be performed in erection of a girls' secondary school, Cottingham Road, for the Education Committee. Deposit £2 2*s.* Mr. J. H. Hirst, city architect, Guildhall, Hull.

HULL.—Feb. 24.—For erection of offices, &c., for yard master, Hedon Road, for the North-Eastern Railway Co. Mr. W. Bell, the company's architect, York, and Stationmaster's Office, Paragon Station, Hull.

IRELAND.—Feb. 23.—For erection and furnishing of National School Buildings at Gleneaskey, co. Sligo. The Dromore West R.I.C. Barracks, Easkey, co. Sligo.

IRELAND.—Feb. 25.—For erection of a retort house and coal store in concrete, or alternatively in stone, at their Corporation gasworks in Clonmel. Deposit £1 1*s.* Mr. H. O'Connor, A.M.I.C.E., engineer, 1 Drummond Place, Edinburgh.

IRELAND.—Feb. 28.—For erection and completion of the proposed buildings of the college at Earlsfort Terrace, Dublin, for the Governing Body of University College, Dublin. Mr. J. W. Bacon, M.A., secretary and bursar, University College, 86 St. Stephen's Green, Dublin.

IRELAND.—March 26.—For building a goods store at Knockeroghery Station, for the Midland Great Western Railway of Ireland Co. Charge 10*s.* 6*d.* Mr. W. P. O'Neill, chief engineer, Broadstone Terminus, Dublin.

ISLE OF WIGHT.—Feb. 23.—For erection of a Sunday school, for the Vicar, Churchwardens, and Building Committee of Holy Trinity Church, Cowes. Mr. J. W. Bessant, architect, 95 Pelham Road, Cowes, I.W.

LEICESTER.—Feb. 28.—For erection of an octagonal brick chimney shaft 212 feet high on the site of the Corporation generating station, "The Lero." Deposit £2. Mr. E. G. Mawbey, M.Inst.C.E., borough engineer and surveyor, Town Hall, Leicester.

LEYTONSTONE.—Feb. 24.—For stripping existing slates and reslating the roofs of the public baths, Cathall Road, for the Leyton Urban District Council. Deposit £2. Mr. E. H. Essex, A.M.I.C.E., at the offices of the Council, Town Hall, Leyton.

LINTHWAITE.—Feb. 19.—For erection of two dwelling-houses at Royds Avenue. Mr. A. E. Rodgers, architect, Cowlersley, Milnsbridge.

LONDON.—Feb. 24.—For raising a water tank of 20,000 gallons capacity 15 feet above the present height at the baths and washhouses, Laurie Grove, New Cross, for the Deptford Borough Council. The Borough Surveyor, Town Hall, New Cross Road, S.E.

LONDON.—Feb. 25.—For taking down and re-erecting an existing building, to form a receiving room for measles, at the North-Eastern Fever Hospital, St. Ann's Road, Tottenham, N., for the Metropolitan Asylums Board. Deposit £1. Mr. W. T. Hatch, M.I.C.E., M.I.M.E., engineer-in-chief, the Office of the Board, Embankment, E.C.

LYDD DUNGENESS (KENT).—Feb. 27.—For erection of cloakrooms, &c., at the Lydd Dungeness Council School, for the Kent Education Committee. Mr. W. H. Robinson, M.S.A., architect, Sessions House, Maidstone, and Mr. W. J. Spicer, correspondent, 19 Bank Street, Ashford.

MORPETH.—Feb. 24.—For carrying out additions and improvements, Morpeth Station, for the North-Eastern Railway Co. Mr. William Bell, the company's architect, Westgate Road, Newcastle-on-Tyne, and the Station Master's Office, Morpeth.

NAPSBURY.—Feb. 21.—For three pairs of semi-detached residences for asylum attendants, and six cottages for garden labourers, to be erected in the grounds of the asylum, Napsbury, St. Albans, for the Middlesex County Council. Mr. H. T. Wakelam, county architect, Guildhall, Westminster, S.W.

OUNDLE.—March 2.—For erection of buildings in connection with the isolation hospital, for the Rural and Urban District Councils. Send applications by Feb. 14 to Messrs. Traylen & Son, architects, 16 Broad Street, Stamford.

PAR (CORNWALL).—Feb. 28.—For erection of two china clay driers, together with tanks and other works in connection therewith, at Par, for the Great Treverbyn and Ruddle Common China Clay Companies, Ltd. Deposit £3 3*s.* Messrs. John Andrews & Read, 13 Basinghall Street, London, E.C., or Messrs. Cowell & Drewitt, engineers, Central Chambers, Newquay, Cornwall. (See advertisement.)

PAYTHORNE.—Feb. 23.—For the works required in the partial reconstruction (in masonry) of Paythorne Bridge, which carries a district road over the river Ribble, in the parish of Paythorne, in the rural district of Bowland, for the West Riding Highways Committee. Deposit £1. Mr. F. G. Carpenter, West Riding surveyor, County Hall, Wakefield.

QUARMBY (YORKS.).—Feb. 17.—For the various works required in erection of six dwelling-houses at Quarmby. Messrs. Lunn & Kaye, architects and surveyors, Milnsbridge and Huddersfield.

RADCLIFFE (LANCS.).—For erection of (*a*) a shop and eight houses, to be erected in Ringley Road, Outwood; (*b*) a shop and eight houses, semi-detached, in Countess Lane, Radcliffe; (*c*) fourteen houses, semi-detached, also to be erected in Countess Lane, Radcliffe, for the Committee of the Radcliffe and Pilkington Co-operative Society, Ltd. Deposit £1 1*s.* Mr. J. T. Proffitt, architect and surveyor, 2 Mount Street, Manchester.

RAINHAM.—Feb. 16.—For supply and erection of a fire hose shed for fronting on Upminster Road, Rainham, for the Rainham (Essex) Parish Council. Mr. T. A. Capron, clerk, 2 Orsett Road, Grays.

RICHMOND (SURREY).—Feb. 19.—For the construction of a movable floor over the first-class swimming bath at the public baths, Parkshot, for the Town Council. Deposit £1 1*s.* The Borough Surveyor, Town Hall, Richmond, Surrey.

ST. AUSTELL.—Feb. 16.—For erection of a workhouse infirmary, St. Austell. Deposit £2 2*s.* Mr. B. C. Andrew, M.S.A., architect, St. Austell.

SADDLEWORTH FRIEZLAND.—March 6.—The West Riding Education Committee invite whole or separate tenders for the following works in connection with Saddleworth Friezland new school—viz.: builder, joiner, slater, plumber, plasterer, painter, ironfounder and smith, and asphalter. The Education Architect, County Hall, Wakefield. Send £1 deposit by separate letter to the West Riding Treasurer, County Hall, Wakefield.

SCOTLAND.—For the various trades in connection with erection of four houses and five steadings on Harrietsfield Farm, St. Boswells, for small holders. The Chief Surveyor to the Board of Agriculture for Scotland, 29 St. Andrew Square, Edinburgh.

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SCOTLAND.—Feb. 16.—For the various works required in alterations and extensions to the head office premises of the Corporation tramways at 46 Bath Street, Glasgow—viz.: (1) mason and brick work; (2) carpenter and joiner work; (3) plaster work; (4) plumber work; (5) steel work; (6) marble and tile work. Deposit £1 1*s*. Mr. F. Burnet, F.S.I., 180 Hope Street, Glasgow.

SCOTLAND.—Feb. 17.—For the mason, carpenter, slater, plaster, plumber, and painter works of reconstruction of U.F. church, Cluny. Messrs. Wilson & Walker, architects, 375 Union Street, Aberdeen.

SCOTLAND.—Feb. 23.—For the works to be executed in the construction of station buildings and relative works at Carstairs, for the Caledonian Railway Co. Deposit £2 2*s*. The Company's Engineer, Buchanan Street, Glasgow.

SHEFFIELD.—Feb. 20.—For alterations to offices at the corn exchange, for the Markets Committee. The City Architect, Town Hall, Sheffield.

SLAITHWAITE.—For the various works required in erection of a picture theatre at Kiln Hill (builders, joiners, plasterers, painters, plumbers and glaziers, heating and ventilating). Mr. B. H. S. Walker, Croft House, Slaithwaite.

SOUTHPORT.—Feb. 18.—For extension of Chapel Street Station, for the Lancashire and Yorkshire Railway Co. The Engineer's Office, Hunt's Bank, Manchester.

TAMWORTH.—Feb. 21.—For additions and alterations to the administrative block at the hospital, Bolehall, for the Tamworth Joint Hospital Board. Mr. C. L. Clarson, architect and surveyor, 21 Church Street, Tamworth.

THORNE.—Feb. 20.—The West Riding Education Committee invite whole or separate tenders for the following works in connection with Thorne new school—viz.: builder, joiner, slater, plumber, plasterer, painter, ironfounder and smith, and asphalter. The Education Architect, County Hall, Wakefield. Send £1 deposit to the West Riding Treasurer, County Hall, Wakefield.

THURNSCOE.—Feb. 18.—For erection of stable, outbuildings, and temporary offices in Lidgett Lane, for the Urban District Council. Deposit 10*s*. 6*d*. Mr. T. Bull, M.I.Mun.E., surveyor, Council Offices, Thurnscoe, Yorks.

WALES.—For erection of a Primitive Methodist church, &c., at Caergwrle, North Wales. Messrs. Hy. Harper & Sons, architects, 54 Long Row, Nottingham.

WALES.—For erection of two houses near Tunnel Road, Llanelly. Messrs. J. & B. E. Evans, C.E., M.S.A., architects, 47 Stepney Street, Llanelly.

WALES.—Feb. 16.—For forming roads and paths, drainage, erection of chapel, lodge, conveniences, boundary walls, &c., at their proposed new cemetery (area eight acres) at Gwaelodybrithdir, for the Gellygaer Urban District. Mr. F. Read, A.M.I.C.E., engineer and surveyor, Council Offices, Hengoed, Glam.

WALES.—Feb. 16.—For erection of the following works, for the Denbighshire Education Authority: Pentrellyncymmer new school, to accommodate seventy-two, together with school house (three miles from Cerrig and twelve miles from Denbigh); Nantyr new school, to accommodate sixty-four (three miles from Glyn Ceiriog); new school house in connection with Glyn Ceiriog Council School; new school house in connection with Ruabon new Council School. Send applications and £1 1*s*. deposit by Feb. 13 to Mr. W. D. Wyles, county architect, 42A High Street, Wrexham.

WALES.—Feb. 16.—For erection and completion of a temporary school to accommodate 495 scholars situate upon the Corporation estate, Baptist Well, Swansea, for the Education Committee. Deposit £1 1*s*. Mr. E. E. Morgan, A.R.I.B.A., borough architect, 3 Prospect Place, Swansea.

WALES.—Feb. 17.—For the construction of a masonry retaining wall, about 350 yards in length, and contingent works, alongside the river Llynfi, and adjoining the sewage disposal works at Garth, Maesteg, for the Masteg Urban District Council. Deposit £1 1*s*. Mr. S. J. Harpur, M.I.C. and M.E., engineer, 32 Commercial Street, Maesteg.

WALES.—Feb. 21.—For the conversion of Royal Arms, Penydarren, into lock-up shops and billiard saloon. Mr. T. E. Rees, M.S.A., architect, Bank Chambers, Merthyr Tydfil.

WALES.—Feb. 26.—For erection of eighteen semi-detached villas at Cwmaman, for the Penybryn Building Club. Mr. J. L. Smith, Licentiate R.I.B.A., 7 Victoria Square, Aberdare.

WALES.—Feb. 26.—For erection of a house at Cwmaman, for Mrs. Wilson. Mr. J. L. Smith, Licentiate R.I.B.A., Aberdare.

WALSDEN.—Feb. 18.—For erection of a filter house and construction of approach road thereto at North Ramsden, Walsden, for the Waterworks Committee. Mr. F. H. Brunt, A.M.I.C.E., engineer and manager, Waterworks Office, Lord Street, Rochdale.

WALTHAMSTOW.—Feb. 25.—For the construction of concrete foundations and concrete tank for a cooling tower, for the Urban District Council. Alternative tenders may be sent in for the construction of the same wholly in ferro-concrete. Any system may be submitted. Deposit £2 2*s*. Mr. G. W. Holmes, A.M.I.C.E., engineer to the Council, Town Hall Annexe, Walthamstow.

WARMINSTER.—Feb. 20.—For erection of an isolation hospital and work in connection therewith in the Bradley Road, for the Warminster Joint Isolation Hospital Committee. Deposit £2 2*s*. Mr. C. H. Lawton, architect, 32 High Street, Warminster.

WEYMOUTH.—Feb. 16.—For the following, for the Corporation: (1) provision of further w.c. accommodation at the market house lavatory; (2) erection of new underground lavatory on the Esplanade. Mr. K. J. S. Harris, borough surveyor, Weymouth.

WEMBLEY.—Feb. 24.—For erection of a caretaker's lodge, tool house, and conveniences at their recreation ground, Park Lane, for the Urban District Council. Mr. C. R. W. Chapman, engineer and surveyor, Public Offices, Wembley, Middlesex.

WEST STANLEY.—For erection of pair of lock-up shops, Scott Street, West Stanley, Durham, for Mr. M. M. Hobson. Mr. H. Adamson Curry, architect, 3 Bigg Market, Newcastle-on-Tyne.

TENDERS.

BARNET.

For the erection of Council offices, underground conveniences, and work in connection therewith in Wood Street, for the Urban District Council.

Lawrence & Sons, Ltd.	£6,471	0	0
Slough	6,460	0	0
Redhouse & Son	6,439	0	0
Pickrell	6,365	0	0
Brightman & Son	6,155	0	0
F. & H. F. Higgs	6,055	0	0
Ekins & Co.	5,996	0	0
Markham & Markham	5,993	0	0
Fairhead & Son	5,986	0	0
Clark & Sons	5,800	0	0
C. B. King, Ltd.	5,798	0	0

BECCLES.

For the erection of a cinema theatre, for the Eastern Counties Cinematograph Co., at Beccles, Norfolk. Messrs. MORGAN & BUCKINGHAM, F.S.I., A.R.I.B.A., architects and surveyors, Norwich.

Todd & Son	£1,450	0	0
Hannant	1,249	0	0
Hindes	1,178	0	0
Hindes & Co.	1,174	0	0
T. H. YELF, Norwich (*accepted*)	1,160	0	0

DARTFORD.

For the re-erection of two ward blocks in fire-resisting materials at Long Reach Smallpox Hospital, for the Metropolitan Asylums Board. Mr. W. T. HATCH, M.I.C.E., M.I.M.E., engineer-in-chief, the Office of the Board, Embankment, E.C.

Garrett & Son	£4,743	0	0
W. F. Blay, Ltd.	3,875	0	0
Hussey	3,571	16	0
L. KAZAK, Railway Place, Belvedere (*accepted*)	3,377	0	0
Tonge	2,985	0	0
Engineer-in-chief's revised estimate	3,300	0	0

DAWLISH.

For various alterations and other works, for the Knowle Estate Committee of the Urban Council.

Amended estimate.

SPILLER & Co., Taunton (*accepted*)	£945	7	11

EPSOM.

For the provision and erection of well and surface pumps, for the Urban District Council.

J. SIMPSON & CO., LTD. (*accepted*)	£2,303	0	0

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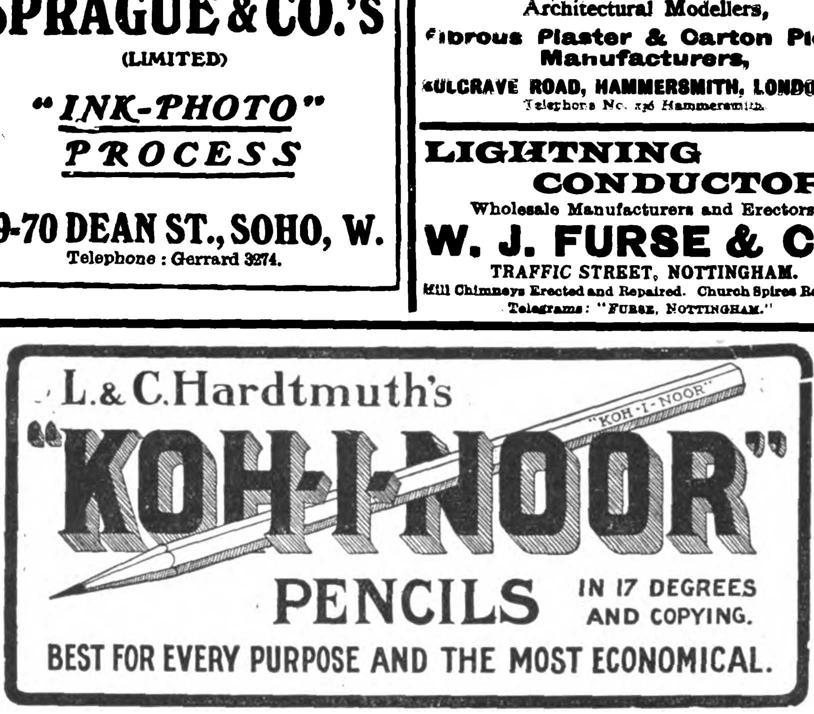

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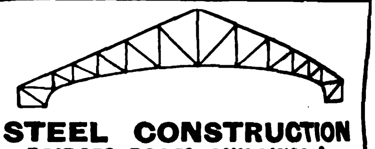

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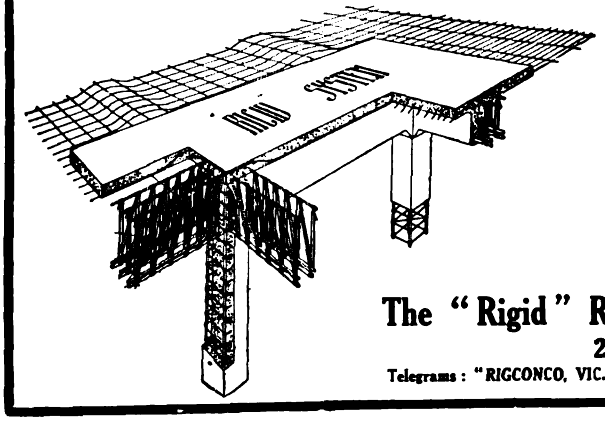

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IRCHESTER.

For the erection of the Irchester Co-operative Society's stores, alterations to bakery, stabling, and drainage to cottages. Messrs. H. A. COOPER & SON, architects, Kettering.

Thompson	£3,375	0	0
Hacksley Bros.	3,373	0	0
Berrill	3,360	0	0
Brown & Son	3,330	0	0
Adams	3,330	0	0
Henson & Son	3,315	0	0
Swindall	3,290	0	0
Drever & Son	3,194	0	0
Smith & Son	3,177	0	0
Phillips & Slow	3,155	0	0
Smith, Edmunds & Co.	3,149	0	0
Andrews	3,099	0	0
R. MARRIOTT, Rushden (*accepted*)	3,042	0	0

LONDON.

For heating work at Chester Road school, St. Pancras, for the London County Council.

Deane & Beale	£1,086	0	0
Brightside Foundry and Engineering Co.	979	0	0
Palowkar & Sons	948	0	0
J. & F. MAY, 33 Whetstone Park, Lincoln's Inn Fields (*accepted*)	879	0	0
Architect's estimate	920	0	0

For provision of centres and special rooms in connection with the Bloomfield Road central school, Woolwich, for the London County Council.

Vigor & Co.	£2,443	0	0
Mills & Sons	2,255	14	10
Gorham	2,117	6	4
Thomas & Edge	2,031	0	0
Mills	2,031	0	0
Griggs & Son	2,017	0	0
Friday & Ling	1,975	8	0
Holloway	1,929	0	0
H. GROVES, Stockwell Street, Greenwich (*recommended*)	1,898	0	0
Architect's estimate	1,995	0	0

MIDDLESBROUGH.

For the erection and completion of a laundry at the sanatorium, West Lane, for the Corporation. Mr. S. E. BURGESS, M.I.C.E., borough engineer, Middlesbrough. Quantities by the Borough Engineer.

Wilkinson & Bowman	£3,100	0	0
Hudson Bros.	3,050	10	0
Duchar & Bowers	3,050	0	0
Doughty & Sons	3,050	0	0
Vinter & Davison	2,997	0	0
McNaughton	2,983	11	6
King & Sons	2,937	0	0
Porteous	2,930	0	0
S. COATES, LTD., Middlesbrough (*accepted*)	2,892	18	9

NEWCASTLE-ON-TYNE.

For the erection of a single storey shed at No. 12 berth, Old London Wharf, for the City Council.

DARLINGTON CONSTRUCTION Co. (*accepted*)	£2,495	0	0

For the provision of a temporary school building on the Walker New Road site, for the Education Committee.

F. H. HEATH, LTD., Manchester (*accepted*)	£1,647	0	0

For works connected with the conversion of the old toll house at the swing bridge into a mortuary, for the City Council.

FENWICK & Co. (*accepted*)	£923	8	0

PORTSMOUTH.

For the erection of a hostel for girls at Milton, and the pulling down of some old buildings, for the Town Council. Mr. C. W. BEVIS, F.R.I.B.A., architect, Southsea.

Sprigings Bros.	£23,710	0	0
Gluyas	22,900	0	0
Davis	21,000	0	0
Tanner	20,646	0	0
Crockerell	20,060	0	0
Lawrence & Son	19,972	0	0
Evans	19,771	0	0
Salter	19,539	0	0
Privett	18,865	0	0
Flowers	18,630	0	0
Wakeham Bros.	18,460	1	6
H. JONES, Southsea (*accepted*)	17,797	0	0

NEWTON ABBOT.

For painting and renovating the market buildings, for the Urban District Council.

Parker	£269	15	0
L. BEARNE (*accepted*)	263	14	6

SUNNINGHILL.

For construction of the Sunninghill and Sunningdale main sewerage, contract B, for the Windsor Rural District Council.

Muirhead & Co.	£110,727	0	0
Brebner & Co.	72,073	0	0
Osman & Co.	68,575	0	0
Riley	67,950	13	5
Wort & Way	66,750	0	0
Mowlem & Co.	65,469	0	0
Moss & Sons	64,000	0	0
Southorn & Co.	62,562	0	0
Vine	62,004	0	0
Playfair & Toole	60,980	0	0
Thompson	60,975	0	7
E. Iles, senr.	59,688	0	0
Wright	59,676	0	0
Bentley	58,680	0	0
Langley & Johnson	55,436	0	0
Boswell	55,221	0	0
Streeter & Co.	54,435	17	4
Hardy & Co.	52,600	0	0
Graham & Sons	52,500	0	0
J. DICKSON, St. Albans (*accepted*)	52,262	7	1

INSTITUTE OF SANITARY ENGINEERS.

THE annual dinner of the Institute of Sanitary Engineers was held at the Holborn Restaurant on Wednesday, February 4. Mr. John D. Watson, M.Inst.C.E., F.R.San.I., the President, occupied the chair.

After the loyal toasts had been honoured,

Mr. Percy Boulnois, past-president, proposed "Our Public Authorities." Having been associated with public health authorities all his life, he could authoritatively say they were not so black as they were sometimes painted. In England and Wales there were nearly 1,900 authorities looking after the health of the country. The human race might well be divided into the inspectors and the inspected. But in spite of all this looking after, people still had very vague ideas of what health really meant. A step in the right direction was the National Health Week, which this year ought to be a great success and of much educational value.

Dr. H. R. Kenwood (medical officer of health for the County of Bedford and for the Metropolitan Borough of Stoke Newington), in replying, said the local sanitary authorities had done a great work in the past, were doing a great work now, and were destined to do an even greater work in the future. All things considered, they did their work well. Local authorities, however, were not exactly models from the point of view of the officials. Too often the committees were composed of men who, at first, knew nothing about the work. The officials had to teach them, and then, at the end of the year, when they had been trained in their duties there was a reshuffle, and they were placed upon other committees. Another fault was the introduction of party politics into public health affairs. It was a thousand pities that sanitary authorities should introduce such matters. He believed that of the twenty-eight sanitary authorities in London, only one might be said to exclude party politics, and that was the borough of Stoke Newington.

Mr. H. T. Wakelam, M.Inst.C.E., also responded.

Sir William Ramsay, K.C.B., proposing "The Institute of Sanitary Engineers," said it appeared to him the members had a difficult task, for they had to know a little of everything, and also to keep on good terms with a number of public bodies. He sometimes wondered whether too much was not done to prolong the lives of the unfit, and whether there was not too much coddling of the public.

Mr. Watson, in reply, said that although a young institution they had between 500 and 600 members, all active exponents of that branch of applied science which related to public health. Their work was frequently not appreciated. It was their duty to be in the van of progress, and considerable responsibility rested upon them. Their influence was less than it ought to be, and their aim should be to increase that influence as much as possible with a view to forwarding the objects for which they stood.

Mr. E. H. Blake proposed "Kindred Institutions," to which Mr. E. T. Hall and Mr. H. C. H. Shenton responded.

Professor H. Adams proposed "The Visitors," to which Mrs. H. Percy Boulnois and Sir William Ramsay responded.

During the evening a musical programme was gone through.

FIRE PROTECTION AT SEA.

The risk of fire is an ever-present one on ships at sea, and the possible consequences of a conflagration are so serious that it is remarkable no adequate precautions have been taken against it.

Of course, all ships are equipped with fire-fighting appliances of one sort or another, but they are comparatively useless, because such fires are usually not discovered until they have assumed dangerous dimensions.

The total for the last seven and a half years of steamships totally and partially destroyed by fire has been given as 155 and 2,447 respectively.

The moral of these statistics is that the ordinary fire precautions are not sufficient. Absolute safety in this respect demands the use of extinguishing apparatus which is automatic and immediate in action.

Such apparatus, in the form of the "Grinnell" automatic sprinkler and fire alarm, has been in successful and extensive use on land for a number of years, and there seems to be no good reason why it should not be similarly employed at sea. The "Grinnell" system is simple and sure, and its general adoption on ships would undoubtedly do much to increase the safety of sea travel.

The principle of a "Grinnell" installation is generally well known; in fact, the leading firms of shipbuilders have already adopted these automatic firemen. The Hamburg-Amerika liners, the *Imperator* and the *Vaterland*, the two largest steamships in the world, are, for instance, now being equipped with "Grinnell" installations. The system consists of an arrangement of water piping attached to the roofs or ceilings, and at a distance of 6 to 10 feet apart are attached the sprinklers. A sprinkler really is a tap or valve closed by a support or strut consisting of three pieces of metal fastened together with a solder that will fuse at a low temperature. The pipes are kept charged with water under pressure (on board ship one of the fire pumps would be used for this duty), and in the event of a fire occurring the heat quickly fuses the solder and releases the water; this is directed on to a serrated disc or deflector fixed at the bottom of the sprinkler, and is at once broken up into a heavy shower, under which no fire can exist. At the same time a continuous alarm is sounded.

Any fire can be extinguished by a bucket of water provided someone is at hand to apply it The "Grinnell" is that bucket of water multiplied indefinitely, and is always at hand.

To-day it is admitted that automatic sprinklers constitute the most efficient form of protection against fire for practically every risk on land. The fire insurance companies of the world grant rebates varying from 30 to 70 per cent. for buildings where they are installed, even in buildings of modern construction, where there is nothing to hinder the use of ordinary fire appliances to the utmost of their capacity.

VARIETIES. .

Mr. John Thomas, of Cressington, Liverpool, builder and contractor, who died on November 7, left £32,485.

The Birmingham Corporation have authorised their Baths Committee to obtain tenders and proceed with the erection of baths in George Arthur Road, Saltley, at an estimated cost of £19,261.

The salary of Mr. H. E. Stilgoe, M.I.C.E., city engineer and surveyor for Birmingham, was increased on Tuesday last from £1,250 to £1,400 per annum. It was originally proposed to make the increase £250 a year.

The Liverpool City Council, at their meeting last week, approved a scheme of extended sanatoria accommodation costing £65,250, towards which a Government grant of £22,750 will be received under the Finance Act of 1911.

The Local Government Board have sanctioned a provisional order in connection with the important scheme of main drainage for the city of Kilkenny. The works are expected to cost about £22,000, and have been designed by Mr. James F. Reade, A.M.I.C.E., of Waterford.

The Sally Port at Portsmouth is to be repaired by the Town Council. This is the most historic landing-place in the old naval port. There Catherine of Braganza landed on her arrival in England to marry King Charles II.

Messrs. Crouch, Hogg & Easton, civil engineers, Glasgow, have reported to the Dunfermline Town Council on the question of an additional water supply. It has been decided to proceed at once with the major part of their scheme, which will involve an outlay of over £70,000.

Mr. Robert Keith, architect, Dundee, died last week in his sixty-sixth year after a short illness. Mr. Keith was in business in Dundee for over sixty years, and was responsible for the erection of many buildings. He was regarded as an expert in matters pertaining to the feuing of ground.

The Governors of the John Rylands Library, Manchester, have adopted a scheme for extensions which will eventually cost between £50,000 and £60,000. Mr. Basil Champneys has prepared sketch plans to harmonise with his original designs.

Messrs. Wilcox & Raikes, civil engineers, Birmingham, have prepared a sewerage scheme for the Sutton (Notts) Urban District Council, which is estimated to involve an outlay of £20,000. At a meeting of the Council on Tuesday last it was resolved that the plans and estimates be approved, and application be made to the Local Government Board for sanction to a loan for the amount stated.

Mr. George O'Connor, F.R.I.A.I., architect, Dawson Street, Dublin, has prepared plans on behalf of the Irish National Picture Palaces, Ltd., for a large cinema, capable of accommodating 1,250, to be erected on the site of the Phœnix Brewery, Dublin. The syndicate propose to build ten picture palaces in Southern Ireland.

As a result of the recent exhibition of British Arts and Crafts at Ghent an invitation has been received by the British Government through the French Ambassador to exhibit a collection formed on similar lines in the Pavilion de Marsan at the Louvre. The invitation has been accepted, and the exhibition will be open from May to October this year. As before, Sir Cecil Smith, director of the Victoria and Albert Museum, will act as chairman, and Mr. Walter Crane, president of the Arts and Crafts Exhibition Society, as vice-chairman of the committee.

Mr. A. H. Campbell, burgh engineer, Edinburgh, reports that no plans for tenements were presented during 1913, and only for 10 superior houses and 15 isolated villas. In spite of this the approximate value of the buildings for the year is £510,146, against £356,902 for 1912. The increase of £153,244 is accounted for chiefly by the number of picture houses and bridges erected during the year. Over £100,000 has been spent in the erection of picture houses, the cost of the buildings ranging from £3,000 to £45,000.

The Glasgow Corporation have considered an application by his Majesty's Board of Works for permission to sink a trial pit at the south-east corner of the cathedral, between the two buttresses there, adjacent to the old well, in order to determine whether defective foundations are the cause of the fractures that have taken place in the building at that corner. It is considered the request is a reasonable one, as it is the only way in which the condition of the foundations referred to could be ascertained. His Majesty's Board agree to free the Corporation of any responsibility in respect of the carrying out of the investigations.

The eighth Manchester Building Trades Exhibition is now nearing its opening date, which will be Tuesday, March 3, at 3 p.m., by the Rt. Hon. the Lord Mayor of Manchester (Alderman D. McCabe, J.P.). The chair will be taken by Alderman J. R. Wilson, Chairman of the Improvements Committee. The management inform us that in addition to the majority of the old exhibitors being represented, a large number of new firms have taken space, and are supporting the largest Building Trades Exhibition which is held in the provinces. The model buildings which will be on view should prove of interest to architects and other professional gentlemen, for whom special days have been set apart, viz., March 5 and March 11, between the hours of 11 a.m. and 4 p.m. The Exhibition Director is Mr. Charles H. Luke, joint managing director of Messrs. Walter Cawood, Ltd., who has had experience in all classes of exhibitions, particularly those connected with the engineering and shipbuilding industries. The company Walter Cawood, Ltd., was formed after the death of the late Mr. Walter Cawood to carry on the business, and since they have taken it over it has been extended and increased in all directions.

THE
Architect and Contract Reporter.
FRIDAY, FEBRUARY 20, 1914.

EDITORIAL NOTICES.

The Editor will always be pleased to examine drawings or articles with a view to publication, but cannot be responsible for the safety of those sent, though every reasonable care will be taken. Contributors desiring payment should clearly state their wishes. No payment will be made until after publication, and a commission to prepare articles or drawings does not necessarily imply acceptance or approval.

No communication can be inserted unless authenticated by the name and address of the writer—not in every case for publication, but as a guarantee of good faith.

We have upon our staff a very eminent Barrister, who will be glad to answer in the columns of this paper any legal question that may be of interest to our readers. All letters must be addressed "Legal Adviser," Office of "The Architect," Imperial Buildings, Ludgate Circus, London, E.C.

The Editor will be glad to receive from Architects in London and the Provinces results of Competitions and Tenders and other particulars of Works in progress in which they may be interested.

TENDERS, ETC.

⁂ *As great disappointment is frequently expressed at the nonappearance of Contracts Open, Tenders, &c., it is particularly requested that information of this description be forwarded to the Office, Imperial Buildings, Ludgate Circus, London, E.C., not later than 2 P.M. on Thursdays.*

COMPETITIONS OPEN.

CANADA (OTTAWA).—April 2.—Architects are invited to submit by April 2 sketch designs in a preliminary competition for the erection of Departmental and Courts Buildings at Ottawa, Ontario. From the designs submitted six will be chosen by the assessors to take part in a final competition, for which the five unsuccessful competitors will each receive an honorarium of 3,000 dollars. The competition is limited to British subjects practising in the British Empire. The Government has appointed Mr. T. E. Collcutt, Mr. J. H. G. Russell, and Mr. J. O. Marchand as assessors. Conditions may be obtained from the High Commissioner for Canada, 17 Victoria Street, London, S.W., and Mr. R. C. Desrochers, secretary, Department of Public Works, Ottawa.

HAWARDEN.—March 16.—The Rural District Council invite the submission by architects of plans and estimates for laying out a piece of land in the parish of Hawarden, and containing about 2¾ acres, and for the erection of workmen's cottages. Mr. F. Barrett, sanitary inspector's office, Hawarden.

HENDON.—March 2.—The Urban District Council invite competitive designs for public baths at the Burroughs, Hendon. Premiums of £100, £75, and £50 are offered for the designs placed first, second, and third by Mr. H. W. Wills, F.R.I.B.A., who will act as assessor. Particulars, &c., may be obtained on payment of £1 1*s.* deposit (returnable) to Mr. Henry Humphries, clerk, Council offices, Hendon, N.W.

IRELAND.—March 20.—The Belfast Corporation invite competitive designs for an Art Gallery and Museum, to be erected in the Botanic Gardens. The complete scheme will involve an outlay of £75,000, but it is only intended to spend at first £30,000. Mr. John J. Burnet, A.R.S.A., LL.D., will act as assessor. The conditions and plan of site may be had on the payment of £1 1*s.* deposit (returnable on receipt of a bonâ-fide design) to Mr. R. Meyer, Town Clerk, Belfast.

LONDON.—March 11.—The London Society offer a prize (the Gold Medal of the Society and £15) for the best design for the improvement of the north and south entrances to the Broad Walk of Kensington Gardens, London. The Secretary, R.I.B.A., 9 Conduit Street, Hanover Square, London, W.

LONDON.—May 4.—The Bridge House Estates Committee of the Corporation of the City of London invite designs from British architects for the architectural treatment of the new St. Paul's Bridge. The conditions of the competition and instructions may be obtained upon payment of a deposit of £3 3*s.*, which will be returned on receipt of a design in accordance with the conditions. A premium of £300 is offered for the design which may be placed first, and further premiums of £200 and £100 respectively. The committee will be advised by Sir William Emerson, P.P.R.I.B.A., as assessor, whose decision will govern the award of the premiums and be final and binding in all stages of the competition. The Town Clerk, Guildhall, London, E.C.

MOLD.—The Urban District Council invite architects to submit plans, &c., for a fire station and caretaker's house, to be erected at Earl Road. Further particulars may be obtained from Mr. D. Thomas, surveyor, Town Hall, Mold.

CONTRACTS OPEN.

ACLE.—Feb. 28.—For erection of four cottages in the parish of Acle, Norfolk, for the Blofield Rural District Council. Mr. H. H. Cole, clerk, 12 Bank Street, Norwich.

ALLERTON BYWATER.—For all trades in erection and completion of new Wesleyan chapel, Allerton Bywater, near Castleford. Messrs. Garside & Pennington, architects, Pontefract and Castleford.

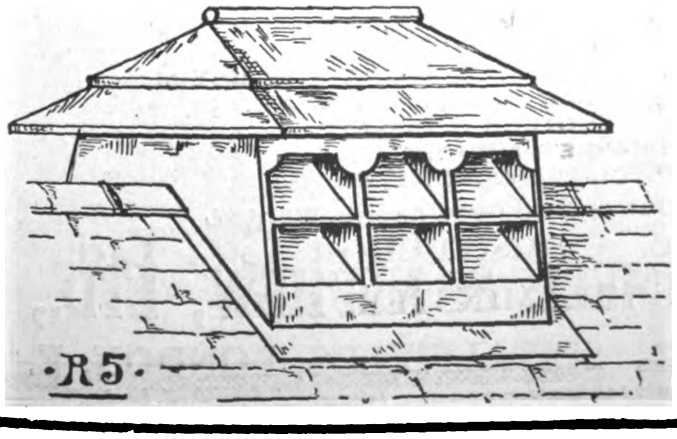
ASHBOURNE.—March 4.—For the taking down of old buildings at the back of the Board Room in Compton Street, and the erection of offices and stores, for the Guardians. Mr. John Twemlow, surveyor, Green Road, Ashbourne, or Mr. L. Adams, surveyor, Stanton, Ashbourne.

BAGULEY.—Feb. 25.—For erection of males' and females' pavilions at Baguley Sanatorium, for the Sanitary Committee. Deposit £2 2*s.* The City Architect, Town Hall, Manchester.

BANBURY.—March 9.—For the following works: (*a*) For new buildings and for alterations to existing buildings; (*b*) for new boilers, piping, and other engineering works, for the Banbury Guardians. Send applications and £1 deposit by Feb. 25 to Mr. W. Roland Howell, F.R.I.B.A., 17 Blagrave Street, Reading.

BEDFORD.—March 7.—For erection of certain buildings in connection with two pumping stations, screening chamber, &c., together with the construction of approach roads and areas, formation of site, and other works, for the Corporation. Deposit £5. Major Tulloch & Haworth, engineers, 28 Victoria Street, Westminster, London, S.W.

(*Continued on page 15.*)



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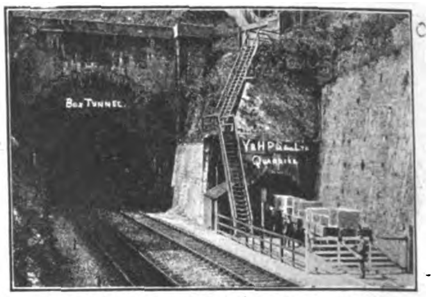

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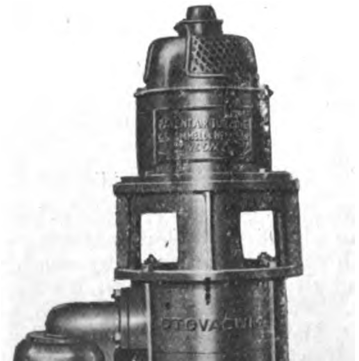

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BISHOP'S CASTLE.—March 10.—For additions and alterations to Smithfield, including provision and erection of cattle and sheep pens, buildings, paving, and concreting, and other works connected therewith, for the Corporation. The Borough Surveyor's Office, 30 High Street, Bishop's Castle.

BRAUNTON (BARNSTAPLE).—Feb. 28.—For erection of new premises at Cross Tree, Braunton, for Messrs. Frank Rowe & Co. Mr. G. A. E. Schwabe, architect, Braunton.

BROCKENHURST.—Feb. 28.—For contract No. 2, comprising concrete foundation, fencing, work to playgrounds, and other small works, in connection with proposed pupil teachers' centre, Brockenhurst, for the Hampshire County Council. Deposit £2 2*s*. Mr. A. L. Roberts, architect to the Education Committee, The Castle, Winchester.

CARLISLE.—Feb. 28.—For erection of an office and convenience at the Sands cattle market, for the Corporation. Deposit 10*s*. 6*d*. Mr. H. C. Marks, M.I.C.E., city engineer and surveyor, 36 Fisher Street, Carlisle.

CARSHALTON.—March 4.—For the following works for the Urban District Council: (1) For the erection of a block of stables, together with the necessary internal fittings, and drainage works at the depôt at Nightingale Road; (2) for the necessary repairs to the stonework of the parapet of the bridge over the river Wandle at Talbot Road. Mr. W. W. Gale, A.M.I.C.E., surveyor, The Square, Carshalton.

CLACTON-ON-SEA.—Feb. 28.—For alterations and additions to the police station, for the Standing Joint Committee of the Court of Quarter Sessions and County Council. Mr. F. Whitmore, county architect, Duke Street, Chelmsford, and at the Police Station, Clacton-on-Sea.

COWLING.—Feb. 23.—For the several works required in the erection of a new cloakroom, drainage, and conversion of closets at the Cowling Council School, for the West Riding Education Department. Mr. B. Thornton, divisional clerk, Education Offices, Skipton.

CUDWORTH.—Feb. 25.—For various works in connection with erection of houses under the Housing Scheme of the Urban District Council. Deposit £1 1*s*. Mr. W. T. Lynam, surveyor, Council Offices, Cudworth.

DAVYHULME.—Feb. 27.—For erection of cart shed, office, mortuary, and storeroom at their depôt at Croft's Bank, Davyhulme, for the Barton-upon-Irwell Rural District Council. Mr. Mountain, A.M.I.C.E., surveyor, Union Offices, Green Lane, Patricroft.

EDDISBURY.—Feb. 23.—For building six dwelling-houses at Eddisbury, near to Delamere Station, for the Northwich Rural District Council. Mr. E. T. Ward, Brockhurst Street, Northwich.

FALMOUTH.—Feb. 25.—For additions to the Princess Pavilion and Gyllyngdune tea house, for the Town Council. Mr. J. S. Walton, borough engineer and surveyor, Municipal Buildings, Falmouth.

FEATHERSTONE.—Feb. 28.—For all trades in connection with the erection of 149 working-class dwellings on the Church Fields site, near Station Lane, for the Urban District Council. Deposit £5. Mr. S. Chesney, A.R.I.B.A., architect, Council Offices, Featherstone.

HARROGATE.—For the various works in connection with extensive additions and alterations at the convent of the H.C.J., Harrogate. Also for a church in the Huddersfield district. Mr. W. H. H. Marten, Licentiate R.I.B.A., architect, 3 Cookridge Street, Leeds.

HUDDERSFIELD.—Feb. 23.—For any of the various works required in erection of additions to stables, Halifax Old Road, for the Hillhouse P.F. and Industrial Society, Ltd. Send name and address by Feb. 23 to Messrs. J. H. Hall & Son, architects, Exchange, Huddersfield.

IRELAND.—Feb. 28.—For erection and completion of the proposed buildings of the college at Earlsfort Terrace, Dublin, for the Governing Body of University College, Dublin. Mr. J. W. Bacon, M.A., secretary and bursar, University College, 86 St. Stephen's Green, Dublin.

IRELAND.—March 2.—For the erection of six artisans' dwellings in Naas, adjoining the G.S. and W. Railway Station, on the Dublin Road; laying out the site, the construction of sewer manholes and other works for the Naas Urban District Council. Mr. R. H. Hall, A.M.I.C.E.I., surveyor, Town Hall, Naas.

IRELAND.—March 3.—For erection, furnishing, and enclosing of National School buildings at Toomore, county Mayo. Foxford R.I.C. Barracks, county Mayo.

IRELAND.—March 6.—For the provision of new propagating pits at the Royal Botanic Gardens, Glasnevin. The work may be carried out in two sections, the first of which will be the erection of propagating pit walls, boiler house, &c. H. Williams, secretary, Office of Public Works, Dublin.

KNOWLE.—For erection of a cottage at Knowle, Devon, for Mr. White. Mr. G. A. E. Schwabe, architect, Braunton.

KNOTTY ASH.—For constructing dining-rooms, stores, &c., at the Highfield Infirmary. Mr. G. W. Coster, clerk to the Select Vestry, Parish Offices, Brownlow Hill, Liverpool.

LEICESTER.—Feb. 28.—For erection of an octagonal brick chimney shaft 212 feet high on the site of the Corporation generating station, "The Lero." Deposit £2. Mr. E. G. Mawbey, M.Inst.C.E., borough engineer and surveyor, Town Hall, Leicester.

LICHFIELD.—March 11.—The Secretary of State for War invites tenders for the following work: Erection of officers' mess at the Whittington Heath Barracks, in the Northern Command. Send applications and 10*s*. deposit by Feb. 27 to the Director of Barrack Construction, 80 Pall Mall, S.W. Plans may be seen at the above office of the Director of Barrack Construction, or at the Barrack Construction Office, Whittington Heath Barracks, Lichfield.

LONDON.—Feb. 24.—For certain plastering work in the T, U, and V wards of the sick asylum, Devon's Road, Bow, London, E., for the Managers of the Poplar and Stepney Sick Asylum District. Mr. S. G. Wright, clerk, Board's Offices, Devon's Road, Bow, E.

LONDON.—Feb. 24.—For the excavations at Mount Pleasant sub-station, for the Commissioners of H.M. Works and Public Buildings. Deposit £1 1*s*. Mr. E. Cropper, H.M. Office of Works, Carlisle Place, Westminster, S.W., and H.M. Office of Works, Storey's Gate, London, S.W.

LONDON.—Feb. 25.—For taking down and re-erecting an existing building, to form a receiving room for measles, at the North-Eastern Fever Hospital, St. Ann's Road, Tottenham, N., for the Metropolitan Asylums Board. Deposit £1. Mr. W. T. Hatch, M.I.C.E., M.I.M.E., engineer-in-chief, the Office of the Board, Embankment, E.C.

LONDON.—March 9.—For the construction of one reinforced concrete and brick boat shed, one brick boat shed, stores, &c., and for alterations to existing premises at the storeyard, Poplar, E., for the Royal National Lifeboat Institution. Deposit £1. Mr. A. W. Lewis, M.I.C.E., acting engineer and architect, 15 Victoria Street, Westminster, S.W.

LUTTERWORTH.—Feb. 26.—For erection, &c., of twenty-three houses, for the Rural District Council. Mr. A. J. Ross, surveyor, Lutterworth.

LYDD DUNGENESS (KENT).—Feb. 27.—For erection of cloakrooms, &c., at the Lydd Dungeness Council School, for the Kent Education Committee. Mr. W. H. Robinson, M.S.A., architect, Sessions House, Maidstone, and Mr. W. J. Spicer, correspondent, 19 Bank Street, Ashford.

MANSFIELD.—For erection of a picture palace on Skerry Hill. Mr. F. Ball, architect, King Street, Nottingham.

MONK BRETTON.—March 6.—The West Riding Education Committee invite whole or separate tenders for the following works at Monk Bretton Burton Road Council School—viz. providing fittings to laundry and housewifery centre. The Education Architect, County Hall, Wakefield.

MORLEY.—Feb. 25.—For the foundations required in connection with the gasworks plant, including excavating, concreting, brickwork, &c., for the Corporation. The Gas Office, Town Hall, Morley.

MORLEY.—Feb. 28.—For the rebuilding and extending the Alexandra Mill, Baker Street, for Mr. W. B. Stockwell. Messrs. W. Hanstock & Son, architects, Branch Road, Batley.

NANTYBWCH.—Feb. 28.—For erection of about twenty-four houses, for the Brynteg Building Club, at Nantybwch, Tredegar. The Crown Inn, Nantybwch, and Mr. Ivor Davies, architect, Brynawel, Nantybwch.

PAIGNTON (DEVON).—March 2.—For erection of a public convenience on the Paignton Green, opposite the pavilion pier, for the Urban District Council. The Surveyor's Office, Town Hall, Paignton.

PAR (CORNWALL).—Feb. 28.—For erection of two china clay driers, together with tanks and other works in connection therewith, at Par, for the Great Treverbyn and Ruddle Common China Clay Companies, Ltd. Deposit £3 3*s*. Messrs. John Andrews & Read, 13 Basinghall Street, London, E.C., or Messrs. Cowell & Drewitt, engineers, Central Chambers, Newquay, Cornwall. (See advertisement.)

PENRITH.—For the whole or any part of the work required in making considerable additions and alterations to the county farm school, Newton Rigg, Penrith, for the Cumberland and Westmorland Joint Agricultural Committee. Mr. G. Dale Oliver, F.R.I.B.A., county architect, Carlisle.

PICKERING.—For erection of premises, for the Pickering Co-operative Society, Ltd. Mr. L. G. Ekins, architect, C.W.S., Ltd., West Blandford Street, Newcastle-on-Tyne.

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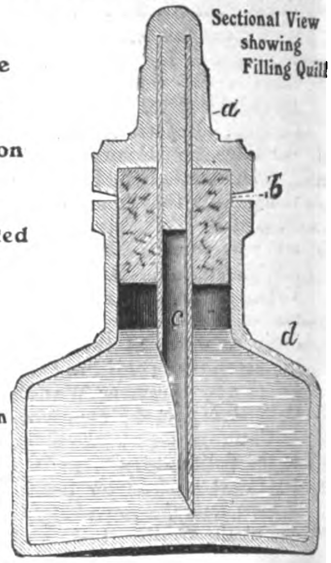

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Romford.—Feb. 28.—For erection of an addition to building in Heath Drive, together with other appurtenant works, for the conversion of the premises into a fire station, for the Urban District Council. Mr. H. T. Ridge, acting surveyor, Council Offices, Market Place, Romford.

St. Buryan (Cornwall).—Feb. 25.—For erection of a manse at St. Buryan. Plans and specifications may be seen on application to the Rev. W. C. Caddy, St. Buryan, or to Mr. R. H. Roberts, Cape Cornwall, St. Just.

St. Ives.—Feb. 28.—For alterations for nurses' apartment, for the Guardians. Mr. G. D. Day, Union Offices, St. Ives, Hunts.

Saddleworth Friezland.—March 6.—The West Riding Education Committee invite whole or separate tenders for the following works in connection with Saddleworth Friezland new school—viz.: builder, joiner, slater, plumber, plasterer, painter, ironfounder and smith, and asphalter. The Education Architect, County Hall, Wakefield. Send £1 deposit by separate letter to the West Riding Treasurer, County Hall, Wakefield.

Scotland.—Feb. 25.—For the mason, carpenter, slater, plaster, painter, and plumber works of new dwelling-house to be erected at Fochabers. Mr. D. J. Cunningham, factor, Fochabers.

Scotland.—March 9.—The Secretary of State for War invites tenders for the following work: Erection of new reception station, including sitework, drainage, fences, &c., at Castle Park Barracks, Dunbar, in the Scottish Command. Send applications and 10*s.* deposit by Feb. 28 to the Director of Barrack Construction, 80 Pall Mall, S.W. Plans may be seen at the office of the Director of Barrack Construction, or at the Barrack Construction Office, Castle Park Barracks, Dunbar. (See advertisement.)

Skipton.—Feb. 28.—For the mason's and bricklayer's, carpenter's and joiner's, plumber's and glazier's, plasterer's, slater's, and ironfounder's work required in erection of a weaving shed warehouse, engine and boiler house. Send names by Feb. 21 to Mr. J. Hartley, architect, Skipton.

Stockport.—Feb. 23.—For extensions to the nurses' home, Stepping Hill Hospital. Send applications and £2 2*s.* deposit not later than Feb. 23 to Messrs. Pierce & Son, architects, 30 St. Petersgate, Stockport.

Taunton.—Feb. 26.—For alterations at the pavilion at the Vivary Park, for the Town Council. Mr. D. Edwards, A.M.I.C.E., borough surveyor, Municipal Buildings, Taunton.

Wales.—For building a tuberculosis hospital at Newtown, Montgomeryshire, for the King Edward VII. Welsh National Memorial Association. Messrs. Deakin & Howard Jones, M.S.A., architects, Plas Ynys, Borth, Cardiganshire.

Wales.—For erection of a picture theatre in Mostyn Street, Llandudno. Deposit £1 1*s.* Mr. A. Hewitt, architect, Town Hall, Llandudno.

Wales.—For erection of a hall and institute at Treorky, for the workmen of Abergorky Collieries. Deposit £2 2*s.* Mr. Jacob Rees, architect, Pentre.

Wales.—Feb. 23.—For the supply and erection of temporary office premises for the accountant's department at Ystrad Road, Ystrad, for the Rhondda Urban District Council. Deposit £1 1*s.* The Council Offices, Pentre.

Wales.—Feb. 25.—For alterations to drapers' premises, Oxford Street, Pontycymmer, for Mr. M. Hughes. Mr. D. Morgan, F.R.I.B.A., Charles Street Chambers, Cardiff.

Wales.—Feb. 26.—For erection of eighteen semi-detached villas at Cwmaman, for the Penybryn Building Club. Mr. J. L. Smith, Licentiate R.I.B.A., 7 Victoria Square, Aberdare.

Wales.—Feb. 26.—For erection of a house at Cwmaman, for Mrs. Wilson. Mr. J. L. Smith, Licentiate R.I.B.A., Aberdare.

Wales.—Feb. 26.—For proposed alterations and additions at Llanychllwydog Council School, for the Pembrokeshire Education Authority. Mr. O. T. Thomas, architect, County Education Offices, Haverfordwest, or the Head Teacher at the school.

Wales.—Feb. 27.—For erection and completion of a residence at Llandaff. Deposit £2 2*s.* Messrs. A. Ll. Thomas & G. S. Morgan, architects and surveyors, 23 Gelliwastad Road, Pontypridd.

Wales.—March 2.—For alterations and additions to Pontardawe and Barry Dock police courts and stations and to Canton police station. Mr. W. E. R. Allen, deputy clerk of the County Council, Glamorgan County Hall, Cardiff.

Walton Head.—Feb. 25.—For the construction of brick engine house and water tower, together with the several works connected therewith, at Walton Head, near Pannal, for the Wetherby Rural District Council. Deposit £1 1*s.* Mr. H. A. Johnson, M.I.C.E., 15 The Exchange, Bradford.

Warrington.—For alterations and additions to shop premises, Bewsey Road, and fittings, for the Warrington Equitable Industrial Co-operative Society, Ltd. Deposit £1 1*s.* Mr. F. E. L. Harris, architect, Co-operative Wholesale Society, Ltd., 1 Balloon Street, Manchester.

Wellington (Salop).—March 11.—For alterations and building work to the isolation wards at the workhouse. Deposit £1 1*s.* Mr. A. Jenkins, architect, Market Street, Wellington.

Whitley.—Feb. 23.—For the following works, viz.: (1) The construction of a ladies' convenience on the east side of the Council offices, Whitley; (2) the enlargement of the existing public conveniences, Watts Road, Whitley. Mr. A. J. Rousell, A.M.Inst.C.E., the Council's surveyor, Council Offices, Whitley Bay.

Wigan.—Feb. 23.—For additions to greenhouse at cemetery, for the Corporation. The Borough Engineer, King Street West, Wigan.

TENDERS.

BASINGSTOKE.

For the erection of a drill hall for the County of Southampton Territorial Force Association. Messrs. Hair & Bucknill, architects, Southampton.

S. Roberts, Ltd.	£2,498	0	0
Day	2,404	0	0
Smallbone & Sons	2,349	0	0
Jenkins & Sons, Ltd.	2,269	0	0
Draper	2,268	0	0
Jukes & Sons	2,264	0	0
Tigwell	2,230	0	0
Pittard & Sons	2,229	0	0
Goodall	2,212	0	0
Blunden & Oliver	2,199	0	0

HONILEY.

For the erection of a house for Mr. C. Wade. Mr. Chas. F. Bateman, F.R.I.B.A., architect, Birmingham.

Eastcourt	£5,979	0	0
Bowens	5,532	0	0
Franklin	5,500	0	0
Foster & Dicksee	5,498	0	0
Benfield & Loxley	5,482	0	0
Bowen	5,444	0	0
Dallow	5,388	0	0
Whitehouse	5,350	0	0
Lowe	5,340	0	0
Kingerlee	5,330	0	0
Parnell	5,314	0	0
Bell	5,270	0	0
G. F. Smith	5,186	0	0
Redhouse	5,179	0	0
Jas. Smith	5,160	0	0
Willcock	5,145	0	0
Cleaver	5,142	0	0
Sapcote	5,049	0	0
F. H. Smith	5,035	0	0
Briley	5,130	0	0
Grove	4,994	0	0
Elvins	4,930	0	0
Moir	4,930	0	0
Collins & Godfrey	4,928	0	0
Crowder	4,830	0	0
Espley	4,800	0	0
Bishop	4,766	0	0
Barnsley	4,750	0	0
Langley	4,695	0	0
Low	4,650	0	0
Gibbs	4,587	0	0
Henson	4,565	0	0
Bragg	4,514	0	0

HOVE.

For additions and alterations to the police station in the Town Hall, and constructing underground lavatories in Norton Road. Mr. H. H. Scott, borough surveyor, Hove.

McKellar & Westerman, Hove (*accepted*)	£2,097	0	0

For enlarging steam-roller shed at Sackville Road depôt. Mr. H. H. Scott, borough surveyor, Hove.

A. Chadwell, Hove (*accepted*)	£215	0	0

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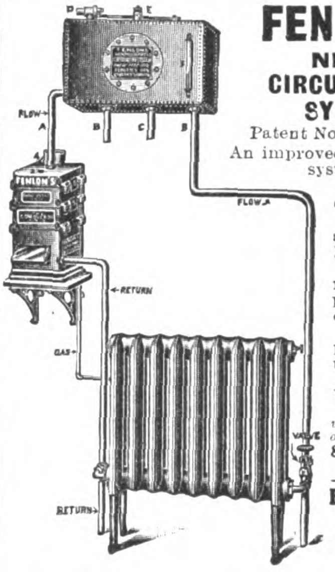

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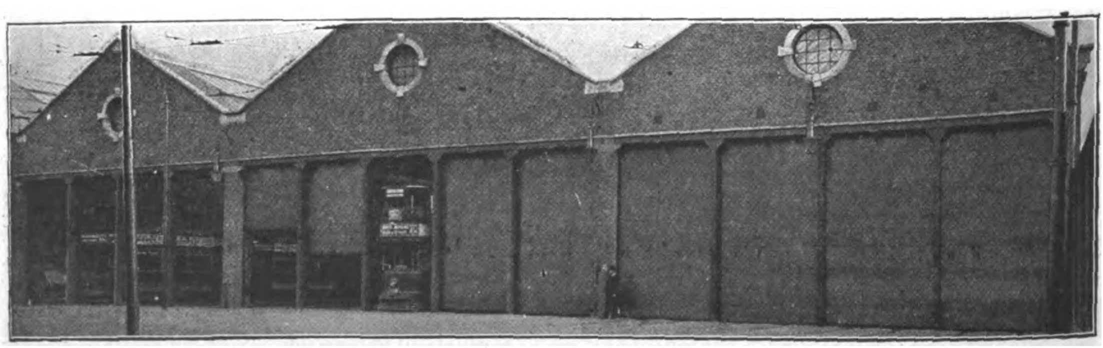

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HONILEY.

For the erection of a house, laying out grounds, &c., at Honiley, Warwickshire, for Mr. Herbert L. Wade. Mr. CHAS. E. BATEMAN, F.R.I.B.A., architect, Birmingham.

	House and Outbuildings, &c.	Extra for Elm.	Garden Walling, &c.	Ground Work to Garden.	Drainage.	Drives.	Cottages and Stables.
Redhouse	£16.034 0 0	£297 0 0	£3 112 0 0	£1,181 0 0	£714 0 0	£2,447 0 0	£3,951 0 0
Benfield & Loxley	15,782 0 0	319 0 0	2,826 0 0	994 0 0	656 0 0	2,781 0 0	3,856 0 0
Foster & Dicksee	15,727 0 0	307 0 0	2,587 0 0	717 0 0	697 0 0	2,477 0 0	4,277 0 0
Jas. Smith	15,600 0 0	240 0 0	2,480 0 0	1,250 0 0	715 0 0	2,740 0 0	3,660 0 0
Kingerlee	15,574 0 0	152 0 0	3,175 0 0	1,407 0 0	793 0 0	1,677 0 0	3,995 0 0
Franklin	15,500 0 0	300 0 0	3,300 0 0	1,300 0 0	840 0 0	2,425 0 0	4,200 0 0
T. W. Bowen	15,462 0 0	297 0 0	2,534 0 0	1,682 0 0	678 0 0	2,458 0 0	4,220 0 0
Willcock	15,400 0 0	250 0 0	2,490 0 0	1,240 0 0	720 0 0	2,770 0 0	3,650 0 0
Briley	15,300 0 0	260 0 0	2,500 0 0	1,250 0 0	754 0 0	2,749 0 0	3,650 0 0
Lowe	15,209 0 0	398 0 0	2,515 0 0	1,338 0 0	730 0 0	2,696 0 0	3,740 0 0
Eastcourt	15,094 0 0	243 0 0	2,582 0 0	900 0 0	670 0 0	2,128 0 0	3,460 0 0
Parnell	15,078 0 0	303 0 0	2,692 0 0	967 0 0	616 0 0	2,820 0 0	3,754 0 0
Dallow	15,071 0 0	291 0 0	2,510 0 0	1,660 0 0	660 0 0	2,497 0 0	4,186 0 0
Whitehouse	15,060 0 0	275 0 0	2,498 0 0	1,654 0 0	650 0 0	2,389 0 0	3,950 0 0
Collins & Godfrey	14,812 0 0	252 0 0	2,462 0 0	1,051 0 0	635 0 0	2,068 0 0	3,530 0 0
Bell	14,880 0 0	146 0 0	2,490 0 0	1,093 0 0	752 0 0	2,488 0 0	3,758 0 0
Sapcote	14,800 0 0	225 0 0	2,448 0 0	1,224 0 0	690 0 0	2,700 0 0	3,640 0 0
G. F. Smith	14,719 0 0	151 0 0	2,407 0 0	1,057 0 0	731 0 0	2,440 0 0	3,706 0 0
Grove	14,675 0 0	200 0 0	2,625 0 0	1,177 0 0	710 0 0	1,676 0 0	3,477 0 0
Bishop	14,577 0 0	237 0 0	2,977 0 0	997 0 0	577 0 0	2,125 0 0	3,797 0 0
Elvins	14,570 0 0	370 0 0	2,430 0 0	1,200 0 0	630 0 0	2,590 0 0	3,570 0 0
Cleaver	14,557 0 0	252 0 0	2,451 0 0	1,203 0 0	737 0 0	3,068 0 0	3,613 0 0
Crowder	14,429 0 0	163 0 0	2,296 0 0	1,153 0 0	682 0 0	2,317 0 0	3,392 0 0
F. H. Smith	14,395 0 0	215 0 0	2,599 0 0	1,565 0 0	645 0 0	1,994 0 0	3,525 0 0
Bowens	14,266 0 0	254 0 0	2,402 0 0	1,511 0 0	577 0 0	2,125 0 0	3,797 0 0
Espley	14,000 0 0	133 0 0	1,950 0 0	840 0 0	580 0 0	2,600 0 0	3,200 0 0
Moss	13,940 0 0	197 0 0	2,340 0 0	770 0 0	580 0 0	1,321 0 0	3,414 0 0
Barnsley	13,760 0 0	220 0 0	2,400 0 0	1,026 0 0	563 0 0	1,904 0 0	3,312 0 0
Lord	13,744 0 0	176 0 0	2,346 0 0	1,214 0 0	567 0 0	2,066 0 0	3,280 0 0
Gibbs	13,617 0 0	125 0 0	2,350 0 0	1,000 0 0	578 0 0	1,688 0 0	3,330 0 0
Langley	13,440 0 0	90 0 0	2,482 0 0	1,084 0 0	615 0 0	1,879 0 0	3,462 0 0
Henson	13,403 0 0	158 0 0	2,265 0 0	897 0 0	573 0 0	2,228 0 0	3,194 0 0
Bragg	13,196 0 0	300 0 0	2,282 0 0	1,062 0 0	566 0 0	2,714 0 0	3,220 0 0
Revised Estimates. Collins & Godfrey	10,949 0 0	—	—	—	635 0 0	—	3,178 0 0
Barnsley	10,266 0 0	—	—	—	563 0 0	—	2,954 0 0
Espley	10,246 0 0	—	—	—	580 0 0	—	2,876 0 0
Langley	9,860 0 0	—	—	—	597 0 0	—	2,969 0 0
Bragg, Solihull, Warwickshire	9,805* 0 0	—	—	—	566* 0 0	—	2,912* 0 0

* Accepted subject to 1½ per cent. discount.

LEWES.

For the erection of an elementary school for 160 children in Western Road, St. Anne's, for the Lewes Education Committee. Mr. E. H. FULLER, architect, Lewes. Quantities by the Architect.

Burfoot	£3,169 0 0
Chitham & Co.	3,075 0 0
Errey & Bishop	3,042 0 0
Wilkinson	3,023 0 0
Godfrey Bros.	2,998 0 0
Saunders Bros.	2,993 0 0
Cook & Sons	2,820 0 0
Cruse	2,800 0 0
McKellar & Westerman	2,795 0 0
Sandell & Sons	2,790 0 0
A. CHILTON, Uckfield (*accepted*)	2,747 0 0
Crane	2,482 0 0

LONDON.

For the erection of a school in Cork Street, Camberwell, for the London County Council.

F. & T. Thorne	£23,617 0 0
Parker & Sons	22,727 0 0
Leslie & Co.	22,722 0 0
Rowley Bros.	22,243 0 0
Downs	21,977 0 0
Brand, Pettit & Co.	21,976 0 0
W. Smith & Son	21,876 0 0
Wallis & Sons	21,642 0 0
Godson & Sons	21,197 0 0
Leng	21,153 0 0
Lawrence & Son	21,072 0 0
J. & C. Bowyer	20,993 0 0
Moss & Sons	20,778 0 0
J. Smith & Sons	20,550 0 0
J. MARSLAND & SONS, York Street, Walworth (*accepted*)	20,549 0 0
Architect's estimate	21,383 0 0

LONDON—*continued.*

For remodelling the L.C.C. school in Star Lane, Fulham.

Leslie & Co.	£18,255 0 0
Wallis & Sons	17,994 0 0
Willmott & Sons	17,346 0 0
Downs	17,286 0 0
Chessum & Sons	17,095 19 6
Marsland & Sons	16,457 0 0
McManus	16,386 0 0
J. & C. Bowyer	16,335 0 0
W. E. BLAKE, Ltd., Stevenage Road, Fulham (*accepted*)	15,431 0 0

For enlargement of the "Hither Green" L.C.C. school, Lewisham.

Carmichael	£16,472 0 0
King & Son	16,349 0 0
Akers & Co.	16,258 0 0
F. & T. Thorne	16,200 0 0
Wallis & Sons	15,984 0 0
Thomas & Edge	15,972 0 0
Garrett & Son	15,444 0 0
J. & C. Bowyer	15,297 0 0
W. Smith & Son	14,820 0 0
JAMES SMITH & SONS, LTD., Junction Works, South Norwood (*accepted*)	15,135 0 0

For the erection of schools and caretaker's cottage in Alexandra Road, Hounslow, for the Heston and Isleworth Urban District Education Committee. Mr. J. G. CAREY, A.M.I.C.E., architect, Hounslow. Quantities by Mr. H. W. DODGE.

W. E. Blake, Ltd.	£16,975 0 0
Dickens	16,197 0 0
S. Roberts, Ltd.	16,087 9 1
Millman	15,995 0 0
Gibson & Sons	15,362 0 0
Dorey & Sons	15,228 0 0
A. & B. Hanson	14,995 0 0
Kite	14,900 0 0
Lacey	14,271 0 0

LONDON—*continued.*

For remodelling (B. and G) the "Victoria" school, Hammersmith, for the L.C.C.

F. & T. Thorne	£15,725	0	0
Wallis & Sons	14,875	0	0
Garrett & Son	14,496	0	0
Carmichael	14,456	0	0
Patman & Fotheringham	14,023	0	0
J. & C. Bowyer	13,997	0	0
Soole & Son	13,632	0	0
W. Smith & Son	13,617	0	0
Brand, Pettit & Co.	13,492	0	0
Wm. Moss & Sons, Ltd., 48 Bedford Row (*accepted*)	13,268	5	10
Architect's estimate	14,350	0	0

For rebuilding the L.C.C. school in Woolmore Street, Poplar.

Chessum & Sons	£17,507	0	0
C. Wall, Ltd.	17,280	0	0
F. & T. Thorne	17,156	0	0
Rowley Bros.	16,460	0	0
Wallis & Sons	16,447	0	0
McCormick & Sons	16,228	0	0
Patman & Fotheringham	15,823	0	0
Shurmur & Sons	15,768	0	0
Lawrence & Son	15,757	0	0
Marsland & Sons	15,421	0	0
J. & C. Bowyer	15,347	0	0
Brand, Pettit & Co., 247 West Green Road, Tottenham (*accepted*)	15,236	0	0
Architect's estimate	15,950	0	0

WALES.

For rebuilding the Royal Oak Inn, Penlock, Abercynon, for Messrs. Giles & Harrap, Merthyr. Mr. C. M. Davies, M.S.A., architect, Merthyr.

Williams & Sons	£1,294	0	0
Sutherland	1,210	0	0
A. W. Julian, Pontypridd (*accepted*)	1,147	0	0

For the erection of an electric power sub-station at Uplands, Swansea, for the Corporation. Mr. E. E. Morgan, A.R.I.B.A., architect, Swansea.

Havard & Jones	£2.225	0	0
Parkinson & Hodgens	2.072	14	0
Rich & Son	1,799	15	7
Spragg	1,775	0	0
Rogers	1,755	0	0
Harding	1,710	0	0
D. Jenkins, Ltd.	1,569	0	0
Bennett Bros.	1,568	10	0
Marles & Son	1,565	0	0
Griff. Davies	1,495	0	0
Thos. Richards, Northampton Yard, Swansea (*accepted*)	1,452	0	0

The Paddington Borough Council, at their meeting on Tuesday, decided to complete the purchase of land near Porchester Road, for £16,000, upon which to erect public baths.

The exhibition at the Imperial Institute of the works submitted in the open examination for the final stage of the competition for the British Prix de Rome has been attended so largely that the authorities have decided to keep it open until the 21st inst.

Mr. J. Ely, F.R.I.B.A., Manchester, has been elected President of the Manchester Academy of Fine Arts in succession to the late Mr. Clarence Whaite. Mr. Ely has been acting as Vice-President for many years.

Professor F. M. Simpson, F.R.I.B.A., has prepared a scheme for altering the London Institution, Finsbury Square, E.C., so as to convert it into a School of Oriental Studies.

The trustees of the proposed new Wesleyan Methodist Church at Carcroft invite architects to submit competitive designs. Applications should be made not later than the 21st inst. to Mr. J. C. Starkie, solicitor, 52 Hallgate, Doncaster.

The competitive designs for the new secondary school at Bath will be exhibited at the Long Acre Technical Institute, Walcot, Bath, on the following dates: Saturday, February 21, 10 A.M. to 1 P.M., 2 P.M. to 5 P.M., and 6 P.M. to 3 P.M.; Monday, February 23, 10 A.M. to 1 P.M. and 2 P.M. to 5 P.M. Admission will be free.

VARIETIES.

It is proposed to erect a new hotel at Gleneagles, N.B. Mr. James Miller, A.R.S.A., 15 Blythswood Square, Glasgow, will be the architect.

The Edinburgh Architectural Association offer two prizes of £40 each for the special study of the development of steel structural work. Conditions may be had on application to the honorary secretary, 117 George Street, Edinburgh.

On Monday last two enquiries were held on behalf of the Local Government Board into applications by the North Dublin and the South Dublin District Councils for loans of £33,000 and £60.750 respectively, to be expended on the erection of labourers' cottages.

The tender of Messrs. Billings & Sons, of Swansea, has been accepted, we understand, for the erection of the Prudential Assurance Company's buildings on the corner site of Castle Street, Swansea. The new buildings will cost £17,000.

Mr. R. W. Cable has been appointed Professor of Architecture and Design at the Sir Jamsetji Jeejeebhoy School of Art, Bombay, in the Indian Educational Service. Mr. Cable, who is an Ecole des Beaux-Arts student, will be much missed by the third-year men of the Architectural Association Day School, of which course he was the master.

The date for sending in architectural drawings, water colours, engravings, &c., intended for the Royal Academy Exhibition, is Friday, March 27. Oil paintings will be received on March 28 and 30, and sculpture on March 31. Not more than three works may be submitted by any one artist.

South Shields Town Improvement and Health Committee recommend the Town Council without delay to adopt the water carriage system in existing properties as well as in all new properties. This question has aroused a bitter controversy for many months among the labour section of the municipality. The cost is estimated at £30,000.

The Mersey Dock Board are considering a recommendation to provide an upper floor at sections 6, 7, and 8 of the shed on the south side of the Huskisson Branch Dock No. 2, with the necessary cranes, &c., at a total cost of £17,250; and to erect a shed at the eastern end of the North Quay of the West Float, with railway sidings and roadways, at a total estimated cost of £31,950.

The Aberdeen Town Council have adopted a scheme for the purchase of the Militia Barracks, King Street, and the conversion of the property into the headquarters of the Tramways Department. The scheme provides for offices, car shed accommodation, and workshops, and the total cost (including £2.000 for the property) is estimated at £25,897. It is intended to proceed with the work by instalments.

A syndicate has acquired a plot of land with an area of nearly 1,000 square yards in St. Peter's Square, Manchester, with frontages to three streets, and proposes to build what is described as "the most sumptuous picture palace in the North of England." The site is at present occupied by office property, and the purchase price is said to be £30.000.

The Aberdeen Town Council having definitely decided that the statue of the late King Edward, which has been executed in granite by Mr. Drury, R.A., should be placed at the south-east corner of Union Terrace, arrangements have now been made for the preparation of the site, which will include the removal of the bronze statue of the late Prince Consort. The offer of Mr. George Hall, builder, Aberdeen, to prepare the site for £3,609 16*s*. has been accepted.

We have received from Messrs. Sprague & Co., Ltd., lithographic printers, Dean Street, Soho, W., a copy of their handy book of tables. This has been especially compiled for the assistance of architects and surveyors. For many years past it has proved a most useful and reliable booklet, and the present issue is on the same lines as its predecessors. The firm are continuing their "Ink-Photo" process for the reproduction of coloured and pencil drawings, photographs, &c.

Mr. James Hine, architect, died on Sunday last at Launceston, aged eighty-four. Mr. Hine, who had retired some years ago, at one time enjoyed a large practice in Plymouth and the West Country generally. While in partnership in 1873 with the late Mr. Alfred Norman, he was awarded in open competition the design for the Plymouth Guildhall—a building which cost about £50,000, without decoration. Other works by him are the Town Hall and Wesleyan Church at Launceston, St. Matthias Church, Plymouth, and the restoration of St. Andrew's, Plymouth.

THE
Architect and Contract Reporter.
FRIDAY, FEBRUARY 27, 1914.

EDITORIAL NOTICES.

The Editor will always be pleased to examine drawings or articles with a view to publication, but cannot be responsible for the safety of those sent, though every reasonable care will be taken. Contributors desiring payment should clearly state their wishes. No payment will be made until after publication, and a commission to prepare articles or drawings does not necessarily imply acceptance or approval.

No communication can be inserted unless authenticated by the name and address of the writer—not in every case for publication, but as a guarantee of good faith.

We have upon our staff a very eminent Barrister, who will be glad to answer in the columns of this paper any legal question that may be of interest to our readers. All letters must be addressed "Legal Adviser," Office of "The Architect," Imperial Buildings, Ludgate Circus, London, E.C.

The Editor will be glad to receive from Architects in London and the Provinces results of Competitions and Tenders and other particulars of Works in progress in which they may be interested.

TENDERS, ETC.

⁂ *As great disappointment is frequently expressed at the nonappearance of Contracts Open, Tenders, &c., it is particularly requested that information of this description be forwarded to the Office, Imperial Buildings, Ludgate Circus, London, E.C., not later than 2* P.M. *on Thursdays.*

COMPETITIONS OPEN.

CANADA (OTTAWA).—April 2.—Architects are invited to submit by April 2 sketch designs in a preliminary competition for the erection of Departmental and Courts Buildings at Ottawa, Ontario. From the designs submitted six will be chosen by the assessors to take part in a final competition, for which the five unsuccessful competitors will each receive an honorarium of 3,000 dollars. The competition is limited to British subjects practising in the British Empire. The Government has appointed Mr. T. E. Collcutt, Mr. J. H. G. Russell, and Mr. J. O. Marchand as assessors. Conditions may be obtained from the High Commissioner for Canada, 17 Victoria Street, London, S.W., and Mr. R. C. Desrochers, secretary, Department of Public Works, Ottawa.

GLASGOW.—May 1.—The Corporation are prepared to receive from sculptors competitive models and relative offers for four groups of symbolical sculpture to be placed on the abutments of the new bridge at Radnor Street, Kelvingrove Park, Glasgow. Copies of the conditions of the competition may be obtained on application to Mr. J. Lindsay, town clerk, City Chambers, Glasgow.

HAWARDEN.—March 16.—The Rural District Council invite the submission by architects of plans and estimates for laying out a piece of land in the parish of Hawarden, and containing about 2¾ acres, and for the erection of workmen's cottages. Mr. F. Barrett, sanitary inspector's office, Hawarden.

IRELAND.—March 20.—The Belfast Corporation invite competitive designs for an Art Gallery and Museum, to be erected in the Botanic Gardens. The complete scheme will involve an outlay of £75,000, but it is only intended to spend at first £30,000. Mr. John J. Burnet, A.R.S.A., LL.D., will act as assessor. The conditions and plan of site may be had on the payment of £1 1*s.* deposit (returnable on receipt of a bonâ-fide design) to Mr. R. Meyer, Town Clerk, Belfast.

LONDON.—March 11.—The London Society offer a prize (the Gold Medal of the Society and £15) for the best design for the improvement of the north and south entrances to the Broad Walk of Kensington Gardens, London. The Secretary, R.I.B.A., 9 Conduit Street, Hanover Square, London, W.

LONDON.—May 4.—The Bridge House Estates Committee of the Corporation of the City of London invite designs from British architects for the architectural treatment of the new St. Paul's Bridge. The conditions of the competition and instructions may be obtained upon payment of a deposit of £3 3*s*., which will be returned on receipt of a design in accordance with the conditions. A premium of £300 is offered for the design which may be placed first, and further premiums of £200 and £100 respectively. The committee will be advised by Sir William Emerson, P.P.R.I.B.A., as assessor, whose decision will govern the award of the premiums and be final and binding in all stages of the competition. The Town Clerk, Guildhall, London, E.C.

MOLD.—The Urban District Council invite architects to submit plans, &c., for a fire station and caretaker's house, to be erected at Earl Road. Further particulars may be obtained from Mr. D. Thomas, surveyor, Town Hall, Mold.

CONTRACTS OPEN.

BASINGSTOKE.—March 9.—For erection of an electric generating station for the borough. Deposit £1 1*s*. Mr. F. R. Phipps, A.M.I.C.E., F.S.I., borough engineer, Town Hall, Basingstoke.

BEDFORD.—March 7.—For erection of certain buildings in connection with two pumping stations, screening chamber, &c., together with the construction of approach roads and areas, formation of site, and other works, for the Corporation. Deposit £5. Major Tulloch & Haworth, engineers, 28 Victoria Street, Westminster, London, S.W.

BEDWAS.—March 3.—For erection of Council offices, house, stores, and buildings at Bedwas, for the Bedwas and Machen Urban District Council. Send names by March 3 to Mr. A. S. V. Taylor, A.M.I.C.E., surveyor, Bedwas, Mon.

BICESTER.—March 13.—For erection of Bicester new post office, for the Commissioners of H.M. Office of Works and Public Buildings. Deposit £1 1*s*. The Postmaster, Bicester Post Office, and H.M. Office of Works, Storey's Gate, London, S.W.

BISHOP'S CASTLE.—March 10.—For additions and alterations to Smithfield, including provision and erection of cattle and sheep pens, buildings, paving, and concreting, and other works connected therewith, for the Corporation. The Borough Surveyor's Office, 30 High Street, Bishop's Castle.

BLYTH.—For alterations at the isolation hospital, for the Blyth Port Sanitary Authority. Messrs. Fenwicke & Watson, architects, Pearl Buildings, Newcastle-on-Tyne.

(*Continued on page 15.*)

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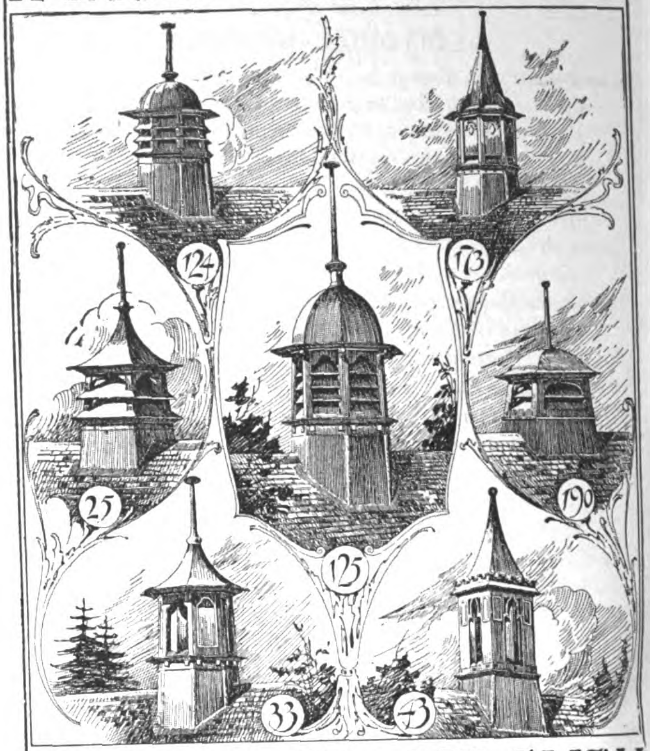

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Bradford.—Feb. 28.—For erection and completion of a mission school chapel in Fagley Road. Send names by Feb. 28 to Messrs. J. Harper Bakes & Son, architects and surveyors, Calverley Chambers, Victoria Square, Leeds.

Canterbury.—March 20.—For erection of hall and schools adjoining the Baptist Church, St. George's Place. Messrs. Jennings & Gray, architects, 4 St. Margaret's Street, Canterbury. (See advertisement.)

Cockermouth.—March 2.—For the work required in alterations, additions, and heating of the Cockermouth post office. The Post Office and Messrs. Sealby Bros., Station Street, Cockermouth.

Consett.—March 9.—For proposed alterations, &c., to post office. Mr. J. J. Eltringham, Licentiate R.I.B.A., architect and surveyor, Derwent Street, Blackhill, Durham.

Dewsbury.—March 5.—For mason, joiner, plumber, plasterer, painter, and electrical engineer trades in new operating theatre at the workhouse infirmary, and cowshed at Squirrel Hall Farm, Staincliffe, Dewsbury, for the Guardians. Messrs. W. Hanstock & Son, architects, Branch Road, Batley.

Erdington.—March 17.—For enlargement of the Council School in Deykin Avenue, for the City of Birmingham Education Committee. Send applications and £2 deposit by March 3 to the Finance Department of the Education Office, Council House, Margaret Street, Birmingham.

Earl Shilton.—March 11.—For additions, alterations, and reconstruction to Earl Shilton Schools, Leicestershire. Messrs. Stockdale Harrison & Sons, architects, St. Martin's East, Leicester.

Eastbourne.—March 2.—For erection of boundary walls and drainage of the tuberculosis hospital building now in course of erection. Mr. W. Chapman Field, borough architect and building surveyor, Town Hall, Eastbourne.

Ely.—March 7.—For erection of sixteen workmen's dwellings, paths, fences, &c., in connection therewith, on New Barnes Road, for the Ely Urban District Council. Deposit £1 1*s*. Mr. S. Wearing, A.R.I.B.A., 15 Upper King Street, Norwich, or the City Surveyor's Office, Silver Street, Ely.

Exwick.—Feb. 28.—For erection of a new house at Exwick, for Mr. W. R. Mallett. Mr. H. Reed, F.R.I.B.A., architect, 12 Castle Street, Exeter.

Goole.—For erection of sub-station buildings at Mariner Street and Beverley Sidings for the Goole electricity supply, for the Yorkshire Electric Power Company. The Yorkshire Electric Power Company, Dewsbury.

Halifax.—March 6.—For the various works required in conversion of shops into banking premises at King Cross. Messrs. Walsh & Nicholas, architects and surveyors, 10 Harrison Road, Halifax.

Holmfirth.—March 5.—For the masons' and bricklayers', carpenters' and joiners', ironfounders', ferro-concretors', structural engineers', patent glaziers', plasterers', slaters', and painters' work required in erection of a new spinning mill, staircase, and lavatories, &c., at Lower Mills. Mr. P. N. Brown, architect and surveyor, Hawthorne Bank, Holmfirth.

Hornby (near Lancaster).—March 2.—For erection of the new institute, Hornby, whole or separate trades. Messrs. Wright & Son, surveyors, 24 Castle Park, Lancaster.

Horning (Norfolk).—March 14.—For erection of six cottages in the parish of Horning, in the rural district, for the Smallburgh Rural District Council. Deposit £1 1*s*. Mr. F. Davies, clerk, North Walsham.

Hove.—March 4.—For constructing underground lavatories in Western Esplanade. Deposit £1 1*s*. Mr. H. H. Scott, borough surveyor, Hove.

Ireland.—March 6.—For the provision of new propagating pits at the Royal Botanic Gardens, Glasnevin. The work may be carried out in two sections, the first of which will be the erection of propagating pit walls, boiler house, &c. H. Williams, secretary, Office of Public Works, Dublin.

Ireland.—March 6.—For erection of a dispensary residence at Burgatia, Rosscarbery, for the Guardians of Clonakilty Union. Mr. J. J. O'Crowley, architect, Clonakilty.

Ireland.—March 9.—For erection of two small buildings and the removal of an old structure at Belfast, for the Great Northern Railway Company (Ireland). Deposit £1 1*s*. The Engineer's Offices at Dublin and Belfast, and Mr. T. Morrison, secretary, Amiens Street Terminus, Dublin.

Ireland.—March 12.—For erection of a central dispensary on the grounds of the Meath Hospital, Dublin, for the County Dublin County Council. Deposit £2 2*s*. Mr. T. F. McNamara, architect, 192 Great Brunswick Street, Dublin.

Kirkburton.—March 3.—For the various trades required in erection of six houses at Paddock, for the Kirkburton Urban District Council. Messrs. J. B. Abbey & Son, architects, District Bank Chambers, Market Street, Huddersfield.

London.—March 11.—For the repair of fourteen cottages, Nos. 1 to 14 Miniver Street, Blackfriars Road, for the Trustees of St. Martin-in-the-Fields Almshouse and Pension Charity. Deposit £2 2*s*. Mr. A. A. Kekwick, M.S.A., architect, 12 Norfolk Street, Strand, W.C.

London.—March 9.—For painting, repairs, &c., at their workhouse and offices, Northumberland Street, Marylebone, W., for the St. Marylebone Guardians. (Mr. A. Saxon Snell, F.R.I.B.A., architect, 9 Bentinck Street, Manchester Square, W.) Apply by March 2 to Mr. H. T. Dudman, clerk, Guardians Offices, Northumberland Street, Marylebone Road, London, W.

Maiden Law.—March 5.—For erection and completion of smallpox hospital, for the Lanchester Joint Hospital Board. Mr. W. T. Wilson, Licentiate R.I.B.A., architect and surveyor, 21 Durham Road, Blackhill, co. Durham.

Nantwich.—March 2.—For construction of an underground sanitary convenience, for the Urban District Council. Mr. W. F. Newey, surveyor, Council Offices, 26 Pepper Street, Nantwich.

Norbury.—Feb. 28.—For erection of sixteen blocks of cottages for the working classes (comprising 128 cottages in all) on the estate at Norbury, Surrey. Send names by Feb. 28 to the Architect, London County Council, County Hall, Spring Gardens, S.W.

Norwich.—March 10.—For repairs and additions to the house at Villa Gardens, Old Lakenham, for the Corporation. Mr. A. E. Collins, M.I.C.E., city engineer, &c., Guildhall, Norwich.

Nottingham.—March 9.—For erection of a children's central home and administrative centre at Hartley Road, for the Guardians. Deposit £5 Messrs. Sutton & Gregory, architects, Bromley House, Nottingham.

Oldham.—March 11.—For the works required (including steelwork) in connection with erection and completion of a public wash-house at Robin Hill, for the Market and Baths Committee. The Borough Surveyor's Office, Oldham.

Ponteland.—March 31.—For erection of a police station, for the Northumberland Standing Joint Committee. Send names and £1 1*s*. deposit by March 3 to Mr. J. A. Bean, county surveyor, Moothall, Newcastle-on-Tyne.

Portland.—March 10.—For the construction of an above-ground convenience in Easton Street, for the Urban District Council. Deposit 10*s*. 6*d*. Mr. R. S. Henshaw, engineer and surveyor, Council Offices, Portland.

Rawtenstall.—March 16.—For the extension of the public library, for the Corporation. Deposit £2 2*s*. Mr. J. Johnson, borough surveyor, Town Hall, Rawtenstall, Lancs.

Rochford.—March 26.—For the erection of a police station at Rochford, for the Standing Joint Committee of the Court of Quarter Sessions and Essex County Council. Send names and £5 deposit by Feb. 28 to Mr. F. Whitmore, county architect, 67 Duke Street, Chelmsford.

St. Agnes (Cornwall).—March 7.—For improvements at the St. Agnes Council school. Mr. Sampson Hill, architect, Green Lane, Redruth.

St. Helens.—March 17.—For erection of a boathouse and landing stage in Taylor Park. Deposit £1 1*s*. Mr. A. W. Bradley, borough engineer and surveyor, Town Hall, St. Helens.

Salford.—March 4.—For extensive alterations and additions required at the Salford Union Infirmary (Hope), Pendleton, for the Guardians of Salford Union. Deposit £2 2*s*. Mr. F. Townson, clerk, Poor Law Offices, Eccles New Road, Salford.

Scotland.—March 2.—For the mason, carpenter, plumber, plaster, slater, painter, and glazier works of a villa to be erected in Queen Street, Buckie, for Mr. A. Wood Boyd. Mr. W. Hendry, architect, 91 West Church Street, Buckie.

Scotland.—March 2.—For the mason, carpenter, slater, plaster, plumber, and painter works of a memorial hall to be built at Craigdam by Mr. W. Duthie, Collynie. Mr. J. Cobban, architect, Hado House.

Scotland.—March 4.—For the carrying out of the following works in connection with erection of additions to Tynecastle School, M'Leod Street, for the Edinburgh School Board—viz.: (1) Mason work; (2) joiner work;

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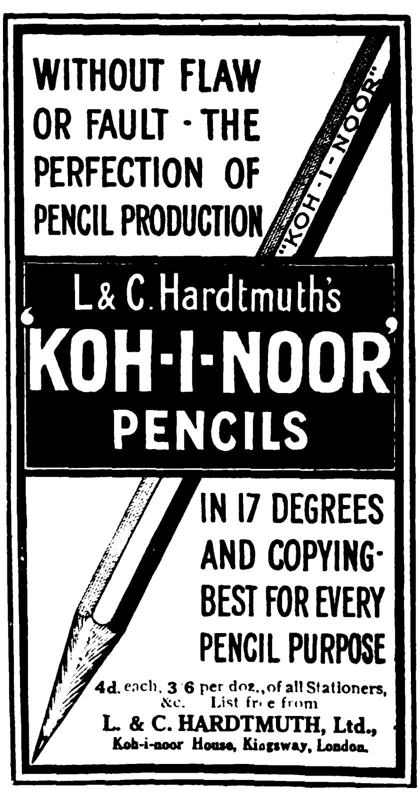

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(3) slater work; (4) plaster work; (5) plumber work. Mr. J. Stewart, S.S.C., clerk, Castle Terrace, Edinburgh.

Scotland.—March 7.—For the mason. joiner, iron, plumber, plaster, slater, and roof-glazing works in connection with proposed new laundry buildings and new gate lodge, Craiglockhart Poorhouse, for the Edinburgh Parish Council. Mr. R. M. Cameron, architect, 53 Great King Street, Edinburgh.

Scotland.—March 16.—For the digger work required in connection with the erection of new electricity works near Dalmarnock Bridge, Glasgow, for the Corporation. Deposit £2. Mr. W. W. Lackie, electrical engineer, 75 Waterloo Street, Glasgow.

Sheffield.—March 3.—For supply of materials and works comprised in extensions and alterations in existing sub-stations respectively in Jobson Road and Chapel Lane, for the Electric Supply Committee. Deposit 10s. 6d. each contract. Mr. S. E. Fedden, M.I.C.E., general manager and engineer, Commercial Street, Sheffield.

Sheffield.—March 9.—For works of all trades required in erection of Maltby Street new Council school and caretaker's house, Attercliffe Common, for the Education Committee. The City Architect, Town Hall, Sheffield.

Shibden.—March 4.—For erection of a pair of semi-detached houses near Stump Cross. Messrs. Walsh & Nicholas, architects, 10 Harrison Road, Halifax.

South Moor.—For erection of fifty-two houses, for the South Moor Colliery Company, Ltd. Deposit £2 2s. Mr. J. W. Rounthwaite, A.R.I.B.A., architect, 13 Mosley Street, Newcastle-on-Tyne.

Stamfordham.—March 31.—For erection of a police station, for the Northumberland Standing Joint Committee. Send names and £1 1s. deposit by March 3 to Mr. J. A. Bean, county surveyor, Moothall, Newcastle-on-Tyne.

Wales.—March 4.—For the following works, for the Glamorgan County Council: (1) Alterations and additions to the Council school at Dunvant, near Swansea; (2) additions to the higher elementary school at Pontardawe; (3) erection of a temporary building at the Mountain school at Aberavon. The County Hall, Cardiff.

Wales.—March 7.—For erection of sanitary annexe and extension of day rooms at the asylum, Denbigh, for the North Wales Lunatic Asylum Committee. Deposit £3 3s. Mr. W. T. Lockwood, F.R.I.B.A., 88 Foregate Street, Chester.

Wales.—March 13.—For the erection of isolation hospital buildings upon their hospital site situated on Fairwood Common, near Upper Killay, Swansea, for the Gower and Oystermouth Hospital Committee. Deposit £1 1s. Mr. H. A. Ellis, architect, 10 Fisher Street, Swansea.

Wales.—March 13.—For general repairs, painting and decorating, &c., to be done at old hospital, discharging block, mortuary, administrative block, four pavilions, &c., of the isolation hospital, Ystrad Rhondda, for the Rhondda Urban District Council. Deposit £1 1s. Mr. W. D. Morgan, architect, 194 Ystrad Road, Pentre.

Walkden.—March 5.—For erection of (a) thirty-two houses (semi-detached) to be erected in Newearth Road, for the Walkden Co-operative Society, Ltd. Deposit £1 1s. Mr. J. T. Proffitt, Central Buildings, Memorial Road, Walkden.

Wellington (Salop).—March 11.—For alterations and building work to the isolation wards at the workhouse. Deposit £1 1s. Mr. A. Jenkins, architect, Market Street, Wellington.

Winchester.—March 7.—For the construction of new bathrooms and w.c.'s and the necessary drainage work at the Winchester Police Station, for the Hampshire County Council. Mr. W. J. Taylor, county surveyor, The Castle, Winchester.

Wiveliscombe.—March 14.—For the carrying out of their scheme under the Housing of the Working Classes Acts, including the erection of fourteen cottages, comprising two blocks of four cottages each and three pairs of semi-detached cottages, also water supply, drains, and fencing, and the provision of all necessary materials and labour, for the Urban District Council. Mr. F. W. Roberts, F.R.I.B.A., architect, 2 Hammet Street, Taunton.

Worsley.—For erection of a shop and three houses in Walkden Road, for the Walkden Co-operative Society, Ltd. Deposit £1. Mr. J. T. Proffitt, architect and surveyor, Memorial Road, Walkden.

TENDERS.

BUDLEIGH SALTERTON.

For the construction of new waterworks, for the District Council.

Contract No. 1.

Hornsby & Sons (*accepted*).

Contract No. 2.

J. C. Palmer, Budleigh Salterton (*accepted*) £4,448 18 6

IRCHESTER.

For alterations to the Co-operative bakery, stabling, and drainage to cottages.

R. Marriott, Rushden (*accepted*) . . £3,042 0 0

Thirteen tenders were received.

LEICESTER.

For the erection of a picture house in Belgrave Gate, for the Star Picture House Co. Mr. T. Henry Bowell, M.S.A., architect, Leicester.

Southam & Sons	£2,920	0	0
Bradshaw Bros.	2,826	4	0
Potter	2,620	0	0
Clarke & Garrett	2,593	0	0
Kellett	2,588	0	0
Chitham & Co.	2,580	0	0
Phipps	2,544	0	0
Cox & Co.	2,530	0	0
Cole & Sons, Leicester (*accepted*)	2,515	6	0

LONDON.

For the enlargement of Broadwater Road school for mentally defective children, Wandsworth, for the London County Council.

Fletcher	£1,138	0	0
H. & E. Lea	1,111	0	0
Leather	1,103	19	0
Akers & Co.	1,065	0	0
Lole & Co.	1,063	0	0
Triggs & Co.	1,030	0	0
Pasterfield & English	1,023	0	0
J. & C. Bowyer	1,015	0	0
Marsland & Sons	1,009	0	0
F. & G. Foster	975	0	0
H. H. Hollingsworth, Batten's Yark, Peckham (*recommended*)	936	0	0
Architect's estimate	1,019	0	0

For rebuilding part of the Clerkenwell fire station built in 1870, for the London County Council.

Monk	£18,135	0	0
Higgs & Hill	17,924	0	0
F. & H. F. Higgs	17,225	0	0
Smith & Sons	17,149	0	0
Leslie & Co.	17,113	0	0
Carmichael	16,971	0	0
Lorden & Son	16,892	0	0
Patman & Fotheringham	16,843	0	0
Godson & Sons	16,786	0	0
J. & C. Bowyer	16,770	0	0
Downs	16,470	0	0
Coxhead	16,373	16	4

The Council have decided to invite fresh tenders from selected firms.

For the provision of a receiving room for measles at the Grove Hospital, Tooting, for the Metropolitan Asylums Board. Mr. W. T. Hatch, M.I.C.E., M.I.M.E., engineer-in-chief, Offices of the Board, Embankment, E.C.

Bland	£600	0	0
Heath & Son	365	0	0
Mills	335	0	0
Reason	315	0	0
Sharpin	278	0	0
Pasterfield & English	267	0	0
Chappell Bros.	265	0	0
Peddle	259	0	0
Wall	258	0	0
Howard & Blake, 145 High Holborn, W.C. (*recommended*)	240	0	0

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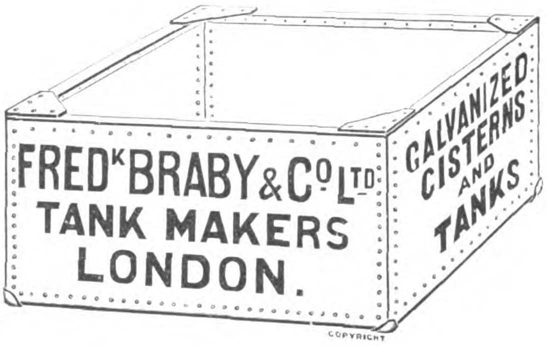

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LONDON—*continued.*

For enlargement, &c., of the "Ensham" L.C.C. school, Wandsworth.

W. King & Son	£7,735	0	0
Garrett & Son	7,714	0	0
Carmichael	7,693	0	0
F. & H. F. Higgs	7,693	0	0
J. Smith & Sons	7,459	0	0
Triggs & Co.	7,450	0	0
J. & C. Bowyer	7,300	0	0
J. McManus	7,177	0	0
Lole & Co., Trafalgar Square, Chelsea (*accepted*)	6,992	0	0
Architect's estimate	6,995	0	0

LONG BENTON.

For the erection of a permanent isolation pavilion at Scaffold Hill, near Long Benton, for the Earsdon Joint Hospital Board. Mr. J. R. MacMillen, architect, Shiremoor. Quantities by the Architect.

Swan	£2,774	11	0
A. & J. Potts	1,977	16	0
Bertram & Son	1,887	17	6
Taylor	1,844	6	1
Millar	1,787	0	0
Hastings	1,775	19	6
R. & A. P. Tait	1,723	3	6
Architect's estimate	1,800	0	0

SOUTHAMPTON.

For the erection of a reinforced concrete quay at Corporation Wharf. Mr. J. A. Crowther, borough engineer, Southampton.

G. Trollope & Sons and Colls & Sons	£5,348	0	0
Anglo-Saxon Construction Co.	4,996	15	6
Somerville & Co.	4,888	10	0
Douglas-Smith	4,642	15	7
Jackaman & Son	4,567	0	0
Holloway Bros. (London), Ltd.	4,400	0	0
Lovatt	4,304	0	0
Playfair & Toole	4,138	0	0
J. Douglas	4,060	0	0
Concrete Piling, Ltd., London (*accepted*)	3,864	0	0

WALES.

For the erection of eighteen houses at Abercrave, twenty-two houses at Ystradgynlais, and twenty houses at Colbren, for the Ystradgynlais District Council. Mr. J. C. Rees, architect, Neath.

H. Rogers, Swansea (*accepted*)	£13,758	0	0

Twenty-three tenders were received.

WELLINGTON.

For the erection of Council offices. Mr. E. S. Howard, architect, Wellington.

Small & Son, Taunton.
H. J. Miller & Son, Taunton.
J. Twyford, Wellington.
Sweet & Burge, Wellington (accepted subject to plans being approved by the Local Government Board).

WOOLWICH.

For the enlargement of the Maryon Park school by 256 places, for the London County Council.

Mills & Sons	£5,711	10	0
Longley & Co.	5,490	0	0
Thomas & Edge	5,270	10	0
Kent	5,188	0	0
Brand, Pettit & Co.	5,117	0	0
Friday & Ling	5,116	0	0
Groves	5,050	0	0
Holloway	4,947	0	0
J. & C. Bowyer	4,944	0	0
Roome & Co.	4,762	0	0
F. J. Gorham, Greenwich (*recommended*)	4,656	8	6
Architect's estimate	4,949	0	0

We have received from the Great Central Railway Company a copy of the Immingham Tide Table for 1914. This neat booklet, which has been produced in pocket size, gives the high water and low water tides at Immingham for each day of the year, in addition to useful facts and figures, charges, steamship services, &c., respecting the ports of Immingham and Grimsby. Copies of the Tide Table will be sent free on application to Great Central Publicity Office, 216 Marylebone Road, London, N.W.

HOUSEHOLD RUBBISH CREMATION.

The only wholesome method of getting rid of refuse from kitchen or elsewhere is that of cremation—burial is, as a rule, no good. But where, and how? If cooking is done without solid fuel—by the gas cooker or any other means—the problem of getting rid of rubbish before it decays and becomes a danger has to be taken seriously.

There are two modern and perfectly clean—as well as economical—methods of disposing of animal and vegetable refuse. Both are due to the enterprise of the gas undertakings.

The first is by the use of a small coke stove which will heat water either for household use, or radiators for warming passages and halls, or for both. These small coke boilers are a godsend in many ways, not the least being for the instantaneous burning of any rubbish of any sort and reducing it to cleanly ashes. The second and less known method in England—though it has for some time been common in America—is by means of a specially constructed gas-heated refuse destructor (or incinerator, as it is sometimes called) into which rubbish of any sort can be put, the gas turned on for a few minutes and turned out again the moment the rubbish is thoroughly charred.

In either case the family dust-bin becomes in truth a bin for dust, instead of a hotbed for spreading disease in the form of bad throats and worse.

RETIREMENT OF SIR HENRY TANNER, C.B., I.S.O.

With characteristic modesty, says the *City Press*, Sir Henry Tanner, C.B., I.S.O., vacated at the beginning of this year, without publicly proclaiming the fact, his post as Principal Architect to his Majesty's Commissioners of Works and Public Buildings. Now that the fact has leaked out, it is due to Sir Henry that some public notice should be taken of his long and brilliant official career, which has not, however, closed yet, as he is still retained by the Government in a consultative capacity. The son of a builder, he was born in London in 1849, and early acquired a knowledge of building operations. After some practical work in Wiltshire and Surrey, he entered the office of Mr. Anthony Salvin, and in 1871 he obtained a post as assistant in H.M. Office of Works in open competition. For a time he was chief assistant to Mr. Robert Richardson, who had the supervision of post offices for the greater part of London, and of public buildings generally in the southern half of England and Wales. In 1876 he was transferred to the office of Sir John Taylor, K.C.B., with whom he remained until 1882, when he was promoted to be architect and surveyor, being stationed at Leeds, and having charge of all buildings under the control of the Office of Works in the North of England. In 1884 he returned to London as architect responsible for post-office buildings throughout the country, and other buildings outside London. On the retirement of Sir John Taylor and Mr. Boyce in 1898, he became principal architect, being responsible for the whole of the building work of the Department both at home and abroad. Before that promotion many public buildings had been carried out under his direction, including the General Post-offices North and South (St. Martin's-le-Grand); the head office of the Eastern, West Central, and Paddington Districts; post-offices at York, Bradford, Liverpool, Birmingham, Sheffield, Nottingham, Cardiff, and Swansea; the Probate Registry at York; the County Courts at Derby, Warrington, and Oldham; and many smaller buildings, extensions, and alterations. After he became principal architect he was directly responsible for fewer buildings but those included the new Post Office Savings Bank buildings at West Kensington, the Land Registry, and the King Edward Building of the General Post Office. He was also responsible for the works in Westminster Abbey for the Coronations of King Edward VII. and George V. He was chairman of the Joint Committee formed by the Royal Institute of British Architects, of which body he is a Fellow, to draw up a report on reinforced concrete building construction, and was concerned from the first in the promotion of the Concrete Institute, of which he was president for two years. Having always been in favour of the construction of fire-resisting buildings, and the reduction of the use of wood therein to a minimum, he was impressed with the possibilities of reinforced concrete when its use was becoming somewhat common on the Continent and in America. The pioneers in this country in that form of construction were the railway and dock companies, who adopted it for warehouses and the like. Sir Henry paid a special visit to Newcastle-on-Tyne to inspect some ferro-concrete buildings put up by the Great Eastern Railway Company, and extended his inspection to all the important buildings of the kind so erected up to that time in this country. Most of these were on the Hennebique system, and he became convinced of its adaptability for the intended new building on the old site of Christ's Hospital—the King Edward Building of to-day. There were difficulties in the way, official and otherwise, but Sir Henry, absolutely sure of his ground, overcame them all. He obtained the sanction of the First Commissioner of Works to construct the new building in Hennebique ferro-concrete, the engineers employed being L. G. Mouchel & Partners, Ltd. The results have amply justified the selection of that form of construction, which enabled a building of large uninterrupted area to be erected at considerably less cost than could have been obtained in any other way. Since then various public buildings have been erected under the direction of Sir Henry Tanner, both on the Hennebique and other systems, for H.M. Office of Works. In a chat with a representative of the *City Press* on Thursday, Sir Henry said he remained a staunch believer in reinforced concrete, and was glad to see that the prejudice against it was gradually dying out. It only remains to add that in 1903 he was made a Companion of the Imperial Service Order, in 1904 a Knight, and in 1911 a Civil Companion of the Order of the Bath.

VARIETIES.

THE Corporation of Glasgow invite from sculptors competitive models and offers for four groups of symbolical sculpture to be placed on the abutments of the new bridge at Radnor Street, Kelvingrove Park.

THE Risca (Mon.) Urban District Council decided on Tuesday last to take the necessary steps to erect 200 additional houses under the Housing of the Working Classes Act.

COLONEL E. M. BRUCE VAUGHAN, F.R.I.B.A., architect, Cardiff, is preparing plans for the proposed extensive buildings at University College of South Wales and Monmouthshire, which will probably cost £90,000.

SPECIFICATIONS have now been issued by the Admiralty for the erection of 400 houses for the workmen who are to be engaged at Crombie Explosives Works. The houses, which are of the cottage type, will be let at a cheap rental in order to meet the means of the Government employés.

THE Rubber Growers' Association (Incorporated), of London, have arranged to make a presentation of a prescribed amount of rubber flooring to certain hospitals in different parts of the country. The flooring will be supplied and laid down free of charge.

THE Great Central Railway Company contemplate extensive developments at Langwith Junction in the near future, the scheme providing for the erection of additional engine sheds, and the provision of barrack accommodation for the men.

MESSRS. JOHN BROOKE & ELCOCK, FF.R.I.B.A., Manchester, are the architects for the proposed handsome block of flats and tennis courts in Oxford Road, facing Whitworth Park, Manchester. A company is being formed with a capital of £90,000 for the purpose.

MR. THOMAS WALTER LAWRENCE EMDEN, of Lancaster Place, Strand, W.C., and of St. Margaret-at-Cliffe, Dover, civil engineer and architect, for three years Mayor of Dover and a former Mayor of Westminster, who died on December 3 last, left £30,410 gross and £14,526 net.

SEPARATE sewerage and sewage disposal schemes and water supply schemes are to be prepared for each of the following Pembrokeshire districts—namely, Newport, Kilgerran, and St. Dogmaels. Mr. T. J. Moss-Flower, of 28 Victoria Street, Westminster, and Bristol, has been appointed engineer in connection with these works by the St. Dogmaels Rural District Council.

SOUTHEND-ON-SEA is still growing. The Borough Council at their last meeting passed plans for a church, several shops, and upwards of 100 houses. Served as Southend, Westcliff, and Leigh are by the London, Tilbury and Southend Railway, one of the most progressive railways in the United Kingdom, it is easily understandable that these watering-places should be so popular.

MR. MONTAGU (Financial Secretary to the Treasury) stated on Tuesday in the House of Commons that the projects and estimates for the new Government buildings at Delhi were being examined by the Government of India. According to these estimates the outlay on buildings of all kinds would amount to £2,800,000. The land had been purchased by Government under a notification issued immediately after the announcement of the change of capital, and under terms which based the price on the value prevailing at that time.

THE National Provident Institution for Mutual Life Assurance hold their seventy-eighth annual meeting at the Cannon Street Hotel, London, to-day (Friday). The annual report and accounts show that the rate of interest earned on the funds during the past year has been £4 1*s.* 4*d.* per cent., after deducting tax; the expense ratio 10.4 per cent. of the premium income, excluding the special expenses on the division of profits; and the mortality experience 64 per cent. of the expected.

A MEETING of the Swansea and Merthyr Joint Asylum Committee was held at the Guildhall, Swansea, on the 20th inst., to further discuss the question of the new asylum at Cefncoed, Merthyr. It was stated in a report of the sub-committee that the estimated cost of some £180,700 would include foundations, superstructure, architect's commission, cost of heating, machinery, and all else, with the exception of the laying out of the grounds. The tender of Messrs. Korting Bros., London, for heating the buildings at £19,160 was accepted.

THE question of the venue for the new headquarters of the Amalgamated Society of Carpenters and Joiners has been narrowed down to either London or Manchester. The Executive Council, by a majority of 11,000 votes, have been empowered to build or rent new general offices, and by a majority of 14,000 have been deputed to dispose of the present office buildings. In the voting for establishing the headquarters in one of six selected towns Manchester received 6,765 votes, London 4,631, Glasgow 2,331, Birmingham 2,246, Newcastle 1,611, Liverpool 267. The next vote will decide between Manchester and London.

THE Incorporated Church Building Society held its usual monthly meeting on the 19th inst., at 7 Dean's Yard, Westminster Abbey, S.W. Grants of money were made in aid of the following objects, viz.: Building new churches at Copnor, St. Cuthbert, Hants, £250; Coulsdon, St. Andrew, Surrey, £125, for the first portion; East Sheen, All Saints', Surrey, £150; Grimsby, St. Stephen, £200, for the first portion; and Potter's Bar, St. John, Middlesex, £125, for the first portion; and towards enlarging or otherwise improving the accommodation in the churches at Canton, St. Luke, Cardiff, £50; Kilsby, St. Faith, near Rugby, £5; Llansamlet, St. Samlet, Glam., £15; Load St. Mary, Christ Church, Som., £10; Salisbury, St. Mark, £75; and Spreyton, St. Michael, Devon, £5. Grants were also made from the Special Mission Buildings Fund towards Mission churches at Polruan, St. Saviour, Lanteglos-by-Fowey, Cornwall, £5; and Squirrels Heath, All Saints', Romford, Essex, £25.

TRADE NOTES.

A NOTEWORTHY exhibit at the Manchester Building Trades Exhibition, which opens on March 3, will be Messrs. Vernon & Co.'s (Stands Nos. 6 and 7) gas oven and coal oven sitting-room combination range. In this range Messrs. Vernon & Co. have combined art and utility in a manner which shows they are alive to present-day requirements. The range is exceptionally suitable for garden city houses and flats, and has evidently met with the approval of architects and builders in the London districts, where they have fitted a large quantity. Messrs. Vernon & Co. also show a fine range of hob grates, and mantels in Jacobean, Georgian, and Elizabethan styles.

THE General Hospital, Bristol, and the Infectious Diseases Hospital, Exeter, are being supplied with Shorland's double-fronted warm-air ventilating patent Manchester stoves with descending smoke flues, by Messrs. E. H. Shorland & Bro., Ltd., of Failsworth, Manchester. The extensions to the workhouse, Bishop Auckland, are being supplied with Shorland's patent exhaust roof ventilators. The Richard Murray Hospital, Blackhill, is being supplied with Shorland's double-fronted patent Manchester stoves with descending smoke flues, patent Manchester grates, patent exhaust, and special inlet ventilators.

A MOST essential process when excavating for building purposes is to render waterproof the most likely places where dampness and wet is liable to occur. The basements of the Tyne Dock Masonic Hall, which were excavated and built on the site of an old building, have recently been rendered with a lining of the powder "Pudlo." We also learn that the Bilton Council Schools are being built with "Pudlo" incorporated in the cement work.

THE
Architect and Contract Reporter.
FRIDAY, MARCH 6, 1914.

EDITORIAL NOTICES.

The Editor will always be pleased to examine drawings or articles with a view to publication, but cannot be responsible for the safety of those sent, though every reasonable care will be taken. Contributors desiring payment should clearly state their wishes. No payment will be made until after publication, and a commission to prepare articles or drawings does not necessarily imply acceptance or approval.

No communication can be inserted unless authenticated by the name and address of the writer—not in every case for publication, but as a guarantee of good faith.

We have upon our staff a very eminent Barrister, who will be glad to answer in the columns of this paper any legal question that may be of interest to our readers. All letters must be addressed "Legal Adviser," Office of "The Architect," Imperial Buildings, Ludgate Circus, London, E.C.

The Editor will be glad to receive from Architects in London and the Provinces results of Competitions and Tenders and other particulars of Works in progress in which they may be interested.

TENDERS, ETC.

⁂ ***As great disappointment is frequently expressed at the nonappearance of Contracts Open, Tenders, &c., it is particularly requested that information of this description be forwarded to the Office, Imperial Buildings, Ludgate Circus, London, E.C., not later than 2 P.M. on Thursdays.***

COMPETITIONS OPEN.

CANADA (OTTAWA).—April 2.—Architects are invited to submit by April 2 sketch designs in a preliminary competition for the erection of Departmental and Courts Buildings at Ottawa, Ontario. From the designs submitted six will be chosen by the assessors to take part in a final competition, for which the five unsuccessful competitors will each receive an honorarium of 3,000 dollars. The competition is limited to British subjects practising in the British Empire. The Government has appointed Mr. T. E. Collcutt, Mr. J. H. G. Russell, and Mr. J. O. Marchand as assessors. Conditions may be obtained from the High Commissioner for Canada, 17 Victoria Street, London, S.W., and Mr. R. C. Desrochers, secretary, Department of Public Works, Ottawa.

GLASGOW.—May 1.—The Corporation are prepared to receive from sculptors competitive models and relative offers for four groups of symbolical sculpture to be placed on the abutments of the new bridge at Radnor Street, Kelvingrove Park, Glasgow. Copies of the conditions of the competition may be obtained on application to Mr. J. Lindsay, town clerk, City Chambers, Glasgow.

HAWARDEN.—March 16.—The Rural District Council invite the submission by architects of plans and estimates for laying out a piece of land in the parish of Hawarden, and containing about 2¾ acres, and for the erection of workmen's cottages. Mr. F. Barrett, sanitary inspector's office, Hawarden.

IRELAND.—March 20.—The Belfast Corporation invite competitive designs for an Art Gallery and Museum, to be erected in the Botanic Gardens. The complete scheme will involve an outlay of £75,000, but it is only intended to spend at first £30,000. Mr. John J. Burnet, A.R.S.A., LL.D., will act as assessor. The conditions and plan of site may be had on the payment of £1 1s. deposit (returnable on receipt of a bonâ-fide design) to Mr. R. Meyer, Town Clerk, Belfast.

LONDON.—May 4.—The Bridge House Estates Committee of the Corporation of the City of London invite designs from British architects for the architectural treatment of the new St. Paul's Bridge. The conditions of the competition and instructions may be obtained upon payment of a deposit of £3 3s., which will be returned on receipt of a design in accordance with the conditions. A premium of £300 is offered for the design which may be placed first, and further premiums of £200 and £100 respectively. The committee will be advised by Sir William Emerson, P.P.R.I.B.A., as assessor, whose decision will govern the award of the premiums and be final and binding in all stages of the competition. The Town Clerk, Guildhall, London, E.C.

MOLD.—The Urban District Council invite architects to submit plans, &c., for a fire station and caretaker's house, to be erected at Earl Road. Further particulars may be obtained from Mr. D. Thomas, surveyor, Town Hall, Mold.

CONTRACTS OPEN.

ACCRINGTON.—March 14.—For the several works required in extension of the present tramway depôt, Ellison's Tenement, for the Tramway and Electricity Committee. Mr. W. J. Newton, A.M.I.C.E., borough engineer, Town Hall, Accrington.

AUDLEY.—March 10.—For alterations and improvements to the premises of Raven's Lane Council school, Audley (Newcastle, Staffs.). Send applications and £1 1s. deposit before March 10 to Mr. Graham Balfour, director of education, County Education Offices, Stafford.

BICESTER.—March 13.—For erection of Bicester new post office, for the Commissioners of H.M. Office of Works and Public Buildings. Deposit £1 1s. The Postmaster, Bicester Post Office, and H.M. Office of Works, Storey's Gate, London, S.W.

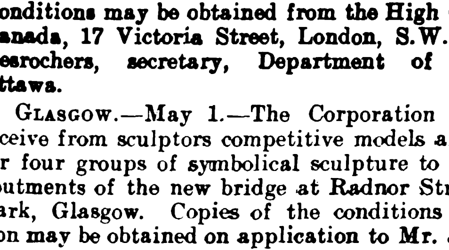
BIRKENHEAD.—March 6. For erection of proposed Council schools in Bidston Avenue, for the Birkenhead Education Committee. Send application and £1 1s. deposit by March 6 to Mr. R. T. Jones, secretary, Town Hall, Birkenhead.

BLACKPOOL.—March 18.—For works, &c., required in the extension of Waterloo Road Station, South Shore, for the Lancashire and Yorkshire and London and North-Western Joint Railways. The Engineer's Office, Hunt's Bank, Manchester.

BRADFIELD.—March 14.—For erection of two cottages at Tutts Clump, Bradfield, Berks., for the Guardians. Deposit £1 1s. Mr. B. A. Collins, clerk, 172 Friar Street, Reading.

BRADFORD.—For erection of a picture house, for the Lister Hills Cinema, Ltd. Mr. J. Jackson, M.S.A., architect, Sunbridge Road, Bradford.

(*Continued on page* 19.)



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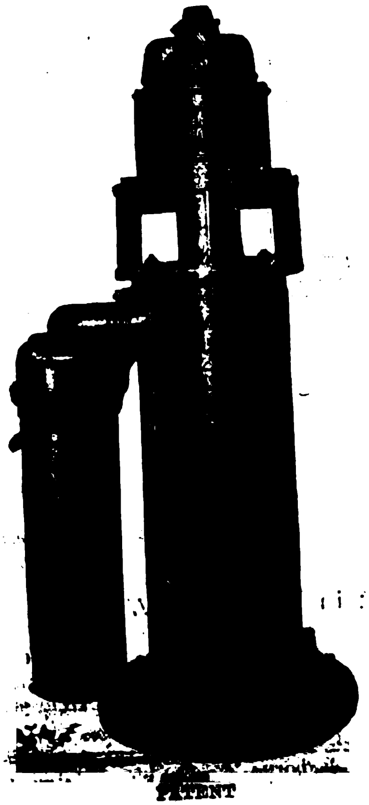

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Blaina.—March 17.—For erection of a manual training centre, for the Monmouthshire Education Committee. Deposit £1 1s. Mr. John Bain, F.R.I.B.A., County Council Offices, Newport, Mon.

Brighton.—March 12.—For supply and erection of cast and wrought iron and steel work to a new covered balcony to be erected at the borough sanatorium, Bear Road, for the Town Council. The Borough Surveyor, Town Hall, Brighton.

Burley-in-Wharfedale.—March 14.—The Scalebor Park Committee invite (whole or separate) tenders for erection of a dining-room block at the Scalebor Park Asylum (builder, joiner, roof tiler, plumber, plasterer, painter, ironfounder, and smith). The West Riding Architect, County Hall, Wakefield. Send £1 deposit by separate letter to the West Riding Treasurer, County Hall, Wakefield.

Burnham.—March 18.—For erection of a Council school at Burnham, for the Somerset Education Committee. Send applications by March 7 to Messrs. Samson & Colthurst, architects, 51 High Street, Bridgwater.

Canterbury.—March 20.—For erection of hall and schools adjoining the Baptist Church, St. George's Place. Messrs. Jennings & Gray, architects, 4 St. Margaret's Street, Canterbury. (See advertisement.)

Carleton.—March 11.—For the mason's, carpenter's, plumber's and painter's, plasterer's and slater's work required in erection of six houses. Mr. W. Smith, 6 Oxford Terrace, Carleton, Skipton.

Castleford.—For erection of a bakery and workshops, Station Road, for the Castleford Co-operative Industrial Society. Messrs. Garside & Pennington, architects and surveyors, Pontefract and Castleford.

Clitheroe.—March 16.—For erection of a dry stone wall on Grindleton Fell. Mr. A. R. Bleazard, borough engineer, Clitheroe.

Coventry.—March 16.—For the construction of single-storey shopping for gasfitters' shops and stores, 164 feet long, 42 feet wide, at the Gas Street works, for the Gas Committee. Deposit £1 1s. Mr. F. W. Stevenson, engineer and general manager, Gasworks, Coventry.

Crewe.—For the various combined trades, or for steel constructional work separately, or concrete flooring, comprised in a new bakery, for the Crewe Co-operative Friendly Society, Ltd. Deposit £1. Mr. G. E. Bolshaw, architect, 106 Lord Street, Southport.

Cwmffrwdoer (near Pontypool).—March 17.—For extensions to the infants' school, for the Monmouthshire County Council. Deposit £1 1s. Mr. John Bain, F.R.I.B.A., County Council Offices, Newport, Mon.

Dartford.—March 11.—For extension of workshops at Darenth Industrial Colony, near Dartford, Kent, for the Metropolitan Asylums Board. Deposit £1. Mr. W. T. Hatch, M.I.C.E., M.I.M.E., engineer-in-chief, the Office of the Board, Embankment, E.C.

Devonport.—March 14.—For alterations to premises, 93 Fore Street. Messrs. Timothy White Co.'s Head Offices, 30 Chandos Street, Portsmouth.

Droylsden.—March 9.—For the alteration of existing building into stables, depôt, &c., for the Urban District Council. Mr. C. Hall, engineer and surveyor, Council Offices, Droylsden.

Fowey.—March 12.—For erection of pair of semi-detached cottages at Lawhyre Farm, for Mr. C. A. Hanson. Mr. C. W. Parkes Lees, architect, Lanteglos-by-Fowey.

Gravesend.—March 12.—For construction of public conveniences in Queen Street, for the Town Council. The Borough Surveyor's Office, Gravesend.

Grimsby.—March 9.—For (*a*) conversion of premises, 7 and 9 East Marsh Street, into public conveniences; (*b*) erection of a public convenience at Welholme Road crossing, for the Corporation. Deposit £1 1s. Mr. H. G. Whyatt, M.I.C.E., borough engineer and surveyor, 170 Victoria Street, Grimsby.

Halifax.—March 10.—For the various works required in conversion of shops into banking premises at King Cross. Messrs. Walsh & Nicholas, architects and surveyors, 10 Harrison Road, Halifax.

Hambledon.—March 18.—For erection and completion of a home for children at Hambledon, Surrey, for the Guardians. Send applications and £2 2s. deposit by March 7 to Mr. E. L. Lunn, Licentiate R.I.B.A., 36 High Street, Guildford.

Hebburn.—March 9.—For extension of the administration block at their isolation hospital, for the Urban District Council. Mr. H. Paterson, surveyor, Council Offices, Argyle Street, Hebburn.

High Harrington.—March 10.—For the work required in erection and completion of a house at High Harrington, Cumberland. Send names by March 10 to Mr. J. S. Stout, architect, 36 Lowther Street, Whitehaven.

Hockley.—March 10.—For erection of new offices, &c., at the goods depôt, Hockley, Birmingham, for the Great Western Railway Co. The Engineer at Wolverhampton Station.

Holbeach.—March 14.—For alterations and additions to the grammar school, for the Managers of the Holbeach Girls' Church of England School. Mr. E. J. A. Christie, county architect, Sessions House, Boston, and Mr. J. C. Harrison, solicitor, Holbeach.

Horbling.—March 21.—For alterations and additions to Brown's School, Horbling, Lincs. Deposit £1 1s. Mr. R. Wadsley, architect, Billingborough.

Horning (Norfolk).—March 14.—For erection of six cottages in the parish of Horning, in the rural district, for the Smallburgh Rural District Council. Deposit £1 1s. Mr. F. Davies, clerk, North Walsham.

Huddersfield.—March 20.—For erection of various buildings, roads, and drainage in connection with a hospital for tuberculosis at Bradley (including a children's pavilion, the gift of Mr. J. Sykes, J.P.), for the Corporation. Alternative tenders are required (1) in concrete; (2) in brick; (3) in stone. Deposit £2 2s. Mr. K. F. Campbell, M.I.C.E., M.I.E.E., borough engineer, Huddersfield.

Huddersfield.—March 20.—For various works required in erection of twenty-five workmen's dwellings at Bradley and twenty-four workmen's dwellings at Salendine Nook, for the Corporation. Alternative tenders are required (1) in stone; (2) in concrete. Mr. K. F. Campbell, M.I.C.E., borough engineer and surveyor, 1 Peel Street, Huddersfield.

Hull.—March 9.—For bricklayers', joiners', slaters', plumbers', and painters' work in connection with alterations required to 16 and 18 Linnæus Street, for converting the premises into a receiving home for children, for the Governor and Guardians. Mr. T. B. Atkinson, architect, Trinity House Chambers, Trinity House Lane, Hull.

Ireland.—March 23.—The Secretary of State for War invites tenders for the following work: In alterations and additions at the Military Hospital, Fermoy, in the Irish Command. Send applications and 10s. deposit by March 13 to the Director of Barrack Construction, 80 Pall Mall, S.W. Plans, &c., may be inspected from March 6 to 13 inclusive at that office, and at the Royal Engineer's Office, Fermoy.

Ireland.—April 7.—For the conversion of military barracks buildings into eleven cottages, and erection of sixteen new cottages under the Housing of the Working Classes Acts, for the Monaghan Urban Council. Mr. J. J. Inglis, 36 Dawson Street, Dublin.

Knaresborough.—For the various works required in erection of cottage homes, Stockwell Lane, for the Board of Guardians. Mr. J. Houfe, architect, Albert Chambers, Harrogate.

London.—March 9.—For repairs to the roof of the King Street baths, for the St. Pancras Borough Council. Mr. C. H. F. Barrett, town clerk, the Town Hall, Pancras Road, N.W.

London.—March 11.—For the repair of fourteen cottages, Nos. 1 to 14 Miniver Street, Blackfriars Road, for the Trustees of St. Martin-in-the-Fields Almshouse and Pension Charity. Deposit £2 2s. Mr. A. A. Kekwick, M.S.A., architect, 12 Norfolk Street, Strand, W.C.

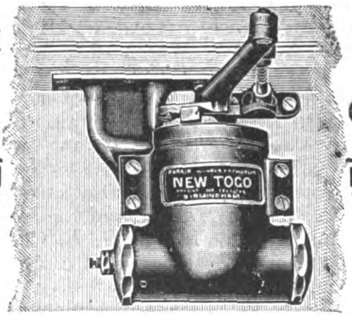
Lymm.—For erection and completion of shop premises, and also fittings for same, for the Warrington Equitable Industrial Co-operative Society, Ltd. Send applications and £1 1s. deposit to Mr. F. E. L. Harris, architect, Co-operative Wholesale Society, Ltd., 1 Balloon Street, Manchester.

Macclesfield.—March 11.—For erection of a motor omnibus garage in King Edward Street, for the British Automobile Traction Co., Ltd. Mr. R. Fenton, Motor Omnibus Garage, King Edward Street, Macclesfield.

Masham.—For the various works required in alterations to property, for Mr. R. E. Peacock. Mr. J. Houfe, architect and surveyor, Albert Chambers, Harrogate.

Mowsley.—March 13.—For erection of proposed pavilion, extensions to existing pavilions and administration block, including drainage, concrete, and other works, at the tuberculosis sanatorium, for the Leicestershire County Council. Deposit £2 2s. Mr. T. I. McCarthy, architect, Central Chambers, Coalville, near Leicester.

New Tredegar.—March 16.—For erection of a Constitutional club. Messrs. Seaborne & Cayley, architects, Arcade Chambers, Ystrad Mynach.



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Northallerton.—March 10.—For the whole of the works connected with the erection of offices and clothing stores adjoining the drill hall, Thirsk Road, for the North Riding Territorial Force Association. Send applications by March 10 to Major R. F. Ruck-Keen, secretary, the Association Offices, South Parade, Northallerton.

Nottingham.—March 9.—For erection of baths, Muskham Street, Meadows, for the Public Baths Committee. Deposit £2 2*s*. Mr. A. Dale, city architect, Guildhall, Nottingham.

Oldham.—March 11.—For the works required (including steelwork) in connection with erection and completion of a public wash-house at Robin Hill, for the Market and Baths Committee. The Borough Surveyor's Office, Oldham.

Peterborough.—For alteration of the gaol buildings in Thorpe Road, for the Standing Joint Committee of the Soke of Peterborough County Council. Deposit £1 1*s*. The County Surveyor's Office, Priestgate, Peterborough.

Portland.—March 10.—For the construction of an above-ground convenience in Easton Street, for the Urban District Council. Deposit 10*s*. 6*d*. Mr. R. S. Henshaw, engineer and surveyor, Council Offices, Portland.

Rawtenstall.—March 16.—For the extension of the public library, for the Corporation. Deposit £2 2*s*. Mr. J. Johnson, borough surveyor, Town Hall, Rawtenstall, Lancs.

St. Helens.—March 17.—For erection of a boathouse and landing stage in Taylor Park. Deposit £1 1*s*. Mr. A. W. Bradley, borough engineer and surveyor, Town Hall, St. Helens.

Scotland.—March 13.—For slater and plumber work at Overton Road stables, for the Kirkcaldy Town Council. The Burgh Surveyor's Office, Kirkcaldy.

Sevenoaks.—March 17.—For erection of a pavilion on the recreation ground in Hollybush Lane, for the Urban District Council. Mr. S. Towlson, A.M.I.C.E., surveyor, Council Offices, Argyle Road, Sevenoaks.

Skipton.—For the various works required in erection of a billiard hall at Swadford Street, for Messrs. Willie Holt (Burnley), Ltd. Mr. J. W. Broughton, architect, surveyor, &c., 19 High Street, Skipton.

Stafford.—March 17.—For erection of new station sorting office, for the Commissioners of H.M. Office of Works and Public Buildings. Deposit £1 1*s*. The Postmaster, Stafford, and H.M. Office of Works, Storey's Gate, London, S.W.

Sunderland.—March 24.—For erection of shops and offices, Burdon Road (whole tenders), for the North Eastern Railway Co. Apply after March 10 to Mr. William Bell, company's architect, Irving House, Westgate Road, Newcastle-on-Tyne. (See advertisement.)

Trinant (near Crumlin).—March 17.—For extensions to the Council schools, for the Monmouthshire Education Committee. Deposit £1 1*s*. Mr. John Bain, F.R.I.B.A., County Council Offices, Newport, Mon.

Wakefield.—March 18.—The West Riding Asylums Board invite tenders (whole or separate) for erection of a detached block for female chronic cases at the Wakefield Asylum (mason, joiner, slater, plumber, plasterer, painter). Mr. W. E. H. Burton, A.M.I.C.E., architect, West Riding Asylum, Wakefield. Send £1 deposit by separate letter to the Treasurer to the Board, West Riding Asylum, Wakefield.

Wales.—March 12.—For certain repairs to Madyn Dysw, Amlwch, for the Anglesey Small Holdings Committee. Mr. J. Owen, F.R.I.B.A., architect, Menai Bridge.

Wales.—March 13.—For the erection of isolation hospital buildings upon their hospital site situated on Fairwood Common, near Upper Killay, Swansea, for the Gower and Oystermouth Hospital Committee. Deposit £1 1*s*. Mr. H. A. Ellis, architect, 10 Fisher Street, Swansea.

Wales.—March 14.—For erection of chapel, entrance lodge, and latrines at the Morriston Cemetery, Swansea, for the Corporation. Deposit £1 1*s*. Mr. E. E. Morgan, A.R.I.B.A., borough architect, 3 Prospect Place, Swansea.

Wales.—March 14.—For erection of two semi-detached houses at Ystrad Mynach, adjoining Darran No. 2 Building Club, for Mr. W. Beynon, Ystrad Mynach. Mr. H. Gabe Jones, architect and surveyor, Hengoed.

Wales.—March 16.—For erection of fifty-two houses (twenty-eight semi-detached and twenty-four in blocks of six), together with boundary walls, drains, &c., at Pontygwindy, Caerphilly, for the Pontygwindy Building Co., Ltd. Messrs. Johnson & Richards, architects, Merthyr Tydfil.

Wales.—March 16.—For forming roads and paths, drainage, erection of chapel, lodge, conveniences, boundary walls, &c., at their proposed new cemetery (area eight acres) at Gwaelodybrithdir, within the Gellygaer urban district. Mr. Frank Read, A.M.I.C.E., engineer and surveyor, Council Offices, Hengoed.

Wales.—March 20.—For foundation works for the asylum to be erected at Cockett, near Swansea, for the Swansea and Merthyr Tydfil Asylum Visiting Committee. Send application and £5 deposit by March 9 to Messrs. George T. Hine & H. Carter Pegg, architects, 35 Parliament Street, Westminster, S.W.

Wales.—March 21.—For levelling site of proposed hospital at Llandough, for the Guardians of the Cardiff Union. Deposit £2 2*s*. Mr. Edwin Seward, F.R.I.B.A., architect, Queen's Chambers, Cardiff.

Wales.—March 28.—For erection of infirmary buildings at Ruthin, for the Guardians. Deposit £1 1*s*. Mr. F. A. Roberts, M.S.A., architect, Earl Chambers, Mold.

War Department.—Tenders are required for the triennial contracts for works, repairs, and materials from April 1, 1914, at several stations, a full list of which appears in our advertisement columns, together with other necessary information.

Wellingborough.—March 17.—For the pulling down of factory, cottage, outbuildings, and appurtenances, and the erection of a boundary wall in Cannon Street and Cambridge Street, in connection with street improvements, for the Urban District Council. Mr. E. Y. Harrison, A.M.I.C.E., engineer and surveyor, Council Offices, Market Square, Wellingborough.

Wellington (Salop).—March 11.—For alterations and building work to the isolation wards at the workhouse. Deposit £1 1*s*. Mr. A. Jenkins, architect, Market Street, Wellington.

Wimblington.—March 16.—For (1) erection of a pair of cottages at Wimblington, for the Isle of Ely County Council. The County Hall, March, or the County Surveyor's Office, Ely.

Wiveliscombe.—March 14.—For the carrying out of their scheme under the Housing of the Working Classes Acts, including the erection of fourteen cottages, comprising two blocks of four cottages each and three pairs of semi-detached cottages, also water supply, drains, and fencing, and the provision of all necessary materials and labour, for the Urban District Council. Mr. F. W. Roberts, F.R.I.B.A., architect, 2 Hammet Street, Taunton.

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For the erection of a school for the Leicestershire County Education Committee. Mr. E. G. Fowler, architect, Leicester.

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Chitham & Co.	1,997	0	0
Cole & Sons	1,975	6	8
Fox	1,959	0	0
Griffin Bros.	1,950	0	0
Moss & Son	1,935	0	0
Haycock Bros.	1,922	19	0
Orton & Co.	1,912	0	0
F. Sleath, Rothley (*accepted*)	1,895	0	0
Moss & Sons (*withdrawn*)	1,890	0	0

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For the erection of a school for the Leicestershire County Education Committee. Mr. E. G. Fowler, architect, Leicester.

Barker & Sons	£2,950	0	0
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Griffin Bros.	2,883	10	0
Orton & Co.	2,840	0	0
Kellett & Son	2,820	0	0
Cole & Sons	2,812	1	6
Haycock Bros.	2,797	15	0
Moss & Sons	2,780	0	0
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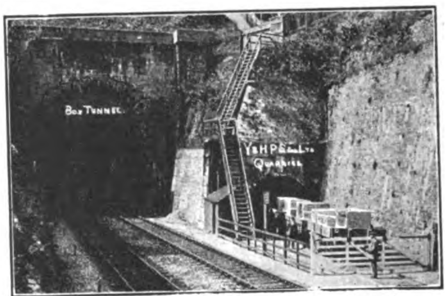

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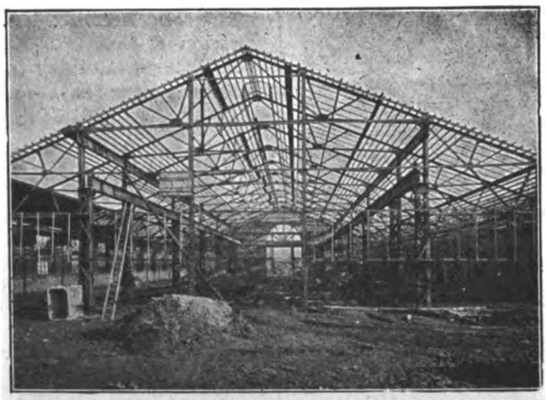

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MANCHESTER, Office and Works, Trafford Park.
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HINCKLEY.

For the erection of a handicraft centre for the Leicestershire County Education Committee. Mr. E. G. FOWLER, architect, Leicester.

Jeffcote	£772	18	0
Sharp & Son	680	0	0
Moss & Son	680	0	0
Barker & Sons	679	0	0
Haycock Bros.	662	15	0
Kellett & Son	645	0	0
Hall & Son	630	16	0
Fox	620	10	0
COLE & SONS, Leicester (*accepted*)	600	15	8

ISLE OF WIGHT.

For the erection of a Sunday school for the Building Committee of Holy Trinity Church, Cowes. Mr. J. W. BESSANT, architect, Cowes, I. of W.

Brading & Son	£2,930	0	0
Williams	2,858	0	0
Westbrook & Son	2,775	0	0
Day	2,727	0	0
JAS. BALL & SON, Cowes (*accepted*)	2,712	0	0

KETTERING.

For the erection of public baths on a site near Bath Road, for the Urban District Council. Mr. T. R. SMITH, surveyor, Kettering.

Bamford	£4,650	0	0
Smith & Bunning	4,633	11	6
Norris	4,183	5	0
PHILLIPS & SLOW (*accepted*)	3,890	17	0

All of Kettering.

LONDON.

For installing a Lancashire boiler at the trade school for girls, Hammersmith, for the London County Council.

Tetlow Bros.	£747	10	0
Clayton, Son & Co.	716	0	0
Galloways, Ltd.	709	0	0
Spurr, Inman & Co.	700	0	0
Tinker, Shenton & Co.	700	0	0
Adamson & Co.	692	0	0
Tinkers, Ltd.	685	0	0
Yates & Thom	677	0	0
J. THOMPSON, Ettingshall Boiler Works, Wolverhampton (*recommended*)	635	0	0

For alterations to the police stations at Paddington, W. Mr. J. DIXON BUTLER, F.R.I.B.A., architect, New Scotland Yard, S.W.

Ashby & Horner	£14,914	0	0
Prestige & Co.	14,693	0	0
Godson & Sons	14,584	0	0
Perry & Co.	14,232	0	0
F. & H. Higgs	14,130	0	0
Minter	14,075	0	0
Taylor	13,926	0	0
McCormick & Sons	13,892	0	0
Dove Bros.	13,783	0	0
Sabey & Sons	13,755	0	0
Sheffield Bros.	13,724	0	0
Roome & Co.	13,701	0	0
C. Wall, Ltd.	13,691	0	0
Holliday & Greenwood	13,644	0	0
J. Garlick, Ltd.	13,533	0	0
Willmott & Sons	13,477	0	0
Dickens	13,438	0	0
Patman & Fotheringham	13,388	0	0
Adamson & Sons	13,265	0	0

SOUTHGATE.

For the erection of a Council school in Tottenhall Road, Southgate, for the County Council of Middlesex. Mr. H. G. CROTHALL, F.R.I.B.A., architect to the Education Committee.

Willmott & Sons	£6,173	0	0
Porter	5,960	0	0
Neal	5,805	0	0
Brand, Pettit & Co.	5,784	0	0
A. & B. Hanson	5,750	0	0
Lawrence & Son	5,587	0	0
Dickens	5,555	0	0
Knight & Son	5,550	0	0
Lacey	5,550	0	0
Mattock Bros.	5,477	0	0
ALBERT MONK, Lower Edmonton (*recommended*)	5,383	0	0

TODMORDEN.

For erection and completion of bandstand, three shelters, and bowling-green pavilion at the Centre Vale Park. Mr. J. A. HEAP, borough engineer, Todmorden. Quantities by MR. HEAP.

Halstead Bros., Eastwood, Todmorden	£1,100	0	0

RUSSIAN CEMENT INDUSTRY.

THE *Nachrichten für Handel* (Berlin) of February 14 contains a report from the German Consul-General in St. Petersburg, in which it is stated that the building activity and the consequent cement consumption are characteristic of Russia's economic development. In 1912 the total consumption of cement was about 10,000,000 barrels (1 barrel = 360 lb.), whilst the consumption last year is estimated at 12,000,000 barrels. In spite of great efforts made by Russian producers, the home production has, as yet, always been insufficient to supply the extraordinarily growing demand, and so an increase of cement imports has taken place. In 1911 the imports were 9,082,000 pouds; in 1912, 11,090,000 pouds; and in the first eleven months of 1913, 11,004,000 pouds, compared with 10,547,000 pouds for the corresponding period of 1912.

Not till the autumn of 1913 was there any stagnation in the building trade, due to shortness of money and depression on the Stock Exchange, which was particularly noticeable in the St. Petersburg and Moscow districts, and exercised a baneful influence on the cement industry. In addition, the storage conditions in St. Petersburg were unfortunate, and so foreign and home produce had to be disposed of at poor prices.

The increased building activity has not been confined to Government orders, as great development has taken place in private enterprises. Not only in the big centres, but also in the smaller towns, old buildings have been demolished and new ones put up, and factories have been erected and enlarged. The use of ferro-concrete has also increased considerably of late. Great efforts are being made to demolish the old wood and mud huts in the country districts, and to erect in their stead fireproof houses, which will introduce a great demand for cement tiles. The cement industry received a decided impetus from the Government during the year, as there has been no lack of orders for harbour works, railway buildings, and drainage works.

In Siberia and the Far East, where the consumption of cement is almost exclusively confined to Government buildings, the Siberian works were able to dispose of their output.

It is expected that in the future Russia will be able to be quite independent of foreign cement, as by the end of 1914 it is anticipated that the number of Russian works will be double the number at the end of 1912. Hopes are entertained of Russia not only being able to supply her own needs, but also to be in a position to have a considerable export. As it is, there is a certain export to Egypt, Mexico, and some other countries. However, for this year the importation of foreign cement is expected to be large, especially in the north-west, where its great demand for marine works, like the military harbour at Reval, cannot be satisfied by the Russian industry.

The number of works in use, together with their estimated production in barrels, during 1914 is as follows: Poland, 10 works (2,290,000); in the West, 5 (1,180,000); Baltic Provinces, 3 (1,600,000); St. Petersburg, 3 (1,200,000); Moscow, 8 (3,480,000); Don Basin, 12 (2,535,000); Caucasus (including Baku), 14 (4,760,000); Crimea, 1 (200,000); Volga, 5 (2,600,000); Asiatic Russia, 6 (1,325,000); Finland, 1 (250,000); total, 68 works with an estimated annual production of 21,420,000 barrels.

The South Russian Works, with few exceptions, have all joined a syndicate of Russian Cement Manufacturers, having its headquarters in St. Petersburg, whilst there are still independent unions in Poland, and temporary ones in St. Petersburg and Moscow.

1,000,000 pouds = 16,000 tons (about).

THE Governors of the West-End Hospital for Diseases of the Nervous System, Welbeck Street, W., have two sites under consideration for the proposed re-erection—viz., one at Nottingham Street, and one at Vincent Square, Westminster. It is estimated that the cost will be about £36,000, towards which nearly £19,000 is at present available.

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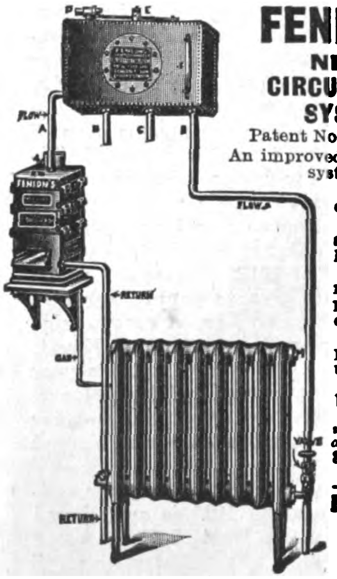

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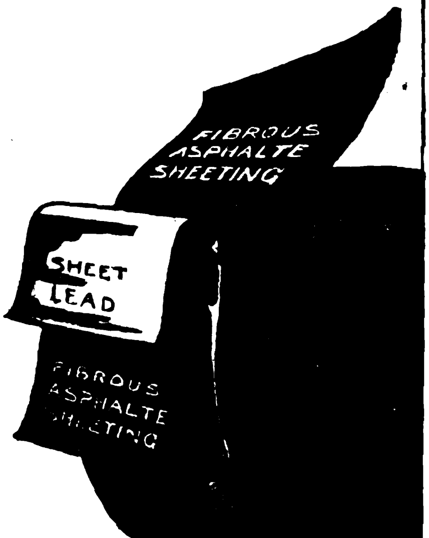

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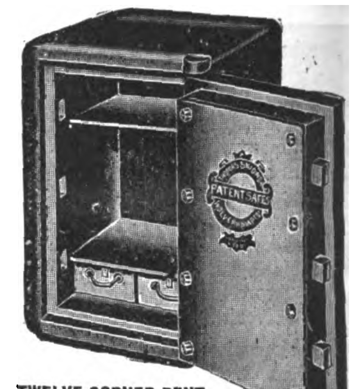

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Telephone No.: 1165 Willesden. ESTABLISHED 1870. Telegrams: "Impermeable, London."

MANCHESTER BUILDING EXHIBITION.

THE eighth Manchester Building Trades Exhibition was opened on Tuesday last at the City Exhibition Hall, Deansgate, by the Lord Mayor of Manchester, the Right Hon. D. McCabe, J.P. The initial ceremony was presided over by Mr. Alderman Wilson, who referred to the value of previous local building exhibitions by reason of the impetus they gave to the industry. The Lord Mayor, in his speech, made special reference to the city's housing question, and said that those manufacturers who contributed to the provision of comfortable houses at a reasonable cost were deserving of every support. People wanted to get houses at reasonable prices with accommodation enough to live decently in—also houses that would have some artistic merit about them.

Mr. C. H. Luke, the organising director, is to be congratulated on having gathered together at Deansgate an exhibition well worthy of the attention of architects, surveyors, and builders. It is generally considered to be more representative than that of two years ago. There are nearly 100 stands. Considerations of time and space prevent us giving this week any account of more than a few of these.

The British Fibrocement Works, Erith, may be said to have established a firm footing in the city when they obtained the contract for roofing the big stand of the Manchester United Football Club with "Fibrocement" slates. These asbestos slates are shown on Stands 54-55 in a building roofed in two styles and colours, and which is lined internally and externally with patent "Fibrocement" fireproof sheets, together with skirtings and mouldings. It is worth noting that the material is British made—an advantage not enjoyed by all its competitors.

The Christie Patent Stone Co., of Stretford, have an assortment of their stonework in both useful and ornamental forms, the latter including a garden balustrade and a bay window. If quarried stone should be unfortunately of a prohibitive cost it is well to know of a cheap substitute like the Christie Stone, which is well out of the experimental stage. A feature of the exhibit is a new form of rough-cast made with white Portland cement, for which many virtues are claimed.

"As used at Buckingham Palace" might well be displayed over Stand 51, where the appliances of the *Patent Rapid Scaffold Tie Company, Ltd.*, may be inspected under test. The refronting of the royal residence was carried out in a way that reflects credit on everyone associated with it; and among the aids employed we certainly include the Scaffixer ties of this company. They have been for some years past finding much favour among contractors great and small. A fairly recent development of usefulness was the application of the ties to flat centering. No. 51 is essentially a stand at which the builder and contractor may profitably make a long pause and carefully ponder whether the new method of scaffold tieing is not safer, quicker, cheaper, and generally more desirable than the old. He will also be able to inspect the products of sherardizing—a process of dry galvanising by which iron and steel articles are rendered rust-proof.

Bell's United Asbestos Company, Ltd., were in the happy position a few weeks ago of having their tender accepted by the War Office for the supply during the next three years of "Poilite" asbestos cement roofing slates, wall and ceiling sheets, &c. Since then the sheets have come triumphantly through a severe ordeal by fire at Blyth, where, according to the owner, they confined the conflagration to the ground floor of some large new premises, thus saving the whole from being burnt down, as was the case with the adjoining older premises. This admirable material is now manufactured at Harefield, Middlesex. The sheets may be obtained in any size up to 12 feet by 4 feet, and from $\frac{5}{32}$ inch to 1 inch thick. The tiles usually specified are $\frac{3}{16}$ inch thick. On the stand "Poilite" may be seen as applied to walls, roofs, and ceilings—that is to say, to both inside and outside work.

Messrs. Horrell & Bowman, range and grate makers, Birmingham, should reap a rich harvest from the extraordinary attention now being devoted, both in and out of Manchester, to the subject of housing. At Stand No. 10 they have a triple exhibit which is both interesting and important. Pride of place may be given to the "Triplex" patent combination sitting-room grate, which under the happy disguise of an open fire as in a living-room does all the work of a kitchen range equipped with two ovens and a boiler. The doors of the ovens, being filled in with glazed tiling to match the rest of the surround, are smart as well as unobtrusive. A sliding regulator fitted to the open fire flue gives a forced draught to the ovens or boiler when necessary, and thereby makes it equally possible to bake bread or to have per hour a couple of hot baths. In appearance the grate is distinctly satisfactory, and suitable for good-class bungalows, flats, or private houses. The same makers' "Openfire" ranges are intended for cottages, artisans' dwellings, tenements, and other occasions where economy is the primary consideration. Not only is the first cost low, but they are designed to give the maximum heat to the room, oven, and boiler for a minimum of coal consumption. Lastly, we may mention the "Adaptable" fire, for fitting to old-pattern grates.

"Willett" petrol air-gas generators of various sizes are displayed by *The Willett Light*, Sloane Square, S.W., on Stand No. 23. These machines can use either heavy or light spirit and produce either a rich or a poor gas; they are compact, simple, and easily portable. A noticeable feature of this system is the absence of a gas-holder, the generators producing just sufficient gas to meet the immediate demand. The great claims for the "Willett" lighting are simplicity, efficiency, and absolute safety.

Messrs. J. H. Heathman & Co., of Parsons Green, London, are exhibiting examples of their telescopic and plain ladders, trestles, and steps, as well as their scaffold trestles and ladder towers and portable folding scaffolds. The new pattern of Heathman's patent ladder-lock is a great improvement upon the earlier design, as it has been materially strengthened and rendered proof against the most haphazard treatment from builders' labourers and others.

Vulcanite, Ltd., here feature their Patent Vulcanite Lining and Patent Vulcanite Roofing. Both are shown by means of models, which permit of close examination. Of both it may be said that they have rendered yeoman service in most parts of the world. The makers claim that their lining for waterproofing swimming baths, reservoirs, tanks, is the only one of its kind "that is not affected by settlement." A third demonstration is that of the "Bituna" pure bitumen damp-course. Many other important specialities are also to be seen on this stand.

Messrs. Vernon & Co., 79 Bridge Street, Manchester, are showing, in addition to the exhibits mentioned in our last week's issue, at their stands, Nos. 6 and 7, a "Vernon" No. 1 combination sitting-room gas and coal range fitted with barless grate. The oven is enamelled throughout, thus giving perfect cleanliness, and the side and back covings are artistically tiled. Several examples may be seen of hob grates and mantels in Elizabethan, Jacobean, and Georgian styles.

As usual, the *British Portland Cement Manufacturers, Ltd.*, have brought together a dignified representation of their great business. With such a material and with such resources it must be difficult to know where to stop. For the purposes to which Portland cement is now put are legion, while the aids to its manufacture are no less numerous. On the stand is a small building in hollow concrete blocks made on a Winget machine and lined as well as roofed with "Poilite." Samples are shown of the material in its various stages, as well as some of the appliances necessarily used before chalk marl can be converted into the best Portland cement.

The Stimex Gas Stove Company, Ltd., 169 Balham High Road, S.W., are showing a Stimex Patent Hygienic Gas Range embodying all their latest improvements. It has an open fire, oven without burners, hot chamber for heating plates, and a high-pressure gas boiler. The Hygienic Cookers are a modification of this range. Another exhibit is their Patent Hot-water Circulator.

Speaker's "Eternit" Pavilion cleverly demonstrates the ease with which "Eternit" slates and sheets may be fixed to any form of steel frame by their patented method. In imitation of half-timber work "Eternit" cover slips may be fixed over the joints of the wall slabs and then stained to the colour of wood. The slates are light, weatherproof, and indestructible.

The Manchester Ship Canal Portland Cement Manufacturers, Ltd., exhibit samples of the raw materials from which their "England" Brand cement is made. The company get the limestone and shale from their own quarries at Little Ormes Head and Colwyn Bay respectively. On the stand are various products of "England" cement.

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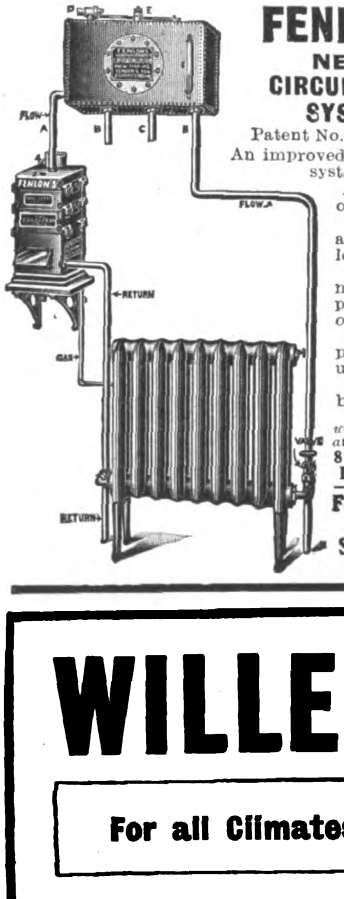

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Telephone No.: 1165 Willesden. ESTABLISHED 1870. Telegrams: "Impermeable, London."

LONDON MASTER BUILDERS' ASSOCIATION.

THE ordinary monthly meeting of the Council was held on Thursday, February 19, at the offices, Koh-i-Noor House, Kingsway, W.C., the President, Mr. Walter Lawrence, jun., being in the chair.

The reports of the Special Council and committees were read and adopted.

The result of three meetings of the Conciliation Board held on February 13 was reported. These Conciliation Board meetings were called to discuss alleged breaches of the Working Rule Agreements.

Complaints reached the Association that the plumbers, crane drivers and mill sawyers and wood-cutting machinists, with whom working agreements are in existence, had been withdrawn from their employment during the previous week. This Association, acting in conformity with the agreements, called the Conciliation Boards together for the purpose of considering the cases. There are three Boards, each composed of three employers and three operatives, and in each case the following resolution was carried unanimously:—

"That the action of the —— Society in calling out certain of their members without the question having been referred to the Conciliation Board is contrary to the meaning and intent of the conciliation rule of the working rule agreement existing between the London Master Builders' Association and the —— Society." The meaning of this resolution is that the men admit that they have broken the agreements.

The position re the trade dispute was considered, and it was resolved, in response to a communication received from Mr. C. W. Bowerman, M.P., Secretary of the Parliamentary Committee of the Trades Union Congress, that his request for a conference made on behalf of the various trade societies with whom the Association have or recently had working rule agreements should be acceded to, and the date for the same was fixed for Monday, February 23.

The returns made by members of men signing the undertaking and resuming work were considered very satisfactory, more than 1,000 additional men having returned to work during the week.

New members were elected and further applications for membership received.

THE LIGHTING, HEATING AND VENTILATION OF FACTORIES AND WORKSHOPS.[*]

By Professor VIVIAN B. LEWES, F.I.C., F.C.S.

THE difference in size between small rooms and large is a source of trouble in dealing with the hygiene of lighting, heating, and ventilation even of our homes, and when we come to attempting to deal with factories and workshops the trouble is increased a thousandfold, as the radiant heat, which is now recognised as the only truly sanitary method of heating a dwelling-room, could never be made effectively to warm a big workshop with its large area of window space and external wall.

In our homes a room 20 feet by 30 feet by 12 feet is heated effectively by a modern gas stove, because it forms a cheerful radiant centre, round which we can gather if there is a feeling of chill, and the fact that there is a difference in temperature in the different parts of the room is itself a safeguard to health; the air is always moving, and the stagnation of air that is fatal to health is avoided. Moreover, the radiations from the fire warm the floor and the furniture, the lower portions of our bodies are kept warmer than our heads, we get cool air to breathe, and cold feet are avoided.

In the factory and workshop, on the other hand, centres of warmth are not desirable; no congregation of the workers at any point is permissible. The temperature conditions should be such that, when starting in the morning, there shall be no risk of chill to the workers, but the temperature must never be high enough, throughout the working hours, to produce lassitude and fatigue, and, above all, the air must be kept in motion to prevent the emanations entangled in the clothing of the sweating workers from blanketing the skin and preventing the natural actions which tend to efficient work.

The body will regulate its own temperature during the hours of labour, if only it is given the chance, by keeping down the excess of moisture in the air and at the same time keeping it moving.

It must be remembered that the initial temperature required will vary with the kind of work done. If the work involves considerable physical effort, a slight initial warming to prevent chill before the body warms itself is all that is needed, and any considerable continuous warming would act injuriously upon the workers; whilst, if the work was of a sedentary character, a temperature of 60° Fahr. should be maintained.

In the past, the economy of the flueless gas stove has been a great temptation to use it in many a crowded workshop, but although all the heat units in the gas can be transferred in this way to the air of the workshop, the taint of traces of products of incomplete combustion and the fact that the combustion of a cubic foot of gas gives over a cubic foot of water vapour are an absolute condemnation of the practice.

The amount of water vapour in a humid climate like ours is one of its great drawbacks, and to load it further with water vapour and the other products of combustion is to reduce vitality and kill good work.

Radiant heat being impossible to obtain, convected heat is the only source of warming we can employ for large rooms, but it should be convected from surfaces at a comparatively low temperature, never exceeding 212° Fahr., and hot-water pipes and coils, with the water circulating from a coke or gas heated boiler—the latter for preference on account of the ease of starting and regulation—is the best method to employ.

The temperature of the air should never exceed 60° Fahr., and when it reaches 58° Fahr. there should be a thermostatic device to start fans, which would keep the air at the body level in motion.

If the so-called gas radiators are used, the length of convecting flue must be such as to remove most of the heat from the products of combustion and then discharge them into the open air; never into the air of the workshop.

Turning to the lighting of our workshops and factories, we find the same diversity of needs that makes it impossible to lay down any hard and fast rule for the heating. The workers in cotton mills need a very high degree of illumination if the weavers are to do their work efficiently, while there are many other trades that require less; but it has always seemed to me that no matter what the trade is a large workshop requires two perfectly distinct methods of lighting—a general illumination that enables the whole of the floor space and machinery to be seen perfectly, and the local illumination concentrated on the special work each man is carrying out.

If you rely on the general scheme of illumination the light has to be so intense and so low down that the glare wearies the eye and no rest can be obtained for it; dark shadows are produced, and it is impossible to arrange properly the position of the light to fit all the work that is being done. If, on the other hand, local illumination only is employed, to the eye tired by the highly illuminated object on which work is being done, the spaces between the illuminated zones appear to be in darkness, and many accidents happen in consequence from the dazed worker tripping over some obstruction.

With a well-lighted workshop or factory using a dual scheme of lighting, the general lights can be arranged well up above the angle of vision, while the local lights are shaded from the workman's eye, and he sees only the illumination of the object on which he is working.

In such cases the general lights can be arranged equidistant from each other, while the local lights are made to fit the special need; but if you see a workshop in which the general lighting is depended on entirely, and the burners arranged with mathematical exactness, you may be pretty sure it is a bad scheme of illumination. No hard and fast position of lights is possible in most workshops; the position and intensity of the light must be made to fit the work.

There is not the slightest doubt that bad lighting means accidents, bad work, and strained eyesight, but it is undoubtedly also a fact that the more light we have the more we want, and it is a perfectly debatable point as to whether the greater and greater amount of light which we are accustoming ourselves to use is not having a serious effect upon the eyesight, and that in days to come we may not have to admit that Nature resents excess in light as in everything else. We should never forget this, and also that proper lighting is much more a question of proper arrangements of lights than of candle-power.

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[*] **A Paper read at a Conference of Manufacturers held at the National Gas Congress and Exhibition.**

The manufacturer soon finds, by experience, that a coat of whitewash on his walls is a very important factor in illumination.

When we come to the question of ventilation we are confronted by the fact that there is no more powerful engine of ventilation than the flame of burning gas, and that its power of setting air in motion is one that is doing much for the health of the gas consumer. In the factory and workshop it can be made even more efficient than in the home, as the general source of light can be a ring of inverted incandescent mantles using either high or low pressure gas, fitted in a sun-burner case, with tube that will bring it down to the required position in the workshop. At the ceiling level this tube should pass inside a wider one, protected at the outlet from back draught and open to the interior of the room.

The up-rush of the products of combustion in the sun-burner tube discharging into this outer tube acts in the same way as the jet of coal gas in a Bunsen burner, and sucks in air through the opening between the two tubes, thus drawing off a large volume of air from the ceiling space, without causing too great a rush over the mantles. Fresh cool air may then be sucked in by Tobin tubes, not opening above the head level, but about two feet above the floor, so that the head may be kept cool but no chill given to the lower extremities. When the gas was not alight, flues or fans would have to be used.

Where coal gas is available there is no doubt but that the heating, lighting, and ventilating of our workshops and factories can be carried out efficiently by its aid, and in the future its adoption for this purpose should aid its progress in industrial districts.

NORTHERN ARCHITECTURAL ASSOCIATION.

A MEETING of the Northern Architectural Association was held on the 4th inst. at 6 Higham Place, Newcastle, Mr. H. C. Charlewood, F.R.I.B.A., presiding. The Chairman read the award of the assessors, Messrs. F. H. Rich and J. Oswald, in connection with the Glover Travelling Studentship and the Students' Prize Competitions as follows: Glover Travelling Studentship, Mr. H. St. John Harrison, Newcastle; measured drawings, age limit twenty-five years, Mr. George H. Gray, North Shields; sketches, age limit twenty-five years, Mr. H. St. John Harrison, Newcastle; architectural sketches and drawings, Mr. Wm. J. Reed, Blaydon. The Royal Institute of British Architects' Prize Drawings will be on view at Higham Place on Wednesday, Thursday, and Friday next week.

ESPERANTO FOR ENGINEERS.

ON March 2, at a meeting of the Society of Engineers (Incorporated), a paper entitled "Esperanto: an International Language for Engineers," was read by Mr. T. J. Gueritte, B.Sc., M.S.E., M.Soc.C.E. (France). The author pointed out that there were four main reasons for the adoption by scientific and technical men of a universal language: (1) That modern science is to a considerable degree *specialised* and *international*. Engineers, of whatever nationality, are obliged to study works by authors of other nations; (2) that in the actual carrying out of engineering works or the pursuit of research abroad one comes in contact with people of diverse nationalities, and it is a difficult and interminable task to master a number of different languages; (3) that the work of international congresses would be greatly facilitated and their expense reduced; (4) that the present high prices of technical books would be reduced, because if written in an international language they would have a much wider circulation, and translations would not be necessary.

That an international scientific language is possible is shown by the fact that at one time Latin was the medium of international exchange of ideas. This language is both difficult to learn and unadaptable to changing conditions. A modern national language, such as English or French, would never be generally accepted as a "world language," on account of irregularities of formation and pronunciation and international jealousy. There is no probability of any one language becoming the universal language of all men, but an auxiliary language for intercommunication between scientists is practicable. Esperanto is such a language, and its use is possible because (*a*) it is a living language, (*b*) it is international and neutral, (*c*) it is learnt with the least possible difficulty, (*d*) it lends itself to the technical requirements of every science, (*e*) it has been used most successfully in public discussions at international congresses, (*f*) it is capable of reducing the cost of international books.

VARIETIES.

THE Tenby Town Council are considering a scheme for erection at a cost of £3,000 of workmen's dwellings.

THE Primrose League at Southend-on-Sea are contemplating the erection of a hall and club premises.

A SCHEME is on foot for the development of the sea front at Pwllheli.

SIR HUGH LANE has been appointed Director of the National Gallery of Ireland in the room of Sir Walter Armstrong, resigned.

MESSRS. HARRISON & COX, of Colmore Row, Birmingham, are the architects for the new schools and Roman Catholic Church about to be erected at Foleshill, Coventry.

THE Chester-le-Street Urban District Council propose to seek powers to borrow the sum of £50,000 for the purpose of building some 200 houses.

THE London Hospital Governors have received £10,000 from the Grocers' Company for the erection of special wards for the treatment of syphilis. Plans have also been drawn up for the building of aural wards which will contain thirty beds, and a site has been selected for a hostel for resident doctors, which will set free rooms for the extension of various departments.

THE London County Council twelve months ago decided to undertake the development of the second and final part of Section C of the Norbury estate, and sanctioned expenditure not exceeding £74,000 in respect of the erection of cottages and shops on the land. Building operations can shortly be commenced, and tenders are shortly to be invited from selected firms for the erection of 128 cottages.

AT the Victoria and Albert Museum a collection of tapestries, carpets, and furniture from Boughton House, Kettering, lent by the Earl of Dalkeith, together with three tapestries after Mantegna's "Triumph of Cæsar" at Hampton Court, lent by the Duke of Buccleuch, was opened in the North Court on Monday last. It will be open to the public until the end of May.

MR. MATHEW G. MARTINSON has been appointed architect to the Northumberland Education Committee in place of Mr. S. Topham Forrest, who was recently selected as architect to the Essex County Council. Mr. Martinson has acted as chief architectural assistant to the county surveyor since 1904. The salary would be £250 a year, rising by annual increments of £25 to £300.

MR. E. R. MATTHEWS, the Borough Engineer of Bridlington, has been appointed to the Chadwick Chair of Municipal Engineering in the University of London. Recently he was one of the selected candidates from whom the appointment of City Engineer of Cape Town was to be made, the result of this being not yet known. Professor Matthews intends, in addition to the duties of the professorship, to practise at Westminster as a consulting engineer.

MRS. MARY F. RAPHAEL, a constant exhibitor at the Royal Academy, and an artist whose works we have had the pleasure of reviewing from time to time in our columns, has strayed into fresh fields and new pastures in her novel "Phœbe Maroon" (shortly to be issued by Messrs. Heath, Cranton & Ouseley, Ltd.). It portrays some chapters in the life of a very unconventional but charming artist's model, and the literary style of the book bears evidence of its author being not only an artist, but a lady of keen observation.

AT the meeting of the Kensington Borough Council on Tuesday, Sir Aston Webb, C.B., R.A., strongly opposed a proposal to sanction the Edwardes Square re-development scheme. He said it would be disastrous to the amenities of that part of Kensington if the mammoth buildings were erected. He moved that the scheme be referred to the Special Improvement Committee about to be formed. The motion was seconded by Councillor Moor-Radford, and was carried by a large majority. The scheme includes the erection of four blocks of flats on the site of the existing houses and gardens of Earl's Terrace at a cost of about £240,000.

THE Northumberland Education Committee are faced with an approximate expenditure of £100,000 in the near future on new buildings and improvements. The Committee have in course of construction two large elementary schools and two secondary schools, the former at Ponteland and Prudhoe and the latter at Wallsend and Whitley Bay. For two schools at Earsdon and Newbiggin contracts have been let. These six will cost £40,391. For three new schools at Hexham, Monkseaton and North Seaton plans are prepared, and their estimated cost is £14,100. Eight schools, for which plans are not yet prepared, are bound to come before the Committee. With a proposed large school at Berwick, a further expenditure of £40,000 is estimated.

THE

Architect and Contract Reporter.

FRIDAY, MARCH 13, 1914.

EDITORIAL NOTICES.

The Editor will always be pleased to examine drawings or articles with a view to publication, but cannot be responsible for the safety of those sent, though every reasonable care will be taken. Contributors desiring payment should clearly state their wishes. No payment will be made until after publication, and a commission to prepare articles or drawings does not necessarily imply acceptance or approval.

No communication can be inserted unless authenticated by the name and address of the writer—not in every case for publication, but as a guarantee of good faith.

We have upon our staff a very eminent Barrister, who will be glad to answer in the columns of this paper any legal question that may be of interest to our readers. All letters must be addressed "Legal Adviser," Office of "The Architect," Imperial Buildings, Ludgate Circus, London, E.C.

The Editor will be glad to receive from Architects in London and the Provinces results of Competitions and Tenders and other particulars of Works in progress in which they may be interested.

TENDERS, ETC.

⁂ *As great disappointment is frequently expressed at the nonappearance of Contracts Open, Tenders, &c., it is particularly requested that information of this description be forwarded to the Office, Imperial Buildings, Ludgate Circus, London, E.C., not later than 2 p.m. on Thursdays.*

COMPETITIONS OPEN.

Canada (Ottawa).—April 2.—Architects are invited to submit by April 2 sketch designs in a preliminary competition for the erection of Departmental and Courts Buildings at Ottawa, Ontario. From the designs submitted six will be chosen by the assessors to take part in a final competition, for which the five unsuccessful competitors will each receive an honorarium of 3,000 dollars. The competition is limited to British subjects practising in the British Empire. The Government has appointed Mr. T. E. Collcutt, Mr. J. H. G. Russell, and Mr. J. O. Marchand as assessors. Conditions may be obtained from the High Commissioner for Canada, 17 Victoria Street, London, S.W., and Mr. R. C. Desrochers, secretary, Department of Public Works, Ottawa.

Glasgow.—May 1.—The Corporation are prepared to receive from sculptors competitive models and relative offers for four groups of symbolical sculpture to be placed on the abutments of the new bridge at Radnor Street, Kelvingrove Park, Glasgow. Copies of the conditions of the competition may be obtained on application to Mr. J. Lindsay, town clerk, City Chambers, Glasgow.

London.—May 4.—The Bridge House Estates Committee of the Corporation of the City of London invite designs from British architects for the architectural treatment of the new St. Paul's Bridge. The conditions of the competition and instructions may be obtained upon payment of a deposit of £3 3s., which will be returned on receipt of a design in accordance with the conditions. A premium of £300 is offered for the design which may be placed first, and further premiums of £200 and £100 respectively. The committee will be advised by Sir William Emerson, P.P.R.I.B.A., as assessor, whose decision will govern the award of the premiums and be final and binding in all stages of the competition. The Town Clerk, Guildhall, London, E.C.

Mold.—The Urban District Council invite architects to submit plans, &c., for a fire station and caretaker's house, to be erected at Earl Road. Further particulars may be obtained from Mr. D. Thomas, surveyor, Town Hall, Mold.

CONTRACTS OPEN.

Aspatria.—March 21.—For the various trades required in erection of twenty workmen's dwellings at Aspatria, Cumberland, for the Aspatria Urban District Council. Send names by March 21 to Mr. G. Armstrong, architect, 24 Bank Street, Carlisle.

Barlby.—March 28.—For erection of an additional classroom at Barlby Council school, near Selby, for the East Riding of Yorkshire County Council. Deposit £1 1s. The Building Surveyor, County Hall, Beverley.

Blackpool.—March 18.—For alterations at 102 Highfield Road, South Shore, for its conversion into a reading-room, for the Library Committee. Mr. J. S. Brodie, borough surveyor, Municipal Buildings, Blackpool.

Blackpool.—March 18.—For works, &c., required in the extension of Waterloo Road Station, South Shore, for the Lancashire and Yorkshire and London and North-Western Joint Railways. The Engineer's Office, Hunt's Bank, Manchester.

Blaina.—March 17.—For erection of a manual training centre, for the Monmouthshire Education Committee. Deposit £1 1s. Mr. John Bain, F.R.I.B.A., County Council Offices, Newport, Mon.

Bridgwater.—March 24.—For pulling down and removal of the existing buildings, clearing site, erection of coach-house, lairage, slaughter-house, new offices, and sundry alterations to the dwelling-house known as 18 High Street, for the Town Council. The Borough Surveyor, Municipal Buildings, Bridgwater.

Bristol.—March 19.—For alterations and additions to the premises at 112 Avondale Road, St. George, for the Guardians. Mr. J. J. Simpson, clerk, St. Peter's Hospital, Bristol.

Bury St. Edmunds.—March 16.—For erection of a coal store, Tayfen Road, for the Bury St. Edmunds Gas Co., Ltd. Send names by March 16 to Mr. S. Naish, M.S.A., architect, 7 Hatter Street, Bury St. Edmunds.

Bury St. Edmunds.—March 16.—For the reinstatement of 53 Abbeygate Street. Send names by March 16 to Mr. S. Naish, M.S.A., architect, 7 Hatter Street, Bury St. Edmunds.

Canterbury.—March 20.—For erection of hall and schools adjoining the Baptist Church, St. George's Place. Messrs. Jennings & Gray, architects, 4 St. Margaret's Street, Canterbury. (See advertisement.)

(*Continued on page 15*)

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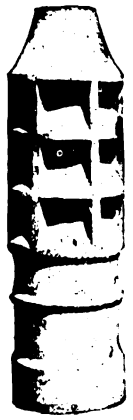

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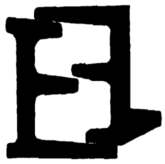

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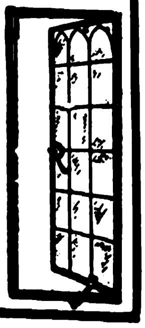

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Chesham.—March 25.—For erection and completion of twenty workmen's dwellings, together with all fencing, drainage, &c., upon land in Brockhurst Road, for the Urban District Council. Mr. P. C. Dormer, engineer and surveyor, Council Offices, Chesham.

Churwell.—March 16.—For the various works required in erection of drying-room at Millshaw Leather Works, Churwell, near Leeds, for Messrs. W. L. Ingle, Ltd. Mr. T. A. Buttery, Licentiate R.I.B.A., architect and surveyor, Queen Street, Morley, and 1 Basinghall Street, Leeds.

Clitheroe.—For erection and completion of warehouse, hall, &c., at Clitheroe, for the Committee of the Clitheroe Equitable Co-operative Society, Ltd. Deposit £1 1*s.* Mr. F. E. L. Harris, architect, the Co-operative Wholesale Society, Ltd., 1 Balloon Street, Manchester.

Coniston (near Hull).—March 14.—For the whole of the trades except painting for the erection of dwelling-house at Coniston, near Hull, for Mr. W. Darley. Mr. Darley, Coniston.

Croydon.—March 23.—For the following work, for the Town Council: (1) Building of new sub-station ("I"), Addiscombe Grove, Croydon; (2) additions to the existing sub-station ("F"), Drummond Road, Croydon. The Electrical Engineer, Electricity Works, Factory Lane, Croydon.

Croydon.—March 23.—For the erection of a gatehouse in Beddington Lane, for the Town Council. Deposit £1 1*s.* The Borough Engineer's Office, Town Hall, Croydon.

Cwmffrwdoer (near Pontypool).—March 17.—For extensions to the infants' school, for the Monmouthshire County Council. Deposit £1 1*s.* Mr. John Bain, F.R.I.B.A., County Council Offices, Newport, Mon.

Dawley (Salop).—March 28.—For the repair of the external portion of Dawley Parish Church, its tower, roof, &c. Messrs. Fleeming, Hickman & Fleeming, Market Square, Wellington.

Dewsbury.—For the excavator, mason and bricklayer's, carpenter's and joiner's, plumber and glazier's, slater's, painter's, and patent glazier's work required in erection of dyehouse, dryhouse, and warehouse at Albert Mill, Saville Town, for Messrs. Porritt, Senior & Co., comprising about 2,200 square yards of flooring. Messrs. Joseph Firth & Son, architects, 67 Vulcan Road, Dewsbury.

Dorchester.—March 16.—For erection of a balcony and verandah at the Dorset County Hospital, for the Committee. Mr. F. T. Maltby, A.M.I.C.E., architect and surveyor, Dorchester.

Dudley.—March 14.—For the whole or part of the work entailed by alterations and enlargements at the Wolverhampton Street, Park, and Kate's Hill schools, for the Dudley Education Committee. Send names, together with £1 1*s.* deposit, by March 14, to Mr. J. M. Wynne, director of education, Education Offices, Dudley.

Enfield.—March 25.—For alterations to the laundry at the Enfield Workhouse, Chase Side, for the Guardians of Edmonton Union. Mr. J. C. S. Mummery, architect, 13 Fitzroy Square, W.

Finchley.—March 23.—For demolition of certain buildings at Brook Farm, for the Urban District Council. Mr. C. J. Jenkin, M.I.C.E., engineer, Council Offices, Finchley, N.

Golcar.—March 16.—For the various trades (except carpenters and joiners) required in erection of four dwelling-houses in Swallow Lane. Mr. Arthur Shaw, architect, Golcar.

Grimsby.—For erection of Territorial barracks, Augusta Street, for the Lincolnshire Territorial Force Association. Mr. A. Easton, architect, 5 Colonial Chambers, Princes Dock Street, Hull.

Halifax.—March 21.—For any or all of the works required in erection of a house at West Vale. Messrs. Holton & Fox, architects and surveyors, Corporation Street, Dewsbury.

Heckmondwike.—March 14.—For any or all of the work required in erection of a church in Bath Road. Messrs. Holton & Fox, architects and surveyors, Corporation Street, Dewsbury.

Horbury.—March 17.—For the various works required in erection of two houses, Jenkyn Road, Horbury, Yorks. Mr. W. T. Turner, architect, George Chambers, Market Hall, Barnsley.

Horbling.—March 21.—For alterations and additions to Brown's School, Horbling, Lincs. Deposit £1 1*s.* Mr. R. Wadsley, architect, Billingborough.

Huddersfield.—March 16.—For any of the various works required in erection of detached house, Avenues Estate, Fartown, Yorks. Send names by March 16 to Messrs. J. H. Hall & Son, architects, Exchange, Huddersfield.

Huddersfield.—March 17.—For any or all trades required in erection of a detached dwelling-house in Allison Drive, Fartown. Messrs. J. Kirk & Sons, architects, Market Place, Huddersfield.

Huddersfield.—March 20.—For erection of various buildings, roads, and drainage in connection with a hospital for tuberculosis at Bradley (including a children's pavilion, the gift of Mr. J. Sykes, J.P.), for the Corporation. Alternative tenders are required (1) in concrete; (2) in brick; (3) in stone. Deposit £2 2*s.* Mr. K. F. Campbell, M.I.C.E., M.I.E.E., borough engineer, Huddersfield.

Huddersfield.—March 20.—For various works required in erection of twenty-five workmen's dwellings at Bradley and twenty-four workmen's dwellings at Salendine Nook, for the Corporation. Alternative tenders are required (1) in stone; (2) in concrete. Mr. K. F. Campbell, M.I.C.E., borough engineer and surveyor, 1 Peel Street, Huddersfield.

Hull.—March 21.—For the necessary work in connection with erection of two verandahs to the infirmary blocks at the Hull City Asylum, Willerby, for the Committee of Visitors. Deposit £2 2*s.* Mr. J. H. Hirst, city architect, Guildhall, Hull.

Ireland.—March 18.—For erection of a manse at Antrim for the Committee of the Unitarian Church. (Mr. W. D. R. Taggart, architect, 2 Wellington Place, Belfast.) Messrs. M'Carthy & Brookes, Scottish Provident Buildings, Belfast.

Ireland.—March 18.—For laying a granolithic floor in the goods shed extension, north end of York Dock, Belfast, for the Belfast Harbour Commissioners. Mr. W. R. Kelly, M.I.C.E., harbour engineer, Harbour Office, Belfast.

Ireland.—April 7.—For the conversion of military barracks buildings into eleven cottages, and erection of sixteen new cottages under the Housing of the Working Classes Acts, for the Monaghan Urban Council. Mr. J. J. Inglis, 36 Dawson Street, Dublin.

Kirkoswald.—For erection of two blocks of cottages, each containing four, at Kirkoswald, Cumberland, for Sir Frances Ley, Bart. Deposit £1 1*s.* Mr. E. R. Ridgway, architect, Long Eaton, near Nottingham.

Liskeard.—March 28.—For sundry repairs, painting, &c., at Church Street, Liskeard, for the Tuberculosis Committee of the Cornwall County Council. Dr. Burnet, County Hall, Truro.

Liverpool.—March 30.—For carrying out certain works of reconstruction to provide a Roman Catholic chapel at the Brownlow Hill Institution. Mr. G. W. Coster, clerk to the Select Vestry, Parish Offices, Brownlow Hill, Liverpool.

London.—March 18.—For erection of Kew Gardens new refreshment pavilion, for the Commissioners of his Majesty's Works and Public Buildings. Deposit £1 1*s.* H.M. Office of Works, &c., Storey's Gate, S.W.

London.—March 19.—For the execution of the ordinary works and repairs to the buildings in their charge in the Croydon district during a period of three years from April 1, for the Commissioners of H.M. Works, &c. Deposit £1. H.M. Office of Works, &c., Storey's Gate, S.W.

London.—March 25.—For cleaning, painting, repairs, and plastering works at the Eastern Fever Hospital, Homerton Grove, N.E., for the Metropolitan Asylums Board. Deposit £1. Mr. W. T. Hatch, M.I.C.E., M.I.M.E., engineer-in-chief, the Office of the Board, Embankment, E.C.

London.—March 25.—For alterations and additions to nurses' home at the South-Eastern Fever Hospital, Avonley Road, New Cross, S.E., for the Metropolitan Asylums Board. Deposit £1. Mr. W. T. Hatch, M.I.C.E., M.I.M.E., engineer-in-chief, the Offices of the Board, Embankment, E.C.

Maryport.—For the various works required in alterations to Maryport C.E. schools. Mr. G. H. Elliot, architect, Heysham, Lancashire.

Mirfield.—March 21.—For the mason, joiner, plumber, concretor, painter, and ironfounder trades in extension of the Britannia Mills, Station Road, for the Coloured Cotton Spinning Co. Messrs. W. Hanstock & Son, architects, Branch Road, Batley.

Nantwich.—April 18.—For works in erection of certain new buildings and alterations, &c., in existing premises, as set out, for the Cheshire County Council—viz.: Ridley Estate, near Nantwich, alterations, additions, and repairs to existing dwelling-houses and farm buildings at Ridley Hall, Ridley Farm, and Chesterton Farm, now in the occupation of Messrs. Brown, Willis, and Ankers respectively; Woolstanwood Estate, near Crewe and Nantwich, erection of two single dwelling-houses and two sets of farm buildings. Deposit £1. Mr. W. H. Lancaster, land agent, 49 Northgate Street, Chester, and the Estate Office, 10 Wellington Road, Nantwich.

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Rothwell.—March 20.—The West Riding Education Committee invite whole or separate tenders for the following works in connection with Rothwell Robin Hood Council school (special subjects' centre): builder and plumber. The Education Architect, County Hall, Wakefield.

Rye (Sussex).—March 28.—For alterations to the existing workhouse, kitchen, and offices. Mr. H. M. Jeffery, architect, 25 High Street, Rye, or 1b Havelock Road, Hastings.

St. Austell (Cornwall).—March 28.—For sundry repairs and alterations to be done at Aylmer Place, St. Austell, for the Tuberculosis Committee of the Cornwall County Council. Dr. Burnet, County Hall, Truro.

Salford.—March 23.—For the erection of a sub-station in Pump Street, for the Corporation. Mr. E. Hewitt, architect, 33 Brazennose Street, Manchester.

Scotland.—March 16.—For the following works in connection with the reconstruction of the offices at Cowgate Public School, for the Dundee School Board—viz. mason work, tile work, joiner work, plumber work, plaster work, painter work. Mr. J. E. Williams, clerk, School Board Offices, Dundee.

Scotland.—March 18.—For the mason, carpenter, slater, plumber, plaster, painter, and glazier works of additions to Summerfield Hospital, for the Aberdeen County Council (Aberdeen District Committee). Messrs. Jenkins & Marr, C.E. and architects, 16 Bridge Street, Aberdeen.

Scotland.—March 24.—For the following works required in connection with new tramway depôt at Govan, for the Corporation: (1) Excavator, concrete, mason, and brick works; (2) carpenter, joiner, and glazier works; (3) cast-iron and steel works; (4) patent roof glazing; (5) plumber work; (6) slater work; (7) plaster work; (8) tile and terazzo works; (9) hot-water installation; and (10) painter work. Deposit £1 1*s*. each schedule. Mr. J. Dalrymple, general manager, 46 Bath Street, Govan.

Skelmanthorpe (Yorks.).—March 18.—For erection of a cottage in Commercial Road. Messrs. J. Berry & Sons, architects and surveyors, 3 Market Place, Huddersfield.

Spalding.—March 27.—For erection and completion of eighteen cottages and outbuildings in the parish of Pinchbeck, for the Spalding Rural District Council—viz.: two pairs at Pode Hole, one pair at Horse and Jockey, one pair at the Feathers in village, two pairs near Two Plank Bridge, three pairs on Surfleet main road. Messrs. Davis & Crowley, architects, 6 Double Street, Spalding, or 2 York Row, Wisbech.

Stafford.—March 17.—For erection of new station sorting office, for the Commissioners of H.M. Office of Works and Public Buildings. Deposit £1 1*s*. The Postmaster, Stafford, and H.M. Office of Works, Storey's Gate, London, S.W.

Stoke Abbot.—March 21.—For additions, repairs, and renewals to the dwelling-house and farm building at Horsehill Farm, Stoke Abbot, for the Dorset County Council. The County Land Agent, County Offices, Dorchester.

Sunderland.—March 24.—For erection of shops and offices, Burdon Road (whole tenders), for the North Eastern Railway Co. Mr. William Bell, company's architect, Irving House, Westgate Road, Newcastle-on-Tyne. (See advertisement.)

Wales.—For erection of a detached house in Alexandra Road, Merthyr Tydfil, for Mr. Dunne. Mr. O. P. Bevan, architect, Merthyr Tydfil.

Wales.—For erection of a kitchen, stores, &c., at Pontycymmer, for Messrs. Moruzzi & Co. Deposit £1 1*s*. Messrs. G. F. Lambert & Son, architects and surveyors, Bridgend.

Wales.—March 14.—For erection of a pavilion at the Cyfarthfa Park in connection with the bowling green and tennis courts, for the Merthyr Tydfil Corporation. The Borough Architect, Town Hall, Merthyr Tydfil.

Wales.—March 17.—For erection of a workmen's club at Tonyrefail. Mr. E. W. Evans, architect, Tonyrefail.

Wales.—March 21.—For levelling site of proposed hospital at Llandough, for the Guardians of the Cardiff Union. Deposit £2 2*s*. Mr. Edwin Seward, F.R.I.B.A., architect, Queen's Chambers, Cardiff.

Wales.—March 24.—For certain alterations and improvements at the Machynlleth county intermediate school. Deposit £1 1*s*. The Clerk to the Governors, Machynlleth, or the County Surveyor's Office, Broad Street, Newton.

Wales.—March 26.—For erection of a new Congregational chapel at Penygroes, Carmarthenshire, for the Building Committee. Mr. T. G. Price, P.A.S.I., architect, Cross-Hands.

Wales.—March 27.—For rebuilding Smyrna Congregational chapel, Langain. Messrs. George Morgan & Son, architects, 24 King Street, Carmarthen.

Wales.—March 28.—For erection of infirmary buildings at Ruthin, for the Guardians. Deposit £1 1*s*. Mr. F. A. Roberts, M.S.A., architect, Earl Chambers, Mold.

Weymouth.—March 16.—For supplying and erecting a steel external fire-escape staircase, and works incidental thereto, at the Union workhouse, for the Guardians. Mr. H. A. Huxtable, clerk, Bank Chambers, Weymouth.

Weymouth.—March 19.—For certain alterations at the police station, for the Corporation. The Borough Surveyor's Office.

Wheatley Hill.—March 20.—For erection of a branch store, for the Haswell Co-operative Provision Society, Ltd. Send in names by March 20 to Mr. J. Wilson Hays, architect, Wingate, county Durham.

Wheatley Hill.—March 20.—For erection of extensions and alterations to the Temperance Hall. Send in names by March 20 to Mr. J. Wilson Hays, architect, Wingate, county Durham.

Wigan.—March 19.—For erection of a discharging ward at the Whelley Sanatorium, for the Corporation. Mr. A. T. Gooseman, borough engineer, King Street West, Wigan.

Wilmington.—March 16.—For execution of sanitary improvements required to be carried out at Wilmington Council school, for the Kent Education Committee. Miss M. L. Dixon, correspondent, 8 Hythe Street, Dartford, Kent.

Wooler.—March 28.—For the work of executing a general scheme of alterations to Wooler Council school, for the Northumberland Education Committee. Send names and £1 1*s*. deposit by March 14 to Mr. C. Williams, secretary to the Education Committee, the Moothall, Newcastle-on-Tyne.

York.—March 24.—For erection of a storey above the refreshment rooms at York Station, for the North-Eastern Railway Co. Mr. W. Bell, the Company's architect, at York.

TENDERS.

ACLE.

For the erection of four cottages in the parish of Acle, Norfolk, for the Blofield Rural District Council.

	£	s.	d.
Howes	£773	0	0
Bland	740	0	0
Evans	723	10	0
Reynolds	713	0	0
Riches & Son	674	0	0
Sparkes & Latten	640	0	0
Daniels	640	0	0
Watling	620	0	0
Snelling	594	0	0
Hayden	550	0	0

No tender has as yet been accepted.

BRIGHOUSE.

For trades required in connection with alterations and extensions to foundry and erection of new pattern store at Woodhouse Works.

Accepted tenders.

Mason, L. Brook & Co., Ltd., Brighouse.
Joiner, F. Barraclough, Brighouse.
Slater, J. Smithies, Brighouse.
Plasterer, H. Castle & Co., Brighouse.
Steel joists, W. Scott, Ltd., Leeds.
Approximate, £3,000.

CASTLEMORTON.

For the erection of four cottages at Castlemorton, for the Upton-on-Severn Rural District Council.

	£	s.	d.
T. Armstrong, Colwall (*accepted*)	£777	10	0

DAVYHULME.

For the erection of cart shed, office, mortuary, and storeroom at their depôt at Croft's Bank, Davyhulme, for the Barton-upon-Irwell Rural District Council. Mr. A. H. Mountain, A.M.I.C.E., surveyor, Patricroft. Quantities by builders tendering.

	£	s.	d.
Moore	£338	10	0
Chapman	289	0	0
Hulme	287	0	0
Spark	277	0	0
Whittaker	273	0	0
Whitehead	269	0	0

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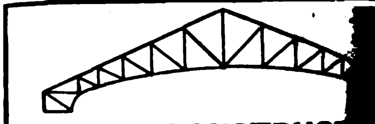

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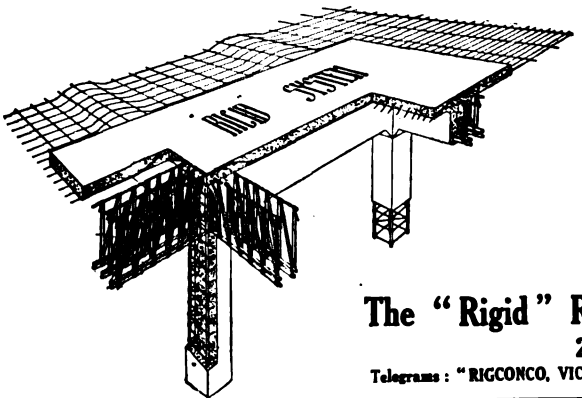

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FALMOUTH.

For additions to the Princess Pavilion, for the Town Council. Mr. J. S. WALTON, borough engineer and surveyor, Falmouth.

E. H. Moss, Falmouth (*accepted*)	£444	0	0

GERRARD'S CROSS.

For erection of house in Orchehill Avenue. Messrs. DAVIS & BODDY, A.R.I.B.A., M.S.A., F.S.I., architects, 14 Southampton Street, Strand, W.C.

Elcock	£1,170	0	0
F. GREEN (*accepted*)	1,125	0	0

For erection of house in Fulmer Way, for Mr. Walter Seiler. Messrs. DAVIS & BODDY, A.R.I.B.A., M.S.A., F.S.I., architects, 14 Southampton Street, Strand, W.C.

Bailey	£1,095	0	0
Green	1,085	0	0
A. C. DEAN (*accepted*)	995	0	0

GILLINGHAM.

For additions to St. Barnabas Church. Messrs. CUTTS, DAVIS & BODDY, A.R.I.B.A., M.S.A., F.S.I., architects, 14 Southampton Street, Strand, W.C.

Phillips	£770	0	0
West Bros.	748	0	0
Skinner	734	0	0
A. H. HORNE (*accepted*)	668	9	0

LAWLEY BANK.

For execution of waterworks extensions, for the Wellington (Salop) Rural District Council.

Hodson & Son	£2,187	9	8
Fuller & Co.	1,921	16	6
Bredner & Co.	1,919	9	0
Boswell & Co.	1,766	12	1
Trentham	1,739	0	0
Taylor & Son	1,633	13	1
YORK & Co., Wellington (*accepted*)	1,620	9	8

LONDON.

For painting interior and exterior (not iron buildings) of the L.C.C. school at Basnett Road, Battersea.

Willett	£908	0	0
Garrett & Son	878	0	0
Rice & Son	771	0	0
Maxwell Bros.	741	0	0
TRIGGS & Co., 92 The Chase, Clapham (*recommended*)	722	0	0

For painting interior and exterior of the L.C.C. school, Gloucester Road, Camberwell.

Patman & Fotheringham	£1,077	0	0
H. King & Son	1,043	0	0
F. & T. Thorne	1,026	0	0
King & Son	1,019	0	0
Parker & Sons	969	0	0
Mills & Sons	939	0	0
J. SCOTT FENN, 42 William Street, Woolwich (*recommended*)	886	18	0

For painting interior of L.C.C. school, Munster Road, Fulham.

A. & F. POLDEN, Camden Works, Shepherd's Bush (*recommended*)	£595	12	0

For painting interior and exterior of L.C.C. school, Colls Road, Peckham.

F. & T. Thorne	£804	0	0
Mills & Sons	790	0	0
Loasby	758	0	0
Peyton	730	0	0
Bailey	679	0	0
VIGOR & Co., 15 King Street, Poplar (*recommended*)	653	0	0

For painting the interior of the L.C.C. school in Penrose Street, Newington.

H. King & Son	£598	0	0
King	578	0	0
Ford & Sons	576	0	0
Lapthorne & Co.	559	0	0
Smith & Son	554	0	0
W. V. GOAD, 241 Camberwell Road (*recommended*)	552	0	0
Sims	545	0	0
King & Son	535	0	0

LONDON—*continued.*

For painting exterior and interior of L.C.C. school, Carlton Road, St. Pancras.

Marchant, Hirst & Co.	£678	0	0
Williams & Son	619	0	0
Waddington & Sons	611	0	0
Warburton & Son	585	0	0
Chappell	575	0	0
Stevens & Sons	532	0	0
J. STOKES & SONS, High Street, East Ham (*recommended*)	517	0	0

For painting exterior and cleaning interior of L.C.C. school, Hollydale Road, Peckham.

F. & T. Thorne	£696	0	0
Coldman & Son	649	5	0
Bailey	629	4	0
Loasby	575	0	0
Peyton	554	11	6
VIGOR & Co., 15 King Street, Poplar (*recommended*)	552	0	0

LUTTERWORTH.

For the erection, &c., of twenty-three houses, for the Rural District Council. Mr. A. J. Ross, architect, Lutterworth.

T. & A. Scotney	£3,979	0	0
Barlow & Co.	3,978	0	0
Hickman & Son	3,667	0	0
Moss & Sons	3,600	0	0
King & Ridley	3,548	0	0
Sleath	3,352	0	0
Ford & Sons	3,335	0	0
PETER ROURKE, Lutterworth (*accepted*)	3,335	0	0
Chitham & Co. (*withdrawn*)	2,997	0	0

LYNDHURST.

For the erection of a shop extension at Lyndhurst, New Forest, for Mr. Emanuel Howells. Mr. WILLIAM BURROUGH HILL, F.S.I., architect, Southampton.

Fussell	£163	0	0
Gale & Sons	159	0	0
Jenkins & Sons, Ltd.	154	0	0
A. WRIGHT & SON (*accepted*)	149	10	0

MANSFIELD.

For the erection of a picture palace on Skerry Hill. Mr. S. BALL, architect, Nottingham. Quantities by the Architect.

Knapp	£3,529	0	0
Barlow & Co.	3,320	0	0
Long & Sons	3,112	13	0
Haynes	3,080	0	0
Beckett	3,049	0	0
Vallance & Blythe	2,997	10	0
Greenwood	2,980	0	0
Perks & Son	2,912	0	0
GIBBONS & TURNER, Nottingham (*accepted*)	2,910	0	0

ST. AUSTELL.

For the erection of a workhouse infirmary. Mr. B. C. ANDREW, M.S.A., architect, St. Austell.

Amended tenders.

Bennett	£3,753	0	0
PAYNTER, Plymouth (*recommended*)	3,667	0	0

SHEFFIELD.

For the erection of fifty-nine houses on the High Wincobank Estate, for the Corporation.

A. WADDINGTON, Sheffield (*recommended*)	£10,146	0	0

SOUTHAMPTON.

For painting Nos. 4-8 and 10-15, inclusive, Brunswick Place, Southampton, for Messrs. the Trustees of Wulfris Charity. Mr. WILLIAM BURROUGH HILL, F.S.I., architect and surveyor to the Trust, Southampton.

Udall & Co., Ltd.	£171	16	0
Chalk	142	10	0
Danbury	138	12	0
Franklin & Co.	138	0	0
Stevens & Co.	137	0	0
Saunders	135	0	0
Fussell	126	0	0
Boach	120	10	4
Neale	96	0	0
Jenkins & Sons, Ltd.	92	0	0
Prazier & Son	89	10	0

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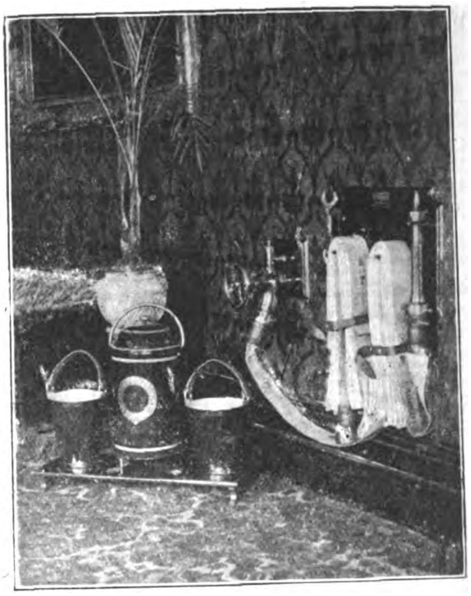

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Skinner	£8,300	0	0
Adams	7,800	0	0
Chas. Wall, Ltd.	7,100	0	0
Marsh	6,869	0	0
Hayward	6,417	0	0
Rowley Bros.	6,028	0	0
Brown Bros.	5,997	0	0
Coxhead	5,990	0	0
W. & C. **FRENCH**, Buckhurst Hill (*accepted*)	5,514	6	4

For the erection of 130 workmen's dwellings, for the Tilbury Urban Council.

Rowley Bros.	£48,376	0	0
Chas. Wall, Ltd.	47,807	0	0
Skinner	46,967	0	0
Coxhead	45,970	0	0
Driver & Sons	44,724	6	8
Moss	43,500	0	0
Myall Bros.	43,000	0	0
Potter	41,080	0	0
Burrows	40,500	0	0
Saunders	40,500	0	0
Brightman & Sons	40,000	0	0
Brown	39,780	0	0
Walsham	39,777	17	0
H. J. Carter, Ltd.	38,941	0	0
BROWN BROS., Grays (*accepted*)	38,910	15	0

TOTTON.

For the erection of four cottages, Compton Road, Vaughan Hill Estate, Totton, Hants, for Mr. W. V. Cotton. Mr. **WILLIAM BURROUGH HILL**, F.S.I., architect, Southampton.

	Tiled.			Slated.		
Creighton & Sons	£815	0	0	£800	0	0
Soper	715	0	0	695	0	0
Nicholl	772	0	0	—		
FRY & SON (*accepted*)	670	0	0	665	0	0

MANCHESTER BUILDING EXHIBITION.

LAST week we gave a short account of the opening of the Manchester Building Trades Exhibition on the 3rd inst. at the City Exhibition Hall, Deansgate, and made reference to some of the stands. This week we give a brief review of certain of the remaining exhibits.

Messrs. H. Heydon & Co., Ltd., Stratford, E., varnish and japan manufacturers, are making a special display on Stand 35 with their "Melana" damp-proof enamel, which may be applied to brick, iron, cement, wood, or plaster. Repeated washing does not deteriorate the surface. An important claim is that it may be painted, distempered, or papered over as soon as dry, and that two coats on a damp wall will protect the paper. One gallon covers 80 to 100 square yards. "Melana" is obtainable, in any colour, of the sole proprietors and manufacturers, Harold Heydon & Co., Ltd.

Two of the principal features of "Ironite" are thus summed up by Mr. Bertram Blount, the consulting analytical chemist, in his report, after a series of searching tests: "I am of opinion that 'Ironite' is a material of great value for rendering structures watertight and making porous surfaces impermeable." It is a fine mineral powder, which for use is mixed with water to about the consistency of whitewash, and brushed on to cement, bricks, concrete, roughcast, or similar material when the surface is porous. The "Ironite" particles oxidise and form both a mechanical and a chemical union with the material, completely filling the voids into which they penetrate. A list issued by the *Ironite Co., Ltd.* (managers: S. Thornely Mott & Vines, Ltd.), 1 Victoria Street, S.W., of some of the users includes many of the most important public bodies, architects, surveyors, contractors, and engineers in this country. In America, also, it has established a firm reputation as "a sure thing."

Messrs. D. Anderson & Son, Ltd., Belfast and Old Ford, E., have made an excellent selection from their numerous and varied manufactures, and show at Stands 36 and 37 such well-known specialities as "Rok" roofing, "Stoniflex" felt, "Zerolite" insulating papers, bitumen sheeting and damp-course, and "Sideroleum," the wood preservative.

To some visitors the fence posts on the stand of the British Portland Cement Manufacturers, Ltd., may be in the nature of a surprise. They are exhibited by the *Reinforced Concrete Fence Posts Co., Ltd.*, to demonstrate what very admirable and useful results may be obtained by the substitution of this imperishable material for wooden uprights. Of course, reinforced concrete fencing is really no new thing in this country, and still less so in America. The very mechanical perfection may at first be unpleasing to eyes accustomed to the picturesque irregularity of timber posts and rails. But the material "grows" upon one's favour, and has some very substantial practical advantages.

Various drain and tube clearing machines are shown on the stand of *Messrs. Cakebread, Robey & Co.* On the same stand may be seen a selection of Stevens' patent locks and latches, which are strongly made, without any delicate working parts. A new development of this lock, which is exhibited for the first time, is an independent locking bolt; this feature has never been attempted before in a tubular lock.

Beaver Boards are displayed on Stand No. 42 by *Messrs. Southern & Nephew, Ltd.*, Knott Mill, Manchester. As most of our readers are aware, Beaver Board is a pure wood fibre product, manufactured in large sheets about 3/16 of an inch in thickness. It is cut panelwise for covering walls, ceilings, and partitions, and when finished with paint or distemper can give a most pleasing result.

The Gelatinous White Co., Ltd., are urging the undoubted merits of Filocol as a high-class sanitary distemper. It is to be had as a paste or powder for inside use; a special washable distemper is made for outside purposes.

The Cyclops Concrete Machine Co. are showing on Stand 56 blocks made from several kinds of aggregates, including waste quarry stuff, slag from ironworks, and slate debris. Their concrete block, post, and other machines are shown in connection with the "England" brand of cement. The latter is the product of the Manchester Ship Canal Portland Cement Manufacturers, Ltd., on whose stand the exhibit is to be found.

The work of *Mr. J. Alberti*, 1 Oxford Road, Manchester, as a modeller, sculptor, and fibrous plaster manufacturer, is doubtless familiar to many of the visitors, for it is to be met with not only in Manchester, but in different parts of the country. He is exhibiting examples of his fibrous plaster decorations and his reproductions of famous statuary. It may be mentioned that Mr. Alberti makes scale models in plaster from architects' drawings of buildings.

PRUDENTIAL ASSURANCE COMPANY, LTD.

AT the sixty-fifth annual meeting of the Prudential Assurance Co., Ltd., held on the 5th inst., Mr. T. C. Dewey, Chairman of the Board of Directors, was in the happy position of announcing that the results of the past year were remarkable for the further records added to their long list. The total income during 1913 was £16,567,609, being an increase of £549,670 over that of the previous year. This addition is not due to an exceptional increase in any particular item, but is contributed to by every source. In the industrial branch the total premiums received were £7,874,455, an actual increase of £220,668. At the beginning of the year the premium income for the branch was £7,846,057, and at the end it was £8,218,695, an increase of £372,638. This addition to the industrial premium income has never been equalled.

There has been a very noticeable increase in the policies issued which are subject to the payment of monthly premiums. The number in force at the end of the year was 593,656, with an annual premium income of £757,673, assuring the sum of £11,605,990.

In the ordinary branch the premiums received amounted to £4,920,518, an increase of £93,525. The sum assured under 71,359 new policies issued during the year was £6,849,224, an increase of £1,263,071.

The number of policies in force exceeded twenty and a-half millions, and the total sum assured under these policies was £362,155,251. Of these policies, 917,091 were in the ordinary branch and 19,778,135 in the industrial branch. The total claims paid in the year, inclusive of bonus additions, amounted to £6,905,818—viz., £3,766,625 in the ordinary branch and £3,139,193 in the industrial branch.

The assets of the company, in both branches, as shown in the balance-sheet, after deducting £1,750,000 written off securities, are £86,993,003, being an increase of £2,421,071 over those of 1912.

In the ordinary branch a reversionary bonus at the rate of £1 16*s.* per cent. on the original sums assured has again been added to all classes of participating policies issued since the year 1876. In the industrial branch a bonus addition, ranging from £5 to £60 per cent., will be made to the sums assured on all policies of over five years' duration which become claims either by death or maturity of endowment from March 6, 1914, to March 4, 1915, both dates inclusive.

PATENT SPECIFICATIONS PUBLISHED, MARCH 5, 1914.

Selected and abridged by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

No. 25,533. Nov. 7, 1912.—C. H. Sidebotham, 3 Macdonald's Lane, Corporation Street, Manchester. Windows.

28,494. Dec. 10, 1912.—E. F. Stimson, 88 Streathbourne Road, Upper Tooting, S.W. Gas-heated hot-water circulators.

3,554. Feb. 11, 1913.—G. H. Benjamin, 45 Broadway, New York. Art of manufacturing cement steel.

3,670. Feb. 12, 1913.—J. H. Lovell, Grove Glass Works, Marshgate Lane, Stratford, Essex. Metal windows.

5,046. Feb. 27, 1913.—Blaw Steel Construction Co., New Jersey, U.S.A. Wall moulds for use in connection with concrete and like structures.

5,136. Feb. 28, 1913.—R. H. Annison, 16 Water Lane, Great Tower Street, London. Driving caps or dollies for driving piles and other constructional members.

6,289. March 13, 1913.—P. M. Hardy, Aurora, Beaufort, North Carolina, U.S.A. Automatically opening gates.

9,059. April 17, 1913.—P. R. Wilde, 23 The Circus, Bath. Stoves.

9,717. April 25, 1913.—John Harper & Co., Ltd., and Charles Retallack, Albion Works, Willenhall. Gas stoves and radiators.

11,252. May 14, 1913.—R. A. Maclean, 117 Stanmore Road, Mount Florida, Glasgow. Vacuum cleaning machines.

12,027. March 23, 1913.—John Wilkie, 17 Albert Drive, Crosshill, and David McErlane, 51 Bedlay Street, Springburn. Device for sharpening and setting band or other saws.

12,166. May 24, 1913.—C. H. D. Hunter, 175 William Street, Melbourne, Victoria. Internally heated cooking oven.

15,976. July 11, 1913.—Francis Mulligan, 1A Glandore Street, Belfast. Ventilation of floors, ceilings, and walls of buildings.

17,942. Aug. 6, 1913.—Dated under International Convention Aug. 10, 1912. Arno Hohne, Waldstr 51, and Hermann Krake, Wiesenstr 13, Leipzig. Means for opening and closing doors.

22,165. Oct. 2, 1913.—R. F. Agnew, 72 Ashley Lane, Moston, Manchester. Slide rule.

22,332. Oct. 3, 1913.—P. E. Pownall, Lyddons Mead, Chard, Somerset. Machines for mixing stones or other solid substances with tar, mastic asphalte, cement, or other material.

22,387. Oct. 4, 1913.—O. E. Wilson, Meadow Bank, Kingston Road, Didsbury, near Manchester. Adjustable bonding stirrups and tie bars for use in reinforced concrete structures.

22,702. Oct. 8, 1913.—Dated under International Convention Oct. 31, 1912. Soc. Vellave de la Nouvelle Persienne Tole A, Nervures J.D., 15 Boulevard St. Jean, Le Puy (Haute Loire), France. Machine for rabbeting the slats of metal blinds.

27,562. Dec. 1, 1913.—Dennis & Chas. Vowles and Stamford Woodhall, Hale End Foundry, West Bromwich. Fire grates.

24,475. Oct. 28, 1913.—Soc. Anon. des An. Etab. Panhard et Levassor, 19 Ave de Ivry, Paris. Automatically acting machine for cutting up timber.

29,149. June 19, 1913.—J. A. Terry, 18 Leopold Road, East Finchley, N. Sliding window-sash frames.

Any of the above specifications may be obtained from J D. Roots & Co.

KENT County Council are applying for sanction to borrow £55,000 for the enlargement and improvement of Chartham Asylum.

UNDER the direction of Messrs. Hawe & Foley, architects, Beverley, Boyle's latest patent "air-pump" ventilators have been applied to the new Council school, Beverley.

THE Dumfries Town Council are going to proceed with the erection of swimming ponds, at a cost of £4,400, in conjunction with the burgh of Maxwelltown.

THE British Mannesmann Co. on Tuesday last completed contracts for the purchase of 107 acres of land in Newport, Mon., on which to erect new works. The initial expenditure is expected to be about a million sterling.

MAJOR BYRNE has been appointed as manager of the London business of Dorman, Long & Co., Ltd., in place of Mr. H. B. Powell, who is retiring after his long connection with the firm. Major Byrne was lately assistant superintendent of the Royal Small Arms Factory at Enfield.

VARIETIES.

THE Corporation of London have decided not to establish an Art School either at the Guildhall or anywhere within the City boundaries, to replace the Birkbeck School of Art which was recently closed.

THE Swansea Education Committee has submitted to the Board of Education for its approval plans of a school to be erected at Glanmor, designed on open-air lines, to accommodate 1,200 scholars at a cost of £15 per head, or roughly £18,000.

THE will of Mr. Redmond Parker Cafferata, aged sixty-seven, of Grantham and of Newark-upon-Trent, cement, plaster, and brick manufacturer (net personalty £9,210), has been proved at £59,530.

THERE are signs of a revival in the slate industry of North Wales. Penyrorsedd Quarry in the Nantlle Vale is about to be opened, whilst other quarries in the neighbourhood are to work five instead of four days a week, which has been the rule for some time past.

NORWICH Town Council have decided to erect new municipal offices in accordance with plans prepared by the city engineer, Mr. A. E. Collins, M.Inst.C.E. The cost, including alterations to the existing buildings, is estimated at £12,800.

THE Newport Town Council have been considering the Town Hall accommodation. A proposal that a new Town Hall be erected at King's Hill was last week defeated in favour of a proposal that the present Town Hall be extended in Dock Street. It is expected that the cost will be about £15,000.

A PLAN was submitted at a meeting of Seaton Delaval Council on Wednesday for the laying out of the new resort at Seaton Sluice by Lord Hastings, and was referred to a committee. The plan includes a promenade, railway station, and blocks of semi-detached houses, and open spaces.

THE Cardiff Housing Committee have decided to accept Lord Bute's offer of the six acres of land at Portmanmoor Road, on a ninety-nine years' lease, at a ground rent of £30 per acre per annum, for the erection of 120 workmen's cottages. Mr. Harpur, M.I.C.E., the city engineer, will proceed with the plans after the sub-committee has paid visits of inspection to similar schemes in South Wales and Liverpool.

THE Northwood Urban District Council (Middlesex) applied in the latter part of 1910 for sanction from the Local Government Board to prepare a town-planning scheme for about 6,000 acres of their district. Sanction was given, and the co-operation of the various landowners was gained. At this week's meeting the Chairman, Mr. F. M. Elgood, announced that, after nearly three and a half years' work, the final scheme had been approved.

THE Edinburgh Master Plumbers' Association have issued the following circular to their members:—With reference to the advertised estimates for jobbing work on property belonging to the city of Edinburgh, it has been arranged that the same shall be treated as contracts, and on the total amount of the successful contracts 5 per cent. is to be paid over to the Association as an estimate fee. This percentage will be paid to the Association quarterly on the quarterly amount paid to the successful contractors. All members intending to estimate will please keep in view the above.

CERTAIN alterations, the *Glasgow Herald* understands, have been made in the list of architects nominated for Associateship of the Royal Academy circulated in advance of the next election, when three vacancies will be filled. Two names have disappeared—those of the late Mr. William Flockhart and Mr. John Oldrid Scott, son of Sir Gilbert Scott, and architect of Bute Hall, Glasgow. Both Mr. Flockhart and Mr. Scott were nominated for Associateship at least fifteen years ago. Two other architects have been nominated in their places—namely, Mr. Walter Cave and Mr. E. Guy Dawber.

A SUPERINTENDENT architect is wanted by the Government of Nigeria to prepare plans and supervise erection of buildings for new capital. Appointment, on agreement, for three years. Age, 25 to 40. Salary, £500 to £600, with duty allowance of £100 per annum. Free furnished quarters and first-class passages. Four months' leave in England on full salary after each tour of twelve months' service. Candidates must be members of the Royal Institute of British Architects. Applications by letter, giving full particulars of qualifications and experience, should be sent to the Crown Agents for the Colonies, Whitehall Gardens, S.W., at once.

THE
Architect and Contract Reporter.
FRIDAY, MARCH 20, 1914.

EDITORIAL NOTICES.

The Editor will always be pleased to examine drawings or articles with a view to publication, but cannot be responsible for the safety of those sent, though every reasonable care will be taken. Contributors desiring payment should clearly state their wishes. No payment will be made until after publication, and a commission to prepare articles or drawings does not necessarily imply acceptance or approval.

No communication can be inserted unless authenticated by the name and address of the writer—not in every case for publication, but as a guarantee of good faith.

We have upon our staff a very eminent Barrister, who will be glad to answer in the columns of this paper any legal question that may be of interest to our readers. All letters must be addressed "Legal Adviser," Office of "The Architect," Imperial Buildings, Ludgate Circus, London, E.C.

The Editor will be glad to receive from Architects in London and the Provinces results of Competitions and Tenders and other particulars of Works in progress in which they may be interested.

TENDERS, ETC.

⁂ *As great disappointment is frequently expressed at the nonappearance of Contracts Open, Tenders, &c., it is particularly requested that information of this description be forwarded to the Office, Imperial Buildings, Ludgate Circus, London, E.C., not later than 2 p.m. on Thursdays.*

COMPETITIONS OPEN.

Canada (Ottawa).—April 2.—Architects are invited to submit by April 2 sketch designs in a preliminary competition for the erection of Departmental and Courts Buildings at Ottawa, Ontario. From the designs submitted six will be chosen by the assessors to take part in a final competition, for which the five unsuccessful competitors will each receive an honorarium of 3,000 dollars. The competition is limited to British subjects practising in the British Empire. The Government has appointed Mr. T. E. Collcutt, Mr. J. H. G. Russell, and Mr. J. O. Marchand as assessors. Conditions may be obtained from the High Commissioner for Canada, 17 Victoria Street, London, S.W., and Mr. R. C. Desrochers, secretary, Department of Public Works, Ottawa.

East Preston.—The Southstrand Sports Club (newly formed) invite plans for a clubhouse to be erected on the Southstrand Estate, East Preston, near Worthing. The successful competitor will be instructed to carry out the work, and will receive, in addition to the usual fees, a bonus on completion of the building. A plan of the site and full particulars can be obtained of Mr. William Hollis, surveyor, Southstrand Estate Offices, Church End, Finchley, London.

Glasgow.—May 1.—The Corporation are prepared to receive from sculptors competitive models and relative offers for four groups of symbolical sculpture to be placed on the abutments of the new bridge at Radnor Street, Kelvingrove Park, Glasgow. Copies of the conditions of the competition may be obtained on application to Mr. J. Lindsay, town clerk, City Chambers, Glasgow.

Grimsby.—June 2.—The Building Committee of the proposed Constitutional Club invite designs for premises to be erected at the corner of Victoria Street and Upper Spring Street, at an estimated cost of £3,000. Premiums of £40, £20, and £10 are offered. Deposit of £2 2s. will be sent back on receipt of designs or on return of the particulars within 10 days. Mr. H. W. V. Sheckell, secretary, Constitutional Club, Victoria Street, Grimsby.

Hendon.—May 11.—The Education Committee will be prepared to receive competitive designs for a school at Hale Grove Gardens, Mill Hill. Conditions of competition and plan of site may be obtained from Mr. James Anderson, secretary to the committee, Council Offices, Hendon, N.W.

London.—May 4.—The Bridge House Estates Committee of the Corporation of the City of London invite designs from British architects for the architectural treatment of the new St. Paul's Bridge. The conditions of the competition and instructions may be obtained upon payment of a deposit of £3 3s., which will be returned on receipt of a design in accordance with the conditions. A premium of £300 is offered for the design which may be placed first, and further premiums of £200 and £100 respectively. The committee will be advised by Sir William Emerson, P.P.R.I.B.A., as assessor, whose decision will govern the award of the premiums and be final and binding in all stages of the competition. The Town Clerk, Guildhall, London, E.C.

Mold.—The Urban District Council invite architects to submit plans, &c., for a fire station and caretaker's house, to be erected at Earl Road. Further particulars may be obtained from Mr. D. Thomas, surveyor, Town Hall, Mold.

Sacriston.—April 15.—The Trustees of the Literary Institute are prepared to receive plans for the proposed Institute. All information can be obtained from Mr. John Walker, secretary, 11 Eliza Street, Sacriston, Durham.

CONTRACTS OPEN.

Barlby.—March 28.—For erection of an additional classroom at Barlby Council school, near Selby, for the East Riding of Yorkshire County Council. Deposit £1 1s. The Building Surveyor, County Hall, Beverley.

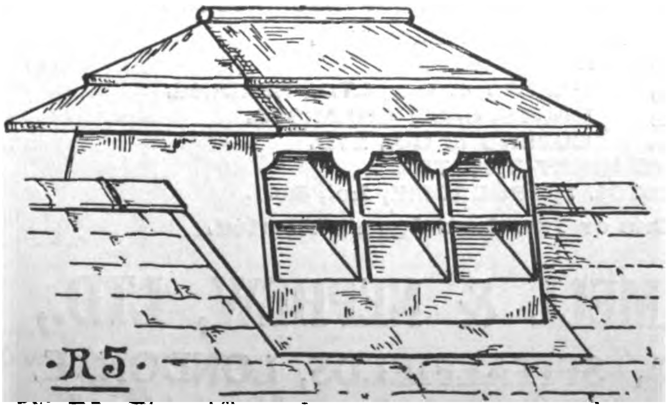
Birstall.—For erection of brick chimney, 60 feet to 80 feet high. Inside diameter at top to be 6 feet. The Howden Clough Collieries, Ltd., Birstall, near Leeds.

Bishop's Stortford.—March 31.—For erection of Congregational schools. Send names by March 31 to Messrs. Spalding & Myers, architects, 36 and 37 King Street, Cheapside, E.C.

Blackburn.—March 23.—For alterations to their office premises in King Street, for the Blackburn Philanthropic Assurance Co. Send names by March 23, together with £2 2s. deposit, to Mr. J. Smith, architect, 24 Richmond Terrace, Blackburn.

Bradford.—For erection of a residence at Heaton (Bradford (all trades). Mr. J. Ledingham, F.R.I.B.A., District Bank Chambers, Bradford.

(*Continued on page 15.*)



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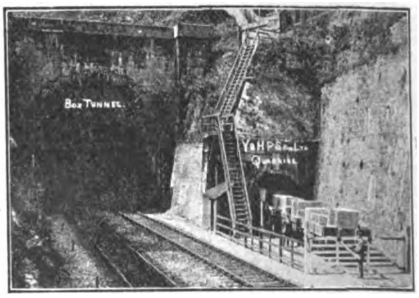

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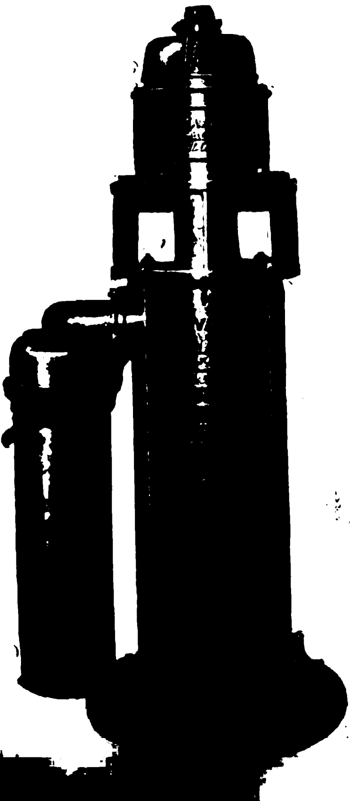

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Brampton.—March 26.—For erection of a corrugated-iron roof for retort house, 43 ft. by 34½ ft. Mr. F. Young, manager, Gas Works, Brampton.

Cambridge.—March 29.—For erection of a building for the accommodation of the nurses at the workhouse infirmary, Mill Road. (Mr. S. French, architect.) Mr. J. Congreve, clerk, 55 St. Andrew's Street, Cambridge.

Chesham.—March 25.—For erection and completion of twenty workmen's dwellings, together with all fencing, drainage, &c., upon land in Brockhurst Road, for the Urban District Council. Mr. P. C. Dormer, engineer and surveyor, Council Offices, Chesham.

Copley.—For the various works required in rebuilding the Volunteer Arms, Copley, Halifax. Messrs. Jackson & Fox, architects, Rawson Street, Halifax.

Edmonton.—April 14.—For erection of a sanitary convenience near Lower Edmonton railway station, for the Edmonton Urban District Council. Mr. C. Brown, engineer and surveyor, Town Hall, Edmonton.

Fishponds.—April 2.—For various alterations and additions to buildings at the Bristol City Asylum, Fishponds, for the Visiting Committee. Mr. A. Orme, steward, Fishponds, Glos.

Gosforth.—March 24.—For erection of a residence for the superintendent of the fire brigade at the rear of the Council offices, High Street. Mr. G. Nelson, A.M.I.C.E., engineer and surveyor, Council Offices, Gosforth.

Grendon.—For erection of a Liberal Club for Grendon and district. Mr. H. Albrighton, secretary, Grendon.

Grimsby.—For erection of Territorial barracks, Augusta Street, for the Lincolnshire Territorial Force Association. Mr. A. Easton, architect, Colonial Chambers, Princes Dock Street, Hull.

Halifax.—March 28.—For the execution of the work required (various trades) in the proposed extension to machine works, Lister Place, for the Improvement Committee. Deposit £1. Mr. J. Lord, M.I.C.E., borough engineer, Town Hall, Halifax.

Halifax.—March 28.—For the execution of the work required (various trades) in the erection of two greenhouses at West House, for the Parks Committee. Deposit £1. Mr. J. Lord, M.I.C.E., borough engineer, Town Hall, Halifax.

Halifax.—March 28.—For the reslating of portions of the roof of the borough markets, for the Markets Committee. Deposit £1. Mr. J. Lord, M.I.C.E., borough engineer, Town Hall, Halifax.

Hereford.—April 14.—For erection and completion of sixty-two cottages, subject to the sanction of the Local Government Board to the necessary loan, for the Town Council. Tenders may be made for the erection and completion of the whole of the cottages, or any of the following—viz.: (Type A) thirty-six cottages in nine blocks of four each; (B) fourteen cottages in pairs; (C) four cottages in one block; (D) eight cottages in two blocks of four each. Deposit 10*s.* 6*d.* Mr. J. Parker, city surveyor, Town Hall, Hereford.

Hinckley.—March 28.—For erection of sixteen additional workmen's dwellings in Coventry Road and Rugby Road, for the Urban District Council. Deposit £2 2*s.* Mr. E. H. Crump, A.M.I.C.E., engineer and surveyor, Council Offices, Hinckley.

Hindley.—March 28.—For erection of an electricity transforming station and other buildings adjoining on land in Cross Street, for the Urban District Council. Deposit £2 2*s.* Mr. O. P. Abbott, surveyor, Hindley.

Howden.—March 25.—For erection of an isolation hospital at Howden, Yorks., for the Rural District Council (whole tenders). Send names by March 25 to Mr. T. S. Ullathorne, architect, Selby.

Huddersfield.—March 23.—For any of the various works required in alterations and additions to offices at the Hillhouse P.F. and Industrial Society's premises, Bradford Road. Send names by March 23 to Messrs. J. H. Hall & Son, architects, Exchange, Huddersfield.

Ireland.—March 23.—For erection of new organ chamber and other improvements at the May Street Presbyterian Church, Belfast. Deposit £2 2*s.* Messrs. Young & Mackenzie, Scottish Provident Buildings, Belfast.

Ireland.—March 28.—For building a tower to Fintona Church. The Northern Bank, Fintona, or Messrs. R. E. Buchanan & Co., architects, Castle Street, Londonderry.

Ireland.—March 31.—For erection and furnishing of National School buildings at Ballygarrett, Gorey, Co. Wexford. The Gorey R.I.C. Barracks, Co. Wexford.

Ireland.—April 2.—For erection and furnishing of National School buildings at Clonowen, Co. Roscommon. The Athlone R.I.C. Barracks.

Ireland.—April 7.—For the conversion of military barracks buildings into eleven cottages, and erection of sixteen new cottages under the Housing of the Working Classes Acts, for the Monaghan Urban Council. Mr. J. J. Inglis, 36 Dawson Street, Dublin.

Keighley.—March 23.—For the mason's, slater's, plumber's, and plasterer's work required in erection of fifteen houses near Bar House, Stockbridge, Keighley. Send applications by March 23 to Messrs. Moore & Crabtree, architects, York Chambers, Keighley.

Lee-on-the-Solent.—March 31.—For construction of public conveniences for the Fareham Urban District Council. Mr. C. W. Hunt, inspector of nuisances, East Street, Fareham.

London.—March 23.—For repairs, painting, and other work at their infirmary, Rackham Street, Notting Hill, W., for the St. Marylebone Board of Guardians. The Steward of the Infirmary.

London.—April 7.—For building a sports pavilion at Sheen Common, S.W., for the Barnes Urban District Council. Mr. G. B. Tomes, A.M.I.C.E., surveyor, Council House, High Street, Mortlake, S.W.

Maidstone.—April 3.—For the execution of offices, &c., required to be carried out at the Westwell Council School, for the Kent Education Committee. Mr. D. Brown, correspondent, Cow Lees, Westwell, Ashford.

Manchester.—March 25.—For an extension to the nurses' quarters at Monsall Hospital, for the Sanitary Committee. Deposit £1 1*s.* The City Architect, Town Hall, Manchester.

Manchester.—March 25.—For erection of four ward pavilions and isolation block at Monsall Hospital, for the Sanitary Committee. Deposit £2 2*s.* The City Architect, Town Hall, Manchester.

Manchester.—March 27.—For construction of cupboards and partition at their Poland Street depôt, for the Corporation Gas Department. Deposit £1 1*s.* Mr. F. A. Price, superintendent, Gas Department, Town Hall, Manchester.

Nantwich.—April 18.—For works in erection of certain new buildings and alterations, &c., in existing premises, as set out, for the Cheshire County Council—viz.: Ridley Estate, near Nantwich, alterations, additions, and repairs to existing dwelling-houses and farm buildings at Ridley Hall, Ridley Farm, and Chesterton Farm, now in the occupation of Messrs. Brown, Willis, and Ankers respectively; Woolstanwood Estate, near Crewe and Nantwich, erection of two single dwelling-houses and two sets of farm buildings. Deposit £1. Mr. W. H. Lancaster, land agent, 49 Northgate Street, Chester, and the Estate Office, 10 Wellington Road, Nantwich.

Needham Market.—For erection of three pairs of workmen's cottages at Needham Market, for the Bosmere and Claydon Board of Guardians. Mr. H. R. Hooper, A.R.I.B.A., architect, Ipswich.

Newnham.—March 25.—For erection of a public elementary school in the parish of Newnham, for the Northamptonshire County Council Education Committee. Send names by March 25 to Messrs. Blackwell & Riddey, architects, 53 High Street, Kettering.

Normanton.—April 9.—For erection of seventy-six houses for the working classes on a site near Church Lane, for the Urban District Council (whole of the works or separate trades). Mr. A. Hartley, architect and surveyor, Council Offices, Normanton.

Oakdale (Mon.).—April 7.—For erection of a hospital at Oakdale Village, for the Oakdale Hospital Committee. Send names and £2 2*s.* deposit by March 24 to Mr. A. F. Webb, M.S.A., architect and surveyor, Blackwood.

Oswaldtwistle.—For the masonry, plumbing, plastering, slating, painting, ironwork, heating, and ventilation trades required in St. Paul's School extensions (whole or any of the trades). Mr. G. Riley, architect, 24 Albert Street, Oswaldtwistle.

Rye (Sussex).—March 28.—For alterations to the existing workhouse, kitchen, and offices. Mr. H. M. Jeffery, architect, 25 High Street, Rye, or 1b Havelock Road, Hastings.

St. Helens (Lancs.).—March 23.—For erection of the Allanson Street Council School in respect of the following trades, for the Education Committee—viz.: (1) plastering and slating; (2) plumbing, gasfitting, glazing, and painting. Deposit £1 1*s.* in respect of each trade. Messrs. Biram & Fletcher, architects, George Street, St. Helens.

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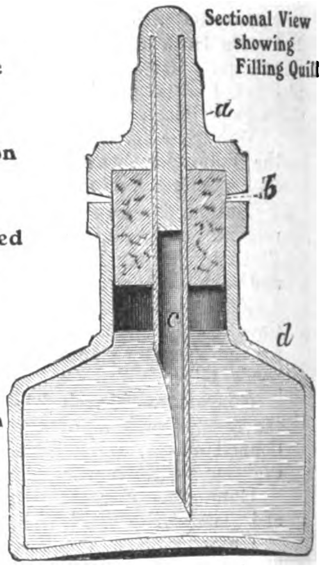

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SCOTLAND.—March 27.—For the execution of painter work and jointless flooring for extensions at Carolina Port generating station, Dundee, for the Corporation. Mr. H. Richardson, M.I.E.E., general manager and engineer, Electricity Department, Dundee.

SCOTLAND.—March 28.—For the following works required in connection with the proposed extension to Morgue Block, Belvedere Hospital—viz.: (1) brick and mason work; (2) joiner and glazier work; (3) slater and plaster work; (4) plumber, &c., work; (5) tile work; (6) heating work; and (7) painter work—for the Corporation. The Office of Public Works, 64 Cochrane Street, Glasgow.

SCOTLAND.—March 31.—For the execution of (1) joiner; (2) slater and rough-cast; (3) plumber; (4) plasterer; (5) tile and marble works, of an hotel proposed to be constructed at Gleneagles, Perthshire, for Gleneagles, Ltd. Deposit £2 2s. Messrs. Formans & M'Call, C.E., 160 Hope Street, Glasgow.

SILLOTH.—For erection of additional floors and roof at Silloth Mills, for Messrs. Carr's flour mills. Send in names at once to Mr. H. E. Scarborough, architect and engineer, 22 Lowther Street, Carlisle.

SOUTH CROSLAND.—April 4.—For the various works required in the construction of a filter house, reinforced concrete tanks, &c., on the north side of Blackmoorfoot reservoir, South Crosland, near Huddersfield, for the Corporation of Huddersfield. The Waterworks Engineer, Town Hall, Huddersfield.

SOWERBY BRIDGE.—March 21.—For the labour required in erecting a retaining wall and fence wall in Wood Nook Lane, for the Urban District Council. Mr. J. Eastwood, A.M.I.C.E., engineer and surveyor, Council Offices, Sowerby Bridge.

SPALDING.—March 27.—For erection and completion of eighteen cottages and outbuildings in the parish of Pinchbeck, for the Spalding Rural District Council—viz.: two pairs at Pode Hole, one pair at Horse and Jockey, one pair at the Feathers in village, two pairs near Two Plank Bridge, three pairs on Surfleet main road. Messrs. Davis & Crowley, architects, 6 Double Street, Spalding, or 2 York Row, Wisbech.

SQUIRRELS HEATH.—March 23.—For proposed extensions of All Saints' Church, Squirrels Heath. Send names and £1 deposit by March 23 to Mr. S. Phillips Dales, architect, Lindum Chambers, Romford.

STONEGATE.—March 25.—For alterations and additions to a farm at Stonegate, near Lealholm, for Sir Francis Ley, Bart. Mr. A. E. Young, architect and surveyor, 77 Baxter Gate, Whitby.

SUNDERLAND.—March 24.—For erection of shops and offices, Burdon Road (whole tenders), for the North Eastern Railway Co. Mr. William Bell, company's architect, Irving House, Westgate Road, Newcastle-on-Tyne. (See advertisement.)

WALES.—For an extension of the works offices at Grangetown, Cardiff, for the Cardiff Gas Light and Coke Co. Deposit 10s. 6d. Mr. G. Clarry, general manager and secretary, Gas Offices, Cardiff.

WALES.—March 24.—For erection of minister's house, for the C.M. Trustees at Bettwsycoed. Mr. T. Griffith, land agent, Gwydyr Ucha, Llanrwst.

WALES.—March 24.—For erection of detached dwelling-house for the Gwydyr Estate on site adjoining Fronheulog, Bettwsycoed. Mr. T. Griffith, land agent, Gwydyr Ucha, Llanrwst.

WALES.—March 24.—For erection and completion of tower to the parish church of Llansamlet, for the Rev. J. Martin Griffiths and the Building Committee. Send names and £2 2s. deposit by March 24 to Mr. G. Moxham, F.R.I.B.A., architect, 18 Castle Street, Swansea.

WALES.—March 27.—For rebuilding Smyrna Congregational chapel, Langain. Messrs. George Morgan & Son, architects, 24 King Street, Carmarthen.

WALES.—March 28.—For erection of infirmary buildings at Ruthin, for the Guardians. Deposit £1 1s. Mr. F. A. Roberts, M.S.A., architect, Earl Chambers, Mold.

WALES.—March 28.—For building vestry room and other buildings at Blaenanerch. Mr. J. Jones, architect, Dolwen, Rhydlewis.

WALES.—March 31.—For erection of a pair of cottages at Newton Nottage, Porthcawl, for the Glamorgan County Council. The Police Station, Porthcawl, and the County Hall, Cardiff.

WALES.—March 31.—The Carnarvonshire Education Committee propose during the ensuing summer to carry out schemes of repair and minor improvements, including painting, upon the following schools—viz.: (1) Penmorfa; (2) Morfa Bychan; (3) Maenan; (4) Abersoch; (5) Chwilog; (6) Hirael; (7) Llithfaen; (8) Pentreucha; (9) Rhydyclafdy; (10) Capel Curig; (11) Dwygyfylchchi; (12) Llaniestyn; (13) Nantperis; (14) Rhiw; (15) Trefriw; (16) Carneddi; (17) Golan; (18) Llanwnda; (19) Penisarwaen; (20) Craigydon. Send names by March 31 to Mr. E. R. Davies, secretary of education, County Education Offices, Carnarvon.

WALES.—April 3.—For erection of six semi-detached cottages in three blocks at the cottage homes, Bridgend, for the Guardians of Bridgend and Cowbridge Union. Mr. P. J. Thomas, architect and surveyor, Bridgend.

WALES.—April 7.—For erection and completion of a workmen's model lodging-house near the Beech Tree Hotel, Ystrad Mynach, for the Directors of the Ystrad Mynach Model Lodging-house Co., Ltd. Mr. H. G. Jones, architect and surveyor, Bank Chambers, Hengoed.

TENDERS.

BECKENHAM.

For the erection of a public elementary school in Balgowan Road, for the Urban District Council.

Hill & Gurr	£20,600	0	0
Heath & Son	19,190	0	0
Jones & Andrews	18,950	0	0
F. & G. Foster	18,489	0	0
Marsland & Sons	18,448	0	0
Smith & Sons, Ltd.	18,140	0	0
Longley & Co.	17,988	0	0
Brand, Pettit & Co.	17,960	0	0
Elvins & Sons	17,770	0	0
Podger & Sons	17,680	0	0
Godden & Sons	17,157	0	0
Lowe & Sons	17,138	0	0
Cook & Sons	17,130	0	0
Lawrence & Son	16,972	0	0
Graham & Co.	16,735	0	0
Moss & Sons	16,400	0	0
Elliman	15,009	0	0
WOODHAM & SONS, Bromley (*accepted*)	14,999	0	0

CASTLEFORD.

For the erection of house and shop in Smawthorne Lane. Messrs. HOLT & SHEPHERD, architects, Castleford.

Accepted tenders.

L. J. Gallagher	£201	0	0
T. Mawson & Son	95	10	0
T. Clarkson & Son	42	15	0
T. Dalton & Son	21	6	3
F. Beighton	15	0	0
F. Adams	5	15	6

All of Castleford.

FEATHERSTONE.

For the erection of 149 working-class dwellings on the Church Fields site, near Station Lane, for the Urban District Council. Mr. S. CHESNEY, A.R.I.B.A., architect, Featherstone, Yorks.

W. BIRCH & SONS, York (*provisionally accepted*)	£23,571	12	0

HENDON.

For erection of fifty artisans' dwellings at Child's Hill, for the Hendon Urban District Council. Mr. GEORGE HORNBLOWER, architect, Portland Place, W. No quantities.

Allen	£15,232	0	0
Peddle	15,069	0	0
Wright	14,884	0	0
Tout	11,797	0	0
Cooper	11,790	0	0
Bosworth & Lowe	11,551	0	0
Bow	11,499	0	0
Rowley Bros.	11,295	0	0
Evans	11,234	0	0
King	11,193	0	0
Smyrk	11,147	0	0
O. P. Drever, Ltd.	11,051	0	0
Galliford	10,980	0	0
King & Sons	10,875	0	0
Guttridge & Son	10,040	0	0
G. H. GIBSON & SONS, High Wycombe (*recommended*)	9,960	0	0

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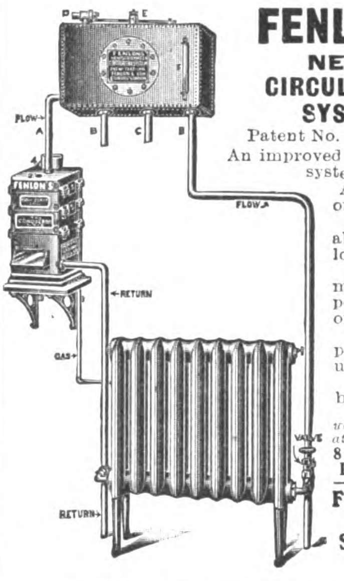

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HIGH WYCOMBE.

For the erection of a Grammar School to accommodate 210 boys. Mr. **ARTHUR VERNON**, P.P.S.I., architect 11 Queen Victoria Street, London, E.C., and High Wycombe.

Fassnidge & Son	£10,730	0	0
Franklin, Ltd.	10,720	0	0
Webster & Cannon	10,498	0	0
Falkner & Son	10,352	0	0
Gibson & Son	10,346	0	0
Lovell & Son	9,963	0	0
Holland & Hannen	9,898	0	0
Moss & Son	9,833	0	0
Lawrence & Son	9,810	0	0
HUNT & SON (*accepted*)	9,533	0	0

For the erection of master's house and boarding accommodation. Mr. **ARTHUR VERNON**, P.P.S.I., architect, 11 Queen Victoria Street, London, E.C., and High Wycombe.

Nash & Son	£4,550	0	0
Gibson & Son	4,480	0	0
HUNT & SON (*accepted*)	4,399	0	0

For the erection of cycle house and workshop at High Wycombe Grammar School. Mr. **ARTHUR VERNON**, P.P.S.I., 11 Queen Victoria Street, London, E.C., and High Wycombe.

HUNT & SON (*accepted*)	£260	0	0

IRELAND.

For the erection of a central dispensary at Meath Hospital, Dublin, for the County Dublin County Council. Mr. T. F. **MCNAMARA**, architect, Dublin.

B. **PEMBERTON** (*accepted*)	£1,249	0	0

Seventeen tenders were received.

KIRKBURTON.

For the various trades required in erection of six houses at Paddock, for the Kirkburton Urban District Council. Messrs. J. B. **ABBEY & SON**, architects, Huddersfield.

Accepted tenders.

Biltcliffe, mason, Skelmanthorpe	£530	0	0
Ansley & Sons, joiner, Crosland Moor	298	0	0
Marsden & Sons, plumber, Huddersfield	83	19	0
Cooke, concreter, Huddersfield	69	10	6
Peaker, plasterer, Meltham	63	0	0
Wild & Sons, slater, Ashton-under-Lyne	58	16	0
Moulson, painter, Kirkburton	18	17	6
Total	£1,122	3	0

LONDON.

For installing a heating apparatus at the County Secondary School, Brockley, Lewisham, now in course of enlargement, for the London County Council.

Palowkar & Sons	£1,396	0	0
Brightside Foundry and Engineering Co.	1,390	0	0
Cormack & Sons	1,381	10	0
Arding & Dyne	1,375	15	0
Cash & Co.	1,264	0	0
Deane & Beal	1,245	0	0
J. & F. May	1,221	15	0
Cannon & Hefford	1,197	0	0
G. & E. Bradley	1,145	0	0
W. G. **CANNON & SONS, LTD.**, 107 London Road, Southwark (*recommended*)	1,138	0	0
Architect's estimate	1,100	0	0

For installing electric lighting apparatus at the County Secondary school, Brockley, for the London County Council.

Dickinson & Co.	£907	0	0
Weston & Son	690	0	0
Taylor & Co.	688	0	0
Cathcart & Co.	600	0	0
Lund Bros. & Co.	565	10	0
A. Newman, Ltd.	559	10	0
JOHN C. CHRISTIE, 3 and 5 Mansell Street, Aldgate (*recommended*)	552	0	0
Chief engineer's estimate	680	0	0

MORLEY.

For the rebuilding and extending the Alexandra Mill, Baker Street, for Mr. W. B. Stockwell. Messrs. W. **HANSTOCK & SON**, architects, Batley. Quantities by the Architects.

Accepted tenders.

Clegg & Sons, masons and joiners, 10 Wesley Street.
Stakes, plumber, 5 and 6 Savile Square.
Wilson, plasterer, Cross Hall View.
Rogerson, slater.
Hirst, painter, Albion Street.
Newsome & Askham, ironfounders, Batley.
Rest of Morley.

OUNDLE.

For the erection of buildings in connection with the isolation hospital for the Rural and Urban District Council. Messrs. **TRAYLEN & SON**, architects, Stamford.

Hinson	£1,370	0	0
Pettitt	1,299	0	0
Hawkins & Son	1,236	0	0
Chitham & Co.	1,212	0	0
Drevor & Son	1,204	0	0
Bowman	1,199	0	0
Henson	1,167	0	0
Smith & Son	1,157	0	0
W. **FREEMAN**, Oundle (*accepted*)	1,136	0	0
Howes & Son	1,117	0	0

SHIBDEN.

For erection of a pair of semi-detached houses near Stump Cross. Messrs. **WALSH & NICHOLAS**, architects, Halifax.

Accepted tenders.

J. Briggs & Son, mason, 35 Marion Street, Brighouse.
S. Benn, joiner, Queensbury.
Bolton Bros., plumber, Gibbet Street, Halifax.
H. Castle & Co., slater and plasterer, 10 Daisy Street, Brighouse.

THE GENERAL ELECTRIC COMPANY, LIMITED.

BETWEEN six and seven hundred people were present at the twenty-second annual dinner of the General Electric Company at the Trocadero Restaurant, W., on Saturday last, the 14th inst., under the chairmanship of Mr. H. Hirst.

Amongst those present were Mr. W. Duddell, F.R.S. (President of the Institution of Electrical Engineers), Mr. L. S. Amery, M.P., Hon. Sir John M'Call, M.D. (Agent-General for Tasmania), Colonel R. E. Crompton, C.B., R.E., Mr. R. A. Chattock (President of the Incorporated Municipal Electrical Association), Mr. R. K. Morcom, Mr. A. Bruce Anderson (Chairman, the British Electrical and Allied Manufacturers' Association), Mr. W. M. Mordey (Past President of the Institution of Electrical Engineers), Mr. Richard Jebb, Mr. J. Hunter Gray, Mr. A. Rashleigh Phipps (Past President of the Electrical Contractors' Association), the Hon. John Howard (Agent-General for Nova Scotia), Mr. Richard Reid (Agent-General for Ontario), Dr. A. Railing, Mr. L. G. Byng and Mr. M. J. Railing (directors), Mr. G. G. Bell (President of the Associated Municipal Electrical Engineers, Greater London), Mr. W. Reynolds, L.C.C., and Mr. Horace Boot.

After the loyal toasts, Mr. H. Hirst proposed "Electrical Industries within the Empire," and at the outset indulged in a retrospect. The past two years, he said, had been full of good work. They had shared in the general prosperity, so much so that they found it necessary to extend their works. They had added to the number of workmen and of the staff, and had, he thought, been successful in raising their employees' standard of value simultaneously with their standard of living. They had just voted a considerable sum for the erection of club buildings, both for their workpeople and staff. They had extended most of their trading departments, and had gone ahead considerably in the acquisition of rights to supply whole cities with electric light and power. They had started the new Pirelli-General Cable Works at Southampton. Wire and cable were up to the present the only electrical commodities which they had not produced themselves. When these works were finished they would have entered the ranks of the few firms in the world who manufactured everything electrical, instead of only manufacturing some particular lines; in fact, he believed they were the only firm within the British Empire that could pride itself on this achievement.

They had continued the work of establishing themselves in the Dominions oversea. There were G.E.C. organisati in Calcutta, Madras, Johannesburg, Cape Town, Durban, Sydney, Melbourne, and Wellington, to which had been recently added Toronto—all replicas of their establishment at home—youthful G.E.C.'s, each managed by a staff that included some sixty to seventy young men trained by them and sent out to extend the borders of their influence and to preach the gospel of the three letters G.E.C. To-day their business was administered in London from eleven or twelve scattered buildings in or around Queen Victoria Street. They had to decide on the bold step of finding a site in London suitable for housing under one roof the whole of their present establishment, while allowing for the considerable increase at which they were aiming. They had secured a site of some 26,000 square feet in Kingsway. The services of Messrs. G. & T. S. Vickery were secured to erect a building as high as the L.C.C. would permit them to go, and he had reason to believe that when completed it would be one of the largest and finest electrical establishments in the world. During some recent musings his mind dwelt on the close connection between the future of the electrical industry and the future of the Empire. At the outset it struck him that there might be to-day no ideals of Empire if there were no such force as electricity. Easy communication and cheap intercourse would be potent factors in the future both for Imperial and electrical development. It was for electrical engineers to bring present means of communication, whether it be by the use of cable or by wireless, to such a state of perfection that, say, 2*s.* 6*d.* or 1*s.* would be the cost not per word, but per telegram, to the farthest corner of the world; and he saw no reason for doubting their eventual success. With such a vision, surely one ought to aim at certain business ideals—one Common Law, one Patent Law, one Trades Mark Act should prevail throughout the King's Dominions. An effort should be made to establish uniform coinage, uniform weights and measures, while proper classification of goods and co-ordination of statistics would be most helpful.

Mr. L. S. Amery, M.P., who responded, drew a witty parallel between Parliament and the electrical industry.

Hon. Sir John M'Call, M.D. (Agent-General for Tasmania), proposed "The General Electric Company." It was, he said, a wonderful company. Started some twenty-seven years ago in quite a small way, it now employed over 10,000 hands, and was performing a function of which many companies must be envious—it had paid a regular annual dividend. It had grown to be the largest purely British company of its kind in the United Kingdom, and had rendered great service to the Empire by starting subsidiary companies in the Dominions beyond the seas.

Mr. M. J. Railing (director), in his response, said it was necessary for concerns like the General Electric Company to keep well in touch with their employés, especially the young talent, who some day might be sent abroad, and provide opportunities for their advancement. Mr. Railing, in conclusion, submitted the toast of "Scientific Institutions."

Mr. W. Duddell, F.R.S. (President of the Institution of Electrical Engineers), and Dr. Alexander Russell, M.A., D.Sc., acknowledged the toast.

Mr. L. G. Byng proposed "Our Guests." Hon. J. G. Jenkins and Mr. E. Manville responded.

The health of the Chairman was submitted by Mr. A. J. Walters, K.C. Mr. Hirst briefly acknowledged the toast, and, on his proposition, those present drank to the success of the staff of the company at home and abroad.

An excellent programme was afterwards enjoyed, the contributors being Miss Violet Essex, Miss Helen Mar, Miss Marie Dainton, Mr. Arthur Strugnell, Mr. Malcolm Scott and Mr. John Bromley (at the piano). The Blue Austrian Band played during and after dinner.

MESSRS. WILLCOX & RAIKES, engineers, have been engaged by the Kidderminster Town Council to prepare and carry out schemes of sewerage and sewage disposal at a fee of £1,000.

THE annual meeting of the Cambrian Archæological Association takes place this year at Dolgelley. Usually the meeting is held in the second week of August, but this year, to meet what appears to be the more general convenience of the members, it has been fixed for the third week of that month (August 17-22). Sir A. Osmond Williams, the Lord-Lieutenant of Merionethshire, has consented to be president, in succession to Dr. W. Boyd Dawkins. The local secretaries for the meeting are Mr. R. Jones Morris, Gwrachynys, Talsarnau, and Mr. J. Griffith, the County School, Dolgelley, with the Rev. J. Fisher, Cefn Rectory, St. Asaph, as the general secretary.

VARIETIES.

THE Huddersfield Education Committee have agreed to pay £100 a year to the borough engineer for his services as school architect.

THE Baker Street Station Hotel, for Messrs. Lyons & Co., will contain 700 bedrooms. The amended plans have been passed.

MR. SALOMON FALK, of Earl's Court Square, and The Bungalow, Sunningdale, managing director of the firm of Messrs. Falk Stadelmann & Co., Ltd., 83-87 Farringdon Street, E.C., who died on November 29, left £122,133.

THE Barnsley Education Committee have decided to build an open-air school for sixty children on the Mount Vernon Estate. The cost, including site and equipment, is estimated at £2,200.

MESSRS. HICKS & CHARLEWOOD, of Newcastle-on-Tyne, are the architects for a proposed church at Scotswood. About £2,000 out of a required £6,500 has been already collected. The scheme was prepared a few years ago, but had to be abandoned owing to insufficient financial support.

AMUSEMENTS, PARKS & EXHIBITIONS, LTD., have secured a lease from Birmingham Corporation of fifty-four acres of land, including a large reservoir, at Aston, for the erection of a White City Exhibition. It is proposed to spend not less than £30,000 in buildings which will be chiefly in reinforced concrete.

THE Magistrates have authorised the erection of a winter garden at the Cliff Hotel, Gorleston-on-Sea, from plans prepared by Mr. A. W. Bradshaw, manager of the Woolpack Hotel, Warwick, who is a qualified architect. The structure will be provided with an oak dancing-floor having a superficial area of about a thousand square feet.

IN view of the continued interest shown by students and the public in the collection of Japanese colour-prints, lent to the Victoria and Albert Museum by Mr. R. Leicester Harmsworth, M.P., and exhibited in Rooms 71-73, it has been decided, with Mr. Harmsworth's consent, to extend the period of exhibition until the end of June.

THE St. Helens Health Committee last week passed a resolution to apply for sanction to borrow £23,000 for the purpose of acquiring two sites and erecting on one tenement dwellings to accommodate ninety families, and on the other self-contained cottages to accommodate thirty families. The committee consider that 500 extra workmen's houses are required.

SCHEMES for the building of about 1,000 houses in the Gelligaer parish by private enterprise are in contemplation. At a meeting of the Gelligaer Council on Tuesday, Mr. George Kenshole, architect, Bargoed, attended and explained he had been instructed to prepare plans for 600 houses at Tir-y-Berth Farm, Pengam, and for 360 houses on the Cascade estate, Pengam. The latter houses would be built between Penpedairheol and Cascade House, and his clients were in a hurry to proceed.

MR. A. R. TUDMAN, electrical engineer to the Colwyn Bay Urban District Council, has prepared a scheme for the erection of a new electricity generating station in connection with the destructor works at Bron-y-Nant, at an estimated cost of £21,000. If the scheme is not adopted, extensions of the present works will be required, costing about £10,000 for the season of 1915. The present works would be used as a distributing station. The destructor and lighting schemes are to be submitted to an expert.

AT a special meeting of the Belfast Corporation on Monday last to deal with the housing scheme, it was decided to abandon the plans for two-roomed houses and to erect 252 three-roomed houses. The following resolution was agreed to: "That so much of the minute of the Public Health Committee of February 3, 1914, as recommended the acceptance of the tender of Messrs. Jas. Hogg & Sons for the erection of three-roomed houses at £119 15*s.* per house, with £8 12*s.* 6*d.* per terminal gable added, and subject to variations in accordance with the terms of the general conditions of the contract, be accepted."

THE Garden Suburb Builders, Ltd., of which Society Mr. Henry Vivian is the chairman, with Lord Howick, Mr. J. F. L. Brunner, M.P., Mr. G. L. Sutcliffe, F.R.I.B.A., Mr. J. H. Greenhalgh, Mr. W. Hutchings, and Mr. F. Litchfield as members of the committee, reports that the considerable rise in the cost of building material during 1913 increased the difficulties of all engaged in estate development. The property built for their clients on the Hampstead Garden Suburb is in good demand, and the accounts show building contracts, to the value of £108,065, completed during the eleven months, for which the balance sheet has just been prepared.

THE
Architect and Contract Reporter.
FRIDAY, MARCH 27, 1914.

EDITORIAL NOTICES.

The Editor will always be pleased to examine drawings or articles with a view to publication, but cannot be responsible for the safety of those sent, though every reasonable care will be taken. Contributors desiring payment should clearly state their wishes. No payment will be made until after publication, and a commission to prepare articles or drawings does not necessarily imply acceptance or approval.

No communication can be inserted unless authenticated by the name and address of the writer—not in every case for publication, but as a guarantee of good faith.

We have upon our staff a very eminent Barrister, who will be glad to answer in the columns of this paper any legal question that may be of interest to our readers. All letters must be addressed "Legal Adviser," Office of "The Architect," Imperial Buildings, Ludgate Circus, London, E.C.

The Editor will be glad to receive from Architects in London and the Provinces results of Competitions and Tenders and other particulars of Works in progress in which they may be interested.

TENDERS, ETC.

⁂ *As great disappointment is frequently expressed at the nonappearance of Contracts Open, Tenders, &c., it is particularly requested that information of this description be forwarded to the Office, Imperial Buildings, Ludgate Circus, London, E.C., not later than 2 P.M. on Thursdays.*

COMPETITIONS OPEN.

East Preston.—The Southstrand Sports Club (newly formed) invite plans for a clubhouse to be erected on the Southstrand Estate, East Preston, near Worthing. The successful competitor will be instructed to carry out the work, and will receive, in addition to the usual fees, a bonus on completion of the building. A plan of the site and full particulars can be obtained of Mr. William Hollis, surveyor, Southstrand Estate Offices, Church End, Finchley, London.

Glasgow.—May 1.—The Corporation are prepared to receive from sculptors competitive models and relative offers for four groups of symbolical sculpture to be placed on the abutments of the new bridge at Radnor Street, Kelvingrove Park, Glasgow. Copies of the conditions of the competition may be obtained on application to Mr. J. Lindsay, town clerk, City Chambers, Glasgow.

Grimsby.—June 2.—The Building Committee of the proposed Constitutional Club invite designs for premises to be erected at the corner of Victoria Street and Upper Spring Street, at an estimated cost of £3,000. Premiums of £40, £20, and £10 are offered. Deposit of £2 2s. will be sent back on receipt of designs or on return of the particulars within 10 days. Mr. H. W. V. Sheckell, secretary, Constitutional Club, Victoria Street, Grimsby.

Hendon.—May 11.—The Education Committee will be prepared to receive competitive designs for a school at Hale Grove Gardens, Mill Hill. Conditions of competition and plan of site may be obtained from Mr. James Anderson, secretary to the committee, Council Offices, Hendon, N.W.

Hythe.—May 30.—The Town Council invite designs for a concert hall and public shelter, for which premiums of fifty, twenty-five, and ten guineas will be awarded. Deposit £1 1s. (returnable). Condition, site plan, &c., may be obtained on application to Mr. Bernard C. Drake, town clerk, Hythe, Kent. (See advertisement.)

London.—May 4.—The Bridge House Estates Committee of the Corporation of the City of London invite designs from British architects for the architectural treatment of the new St. Paul's Bridge. The conditions of the competition and instructions may be obtained upon payment of a deposit of £3 3s., which will be returned on receipt of a design in accordance with the conditions. A premium of £300 is offered for the design which may be placed first, and further premiums of £200 and £100 respectively. The committee will be advised by Sir William Emerson, P.P.R.I.B.A., as assessor, whose decision will govern the award of the premiums and be final and binding in all stages of the competition. The Town Clerk, Guildhall, London, E.C.

Mold.—The Urban District Council invite architects to submit plans, &c., for a fire station and caretaker's house, to be erected at Earl Road. Further particulars may be obtained from Mr. D. Thomas, surveyor, Town Hall, Mold.

Sacriston.—April 15.—The Trustees of the Literary Institute are prepared to receive plans for the proposed Institute. All information can be obtained from Mr. John Walker, secretary, 11 Eliza Street, Sacriston, Durham.

CONTRACTS OPEN.

Ashington.—April 4.—For erection and completion of twelve cottages, for the Ashington Industrial Co-operative Society. Mr. O. Blythe, architect, Ashington, Northumberland.

Balby-with-Hexthorpe.—April 24.—The West Riding Education Committee invite whole or separate tenders for the following works at the Council School—viz.: alterations, new screens, &c. (builder and joiner). The Education Architect, County Hall, Wakefield. Send £1 deposit by separate letter to the West Riding Treasurer, County Hall, Wakefield.

Barnoldswick.—For the erection and completion of nine pairs of semi-detached cottages, for the Committee of the Barnoldswick Co-operative Industrial Society, Ltd. Deposit £1 1s. Mr. F. E. L. Harris, architect, Co-operative Wholesale Society, Ltd., 1 Balloon Street, Manchester.

Bedwas.—March 28.—For erection of a residence at Newport Road, Thomastown, near Bedwas, Mon., for Dr. J. R. H. MacManus. Send names and £2 2s. deposit by March 28 to Mr. J. T. Jenkins, M.S.A., architect and surveyor, Porth, Glam.

Bournemouth.—March 30.—For erection of elementary schools and alterations to existing schools, Shelbourne Road, Malmesbury Park, for the Education Committee. Deposit £1 1s. The Borough Engineer, Municipal Buildings, Bournemouth.

(*Continued on page 15.*)

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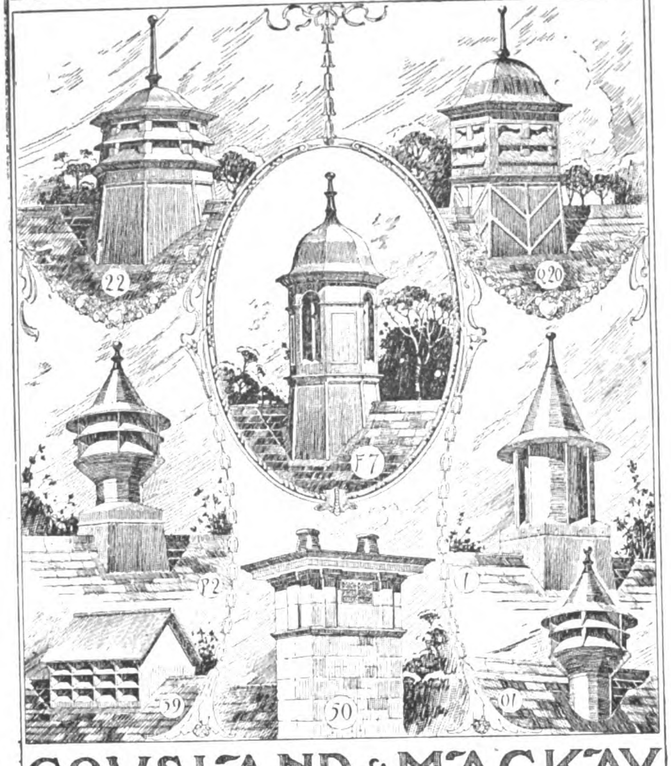

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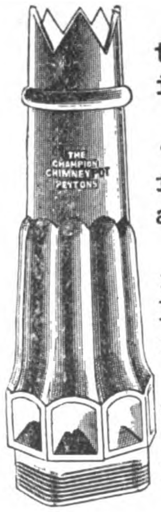

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Clitheroe.—For erection and completion of warehouse, hall, &c., for the Committee of the Clitheroe Equitable Co-operative Society, Ltd. Deposit £1 1*s*. Mr. F. E. L. Harris, architect, the Co-operative Wholesale Society, 1 Balloon Street, Manchester.

Cowlers Ley.—March 30.—For the various works required in erection of branch store and dwelling-house, Cowlers Ley, Milnsbridge, for the Milnsbridge Perseverance Co-operative Society, Ltd. Messrs. Lunn & Kaye, architects and surveyors, Huddersfield and Milnsbridge.

Cowlers Ley.—April 3.—For the various works required to be done in the erection of sixteen dwelling-houses (part of the scheme) in three separate blocks, at Cowlers Ley, Milnsbridge, for the Linthwaite Urban District Council. The mason's work will be for drainage and excavations for basements, and for labour only walling "Winget" concrete blocks. Other trades as usual. Contractors may tender for the works required in either one, two, or three blocks. Mr. J. Ainley, architect, Chapel Street, Slaithwaite.

Craghead.—For erection of forty-two houses at Craghead, Durham, for Messrs. Thos. Hedley & Bros. Send names and £2 2*s*. deposit to Mr. J. W. Rounthwaite, A.R.I.B.A., 13 Mosley Street, Newcastle-on-Tyne.

Darton.—March 31.—For the various works required in erection and completion of a variety theatre, Perkin Hill, Darton, Yorks. Messrs. Crawshaw & Wilkinson, architects, 13 Regent Street, Barnsley.

Edmonton.—April 14.—For erection of a sanitary convenience near Lower Edmonton railway station, for the Edmonton Urban District Council. Mr. C. Brown, engineer and surveyor, Town Hall, Edmonton.

Gorton.—March 31.—For erection and completion of a new building in their works at Gorton, for Messrs. Beyer, Peacock & Co., Ltd. Deposit £1 1*s*. Messrs. Beyer, Peacock & Co., Ltd., Gorton Foundry, Manchester.

Grimsby.—For new verandahs and iron staircases at the Grimsby and District Hospital. Mr. H. C. Scaping, architect, Court Chambers, Grimsby.

Hastings.—April 14.—For erection of two cottages in Cackle Street, Brede, for the Corporation. Mr. P. H. Palmer, M.I.C.E., borough engineer, Town Hall, Hastings.

Heckmondwike.—April 6.—For construction of the rubble fence walling around the new circular sewage filters at the sewage works, The Bottoms, Heckmondwike, for the Liversedge Urban District Council. Mr. A. Rothera, engineer and surveyor, Council Offices, Liversedge.

Hereford.—April 14.—For erection and completion of sixty-two cottages, subject to the sanction of the Local Government Board to the necessary loan, for the Town Council. Tenders may be made for the erection and completion of the whole of the cottages, or any of the following—viz.: (Type A) thirty-six cottages in nine blocks of four each; (B) fourteen cottages in pairs; (C) four cottages in one block; (D) eight cottages in two blocks of four each. Deposit 10*s*. 6*d*. Mr. J. Parker, city surveyor, Town Hall, Hereford.

Hollybush (Mon.).—April 4.—For erection of twelve houses adjoining the new siding recently put in near M[illegible]ham's Colliery, for the Abernant Building Syndicate. Mr. R. Simmonds, architect and surveyor, Blackwood.

Holt.—April 15.—For erection of a parish hall at Holt, Norfolk. Deposit £1. Messrs. C. R. Baker King & Harold C. King, architects, 2 Dean's Yard, Westminster, S.W.

Houghton-le-Spring.—April 20.—For erection of a block of two children's homes, for the Guardians. Deposit £1 1*s*. Messrs. J. G. & R. G. Cowe, architects, Chester-le-Street.

Ireland.—March 30.—For erection and completion of a residence at Perrott's Avenue, College Road, Cork. Messrs. W. H. Hill & Son, architects, 28 South Mall, Cork.

Ireland.—April 3.—For erection of a dispensary residence at Burgatia, Rosscarbery, for the Guardians of Clonakilty Union. Mr. J. J. O'Crowley, architect, Clonakilty.

Ireland.—April 4.—For erection of a medical officer's residence and dispensary, &c., at Kiltegan, county Wicklow, for the Guardians of Baltinglass Union, at a cost not exceeding £1,205. Mr. J. R. Dagg, clerk, Baltinglass.

Ireland.—April 6.—For erection of an auxiliary store at Adelaide and Windsor, for the Great Northern Railway Co. (Ireland). Deposit £1 1*s*. The Engineer's Offices at Dublin and Belfast, and Mr. T. Morrison, secretary, Amiens Street Terminus, Dublin.

Ireland.—April 11.—For erection of a retort house and coal store in concrete, or alternatively in stone, at their gas-works in Clonmel, for the Gas Committee. Deposit £1 1*s*. Mr. H. O'Connor, A.M.I.C.E., 1 Drummond Place, Edinburgh.

Ireland.—April 20.—For building a Labour Exchange and Divisional Office at Lord Edward Street, Dublin. Deposit £1. Mr. H. Williams, secretary, Office of Public Works, Dublin.

Ireland.—April 21.—For building sixty labourers' cottages, for the Lisburn Rural District Council. Charge for plans, &c., 5*s*. Mr. W. Sinclair, clerk, R.D.C. Offices, Union Workhouse, Lisburn.

Isle of Man.—For building a new hall, for the Trustees of the Michael P.M. chapel. Messrs. Ray, architects, Douglas, or Mr. J. Corjeag, Michael.

Isle of Wight.—April 14.—For erection of cottage and outbuildings at Redhill Lane, Godshill, for the Isle of Wight County Council. Messrs. Stratton & Millgate, architects, Quay Street, Newport.

Kelsick.—March 28.—For erection of a farmhouse at Kelsick, for Mr. J. Timperon. Send names by March 28 to Mr. G. Armstrong, architect, 24 Bank Street, Carlisle.

Knottingley.—April 24.—The West Riding Education Committee invite whole or separate tenders for the following works at Knottingley Holes Council School—viz.: new folding partitions, conveniences, &c. (builder, joiner, and plumber). The Education Architect, County Hall, Wakefield. Send £1 deposit by separate letter to the West Riding Treasurer, County Hall, Wakefield.

Landkey.—For erection of two cottages at Landkey, Devon, for Mr. W. E. Snell. Mr. H. S. Johnson, architect and surveyor, 56 Boutport Street, Barnstaple.

Linthwaite.—April 1.—For the various works required in erection of additions to mill premises at Linthwaite. Messrs. Lunn & Kaye, architects and surveyors, Milnsbridge and Huddersfield.

Liverpool.—March 30.—For carrying out works of reconstruction to provide a Roman Catholic chapel at the Brownlow Hill institution, for the Select Vestry. Mr. G. W. Coster, clerk to Select Vestry, Parish Offices, Brownlow Hill, Liverpool.

London.—April 3.—For repairs and alterations to their premises, No. 40 Great Ormond Street, W.C., for the Royal Standard Benefit Society. Send applications and £1 deposit by April 3 to Messrs. Higgins & Thomerson, Licentiates R.I.B.A., architects to the Society, 9 Finsbury Square, E.C. (See advertisement.)

London.—April 7.—For repairs and redecoration works, mortuary and coroner's court, for the Deptford Borough Council. The Borough Surveyor, Town Hall, New Cross Road, S.E.

Lydd.—April 3.—For the erection of cloakroom at the Council School, for the Kent Education Committee. Mr. W. J. Spicer, correspondent, 19 Bank Street, Ashford, or Mr. F. W. Crook, secretary, Sessions House, Maidstone.

Manchester.—April 15.—For supplying and fixing tiled dados at the Heald Place Municipal school, Rusholme, for the Manchester Education Committee. Deposit £1 1*s*. The Education Offices, Deansgate, Manchester.

Milnsbridge.—April 1.—For erection of a furniture depository in Saville Street. Mr. A. E. Rodgers, architect, Cowlers Ley, Milnsbridge.

Northampton.—April 15.—For erection of Northampton new post office. Drawings, specification, and a copy of the conditions and form of contract may be seen on application to the Postmaster, Northampton. Bills of quantities may be obtained on payment of £1 1*s*. at H.M. Office of Works, Storey's Gate, London, S.W. (See advertisement.)

Normanton.—April 9.—For erection of seventy-six houses for the working classes on a site near Church Lane, for the Urban District Council (whole of the works or separate trades). Mr. A. Hartley, architect and surveyor, Council Offices, Normanton.

Nymphayes.—March 30.—For erection of small farmhouse at Nymphayes, near Lapford, North Devon, for Mr. J. Vicary. Send applications and £1 1*s*. deposit by March 30 to Mr. E. M. Leest, M.S.A., architect, 28 Ker Street, Devonport.

Oswestry.—March 30.—For erection of a lodge at Cae Glas Park, for the Town Council. Deposit 10*s*. 6*d*. Mr. G. W. Lacey, C.E., borough engineer and surveyor, Guildhall, Oswestry.

Oulton-with-Woodlesford.—April 24.—The West Riding Education Committee invite whole or separate tenders for the following works in enlargement of Council School—viz.: builder, joiner, slater, plumber, plasterer, and painter. The Education Architect, County Hall, Wakefield. Send £1 deposit by separate letter to the West Riding Treasurer, County Hall, Wakefield.

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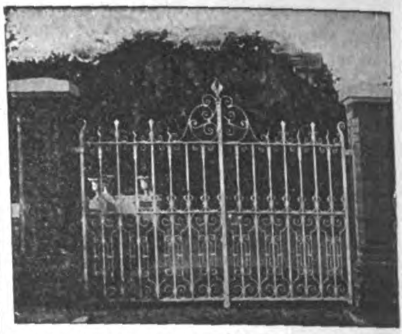

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Rochdale.—April 1.—For the stripping and re-covering the roof over the purifier house at the gasworks, Dane Street, for the Gas Committee. Mr. T. Ball, gas engineer, Gasworks, Dane Street, Rochdale.

Salford.—April 1.—For the whole of the work required in the construction of the headquarter buildings for the accommodation of the 8th Battalion Lancashire Fusiliers, for the East Lancashire Territorial Force Association. Deposit £1. The Surveyor, East Lancashire Association Territorial Force, Town Hall Chambers, Ashton-under-Lyne.

Scotland.—March 30.—For steelwork of new car shed to be erected on the site of the old militia barracks, King Street, for the Aberdeen Town Council. Mr. W. Dyack, M.I.C.E., permanent-way engineer, Aberdeen.

Scotland.—March 31.—For the excavating and building complete of an underground concrete pump chamber and valve house on the left bank of the Dee, adjoining the present pump chamber, for the Aberdeen Town Council. Mr. J. A. Bell, city electrical engineer, Milburn Street, Aberdeen.

Scotland.—April 3.—For mason, carpenter, slater, plumber, and heating engineer work at the following public schools—viz.: Buckie, Portessie, Findochty, and Portknockie—for the Rathven School Board. Mr. J. Archibald, clerk to the Board, East Church Street, Buckie, and Messrs. D. & J. R. M'Millan, architects, 105 Crown Street, Aberdeen.

Scotland.—April 6.—For the mason, carpenter, slater, plasterer, plumber, painter, and glazing works of four dwelling-houses to be erected on The Square, Tarves, for Mr. W. Duthie. Mr. J. Cobban, architect, Haddo House, Aberdeen.

Semer.—For erection of three cottages at Semer Lodge (near to Semer Union), Suffolk. Mr. G. F. Letts, Hadleigh, Suffolk.

Shipley.—March 31.—For the various works required in the extension and alteration of the boiler house at the electricity works, Dockfield, for the Shipley Urban District Council. Mr. W. Illingworth, architect and surveyor, 15 Sunbridge Road, Bradford.

Slaithwaite (Yorks.).—For various works in connection with proposed church. Mr. W. H. H. Marten, Licentiate R.I.B.A., architect, 3 Cookridge Street, Leeds.

South Crosland.—April 4.—For the various works required in the construction of a filter house, reinforced concrete tanks, &c., on the north side of Blackmoorfoot reservoir, South Crosland, near Huddersfield, for the Corporation of Huddersfield. The Waterworks Engineer, Town Hall, Huddersfield.

Tipton.—March 30.—For the construction of a sanitary convenience in Factory Road, for the Urban District Council. Mr. W. H. Jukes, engineer and surveyor, Public Offices, Tipton.

Ulverston.—March 30.—For alterations at the Sun Hotel, for Messrs. James Thompson & Co., Ltd. Send names by March 30 to Messrs. J. W. Grundy & Son, architects and surveyors, Central Buildings, Ulverston.

Wales.—March 31.—For erection of a mess room at the locomotive depôt, Neath, for the Great Western Railway Co. The Engineer at Neath Station.

Wales.—April 3.—For erection of six semi-detached cottages in three blocks at the cottage homes, Bridgend, for the Guardians of Bridgend and Cowbridge Union. Mr. P. J. Thomas, architect and surveyor, Bridgend.

Wales.—April 4.—For erection and completion of a house, North Road, Cardigan, for Captain J. W. Jones. Mr. J. T. J. Williams, architect, Napier Street, Cardigan.

Wales.—April 7.—For erection and completion of a workmen's model lodging-house near the Beech Tree Hotel, Ystrad Mynach, for the Directors of the Ystrad Mynach Model Lodging-house Co., Ltd. Mr. H. G. Jones, architect and surveyor, Bank Chambers, Hengoed.

Wales.—April 16.—For erection of fourteen houses at Mountain Hare, Twynyrodyn, Merthyr Tydfil, for the Gilfach Cynon Building Club. Mr. T. E. Rees, M.S.A., architect, Bank Chambers, Merthyr Tydfil.

Wales.—April 27.—For erection, in four sections, of 200 cottages at the Wrexham Garden Village, North Wales. Deposit £3 3s. The Architect, Welsh Town Planning and Housing Trust, Ltd., 21 Park Place, Cardiff.

Warboys.—April 8.—For erection of seven single cottages, and for the conversion of the farmhouse into two cottages, and for repairs to existing farm buildings, on Tick Fen Farm, Warboys, lately in the occupation of Mr. John Rowell; also for building a single cottage on the Haunted House Farm, Tick Fen, Warboys, for the Huntingdonshire County Council. Mr. S. Croot, land steward, Brampton, Hunts.

West Ham.—April 20.—For alterations and additions to the Clarkson Street schools, Canning Town, E., for the West Ham Education Committee. Send names and £5 deposit by April 6 to Mr. W. Jacques, A.R.I.B.A., architect to the Education Committee, 2 Fen Court, Fenchurch Street, E.C.

Westwell.—April 3.—For erection of offices, &c., at the Council School, for the Kent Education Committee. Mr. D. Brown, correspondent, Cow Lees, Westwell, Ashford.

West Wycombe.—April 2.—For partially pulling down the Chapel Lane bridge, West Wycombe, and rebuilding to an increased width, for the Bucks. County Council. Mr. R. J. Thomas, county surveyor, County Hall, Aylesbury.

Willesborough.—April 6.—For alterations to the Board room and offices at the East Ashford Workhouse, Willesborough, for the Guardians of East Ashford Union. Deposit £1 1s. Mr. A. E. Lacey, A.R.I.B.A., architect, 13 North Street, Ashford.

Wingham.—April 20.—For erection of a pumping engine house at Wingham, for the Margate Corporation. Mr. E. A. Borg, borough engineer, 13 Grosvenor Place, Margate.

Wolverton.—April 2.—For enlargement of Wolverton county secondary school so as to provide rooms for manual instruction, cookery, physical exercises, staff, &c., for the Bucks. Education Committee. Send names by April 2 to Mr. C. G. Watkins, secretary, Education Office, Aylesbury.

Woodhurst.—March 31.—For the erection of new offices and alterations to the Woodhurst Council School, for the Hunts. Education Committee. The Surveyor to the Committee, Market Place, Huntingdon.

TENDERS.

BRAUNTON.

For the erection of new premises at Cross Tree, Braunton, for Messrs. Frank Rowe & Co. Mr. G. A. E. Schwabe, architect, Braunton. Quantities by Mr. Walter Tester, 78 Cross Street, Manchester.

Hancock	£700	10	0
Morrish	700	10	0

DARTFORD.

For extension of workshops at the Darenth Industrial Colony, near Dartford, Kent, for the Metropolitan Asylums Board. Mr. W. T. Hatch, M.I.C.E., M.I.M.E., engineer-in-chief, the Office of the Board, Embankment, E.C.

E. Wall	£2,100	0	0
L. Kazak	1,973	0	0
W. F. Blay, Ltd., Dartford (*recommended*)	1,949	0	0
Engineer-in-chief's estimate	2,025	0	0

HULL.

For the necessary work to be performed in the alterations and additions at Marfleet school, Hull, for the Education Committee. Mr. J. H. Hirst, city architect, Hull. Quantities by the City Architect.

Orwin	£1,950	0	0
Kettlewell	1,888	0	0
Darneley & Son	1,735	0	0
Singleton	1,717	10	0
G. H. Scorrer, Ltd.	1,689	5	4
J. T. Levitt, Holderness Road (*accepted*)	1,673	0	0

All of Hull.

LONDON.

For the remodelling of the Burghley Road school, St. Pancras, for the London County Council.

Thomas & Edge	£19,198	0	0
King & Son	19,030	0	0
Rowley Bros.	18,967	0	0
McCormick & Sons	18,733	0	0
Wallis & Sons	18,656	0	0
Smith & Sons	18,548	0	0
Chessum & Sons	18,388	0	0
Lawrence & Son	17,872	0	0
C. P. Roberts & Co.	17,844	0	0
L. H. & R. Roberts	17,654	0	0
Brand, Pettit & Co.	17,368	0	0
Willmott & Sons	17,289	0	0
J. & C. Bowyer, Ltd., Upper Norwood (*recommended*)	17,167	0	0
Architect's estimate	17,985	0	0

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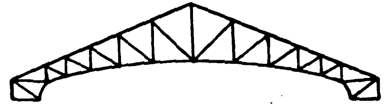

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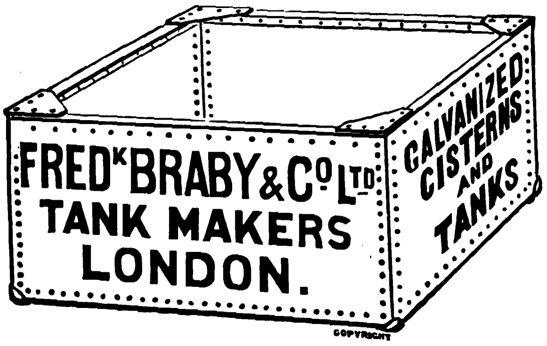

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LONDON—*continued.*

For the erection of the Knox Road special school, Forest Gate, for the West Ham Education Committee. Mr. W. Jacques, A.R.I.B.A., architect, 2 Fen Court, Fenchurch Street, E.C.

S. Blow, Ltd.	£8,960	0	0
Webb	7,986	0	0
Horswill	7,590	0	0
Coxhead	6,884	0	0
Symes	6,799	0	0
Sharpin	6,690	17	0
Clark & Son	6,486	11	5
Maddison	6,355	0	0

For the installation of electric light at the Belsize Fire Station, for the L.C.C.

Buchanan & Curwen	£260	0	0
R. H. & J. Pearson	203	0	0
Weston & Sons	195	0	0
Tredegar & Co.	195	0	0
Taylor & Co.	179	0	0
Arthur Newman, Ltd., 4 Cranbrook Road, Ilford, E. (*recommended*)	155	10	0
Chief engineer's estimate	190	0	0

For pulling down and rebuilding No. 70 New Bond Street, W. Messrs. Palgrave & Co., architects, 23 Bloomsbury Square, W.C.

Gray	£11,750	0	0
A. J. Staines, Ltd.	10,270	0	0
C. F. Kearley, Ltd.	10,200	0	0
W. F. Blay, Ltd.	10,200	0	0
Sharpin	9,700	0	0

SADDLEWORTH FRIEZLAND.

For the various works required in connection with the erection of a new school for the West Riding Education Committee. The Education Architect, Wakefield.

Accepted tenders.

Brooke & Holroyd, Marsden, building	£2,175	0	0
Wilson & Roberts, Stalybridge, joinering	720	0	0
Rushworth, Shipley, plumbing	307	0	0
Wimpenny, Linthwaite, plastering	229	17	8
Dodson & Sons, York, slating	224	17	0
Brooks, Armley, Leeds, asphalting	185	7	0
Batley, Wakefield, ironmongery	169	16	0
Hamilton, Bradford, painting	58	18	1

SLOUGH.

For the enlargement of the secondary school, for the Bucks County Education Committee.

Biggs & Sons, Great Kingshill (*accepted*)	£3,770	0	0

WELLINGTON (SALOP).

For alterations and building work to the isolation wards at the workhouse. Mr. A. Jenkins, architect, Wellington.

Olsen	£644	8	4
Dorse	641	0	0
Pace	599	0	0
Rowe	593	0	0
Pearce	548	0	0
R. & J. Millington	548	0	0
J. & T. France, Trench (*accepted*)	421	5	0

LONDON MASTER BUILDERS' ASSOCIATION.

The ordinary meeting of the Council was held on Thursday, the 19th inst., at the offices, Koh-i-Noor House, Kingsway, W.C., the President, Mr. Walter Lawrence, junr., being in the chair.

The reports of the Special Council and committees were read and adopted.

The suggestions of the National Board of Conciliation with respect to the trade dispute were very carefully considered, and it was resolved that, inasmuch as they were somewhat indefinite, the Board should be requested to supply further information in order to ascertain how far-reaching the suggestions are.

The reports made by members of the men returning to work upon the present individual undertakings were most satisfactory.

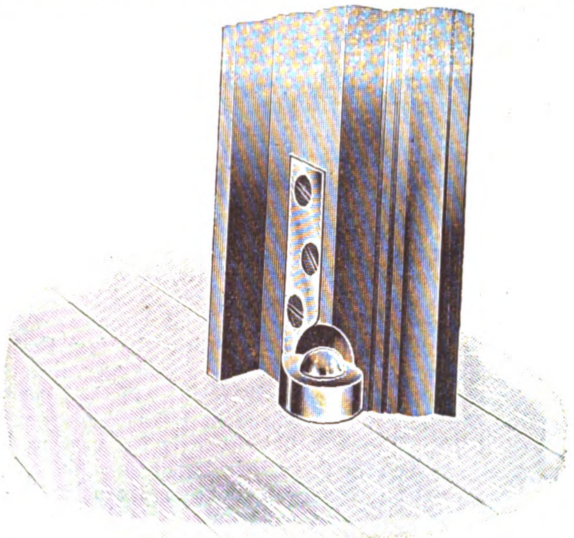
It was resolved that at an early opportunity the policy of the Council would be laid before the members in general meeting.

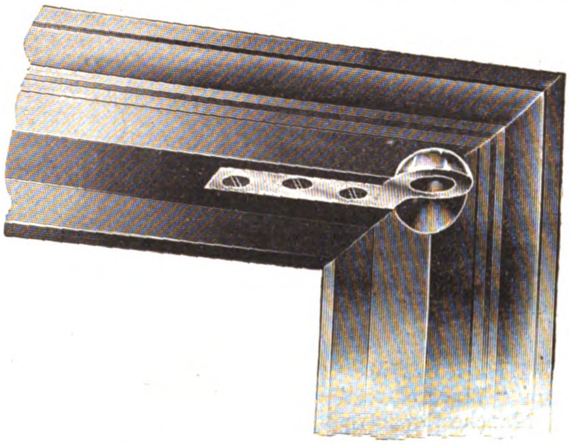
Several new members were elected, and further applications for membership received.

Correspondence relating to trade matters, &c., was considered and instructions given.

A NEW DOOR HINGE.

If one were asked to mention the qualities indispensable for a perfect door hinge those that would occur at once to the mind would be strength, noiselessness and smoothness of working. The first is a characteristic shared in by many hinges of inferior as well as superior make. But the presence of the two others may generally be accepted as a sign that the hinge is a good one. In a new hinge recently put on the market by Nettlefold & Sons, Ltd., 54 High Holborn, W.C., a special effort has been made to ensure that all three, together with other advantages, will be combined. It is called the "Perfect" ball hinge, and is quite different to our time-honoured friend the butt hinge. There are four gunmetal straps, which are screwed into the frame, door and jamb, two at the top and two at the bottom. Each strap ends in a half cup at right angles to its length, which serves to hold the metal ball on which the door turns. The straps not only act as a hinge, but also clamp the stile of the door to the rail, thus making the door considerably stronger than with ordinary butt hinges. Each of the four should be set quarter of an inch from the edge, as in this position the joint is a close one, whether the door be open or shut. The hinge is easily fixed, neat in appearance, noiseless, practically dustproof, and does not injure the surface of the door. An adjustable centre for swing doors has also been designed, employing the above principle of the single loose ball.





Holywell Urban Council has received sanction from the Local Government Board to borrow £12,500 for carrying out a water and drainage scheme. The water supply will be derived from the famous St. Winifrede's spring.

At the last meeting of Ballymahon Rural District Council (Ireland) the Engineer reported that he inspected one of the cottages certified as properly built by the last engineer and the Local Government Board experts, and found the walls out of plumb, the roof cracked as the walls widened, and the floors sagging. It would have fallen only it leant against an outhouse, which, in turn, leant against the cottage. The mortar used was not strong enough to bind the masonry at all, and the cottage should be taken down and rebuilt. It was decided to call upon the late engineer and his sureties to have this done at once.

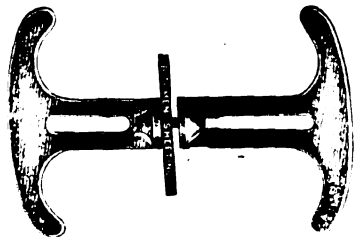
WEST OF SCOTLAND BUILDING TRADE.

The annual meeting of the Glasgow and West of Scotland Building Trades Employers' Council was held on the 23rd inst. in the Secretary's office, 140 West George Street, Glasgow. Mr. William Muir, Chairman of the Council, presided. The report to the members of the affiliated associations for the past year, which dealt with the question of alterations on conditions of building contracts, was submitted. Satisfaction was expressed at the fact that the Glasgow Institute of Architects had agreed to become parties to a memorandum of agreement dealing with the subject. It was explained that while the alterations agreed upon were not by any means exhaustive, still they remedied a number of serious grievances of contractors in the building trade. It was further explained that copies of the agreement had been issued to all the members of affiliated associations and to all architects and surveyors carrying on business in Glasgow and neighbourhood. Reference was also made to a meeting held in March last under the auspices of the Council to protest against a decision of the English Courts, in which the Court decided that the whole increase on the sale of heritable property over the amount of the provisional valuation was subject to increment duty, notwithstanding the fact that such increase was not attributable to any increased value of the site. It was explained that the Chancellor of the Exchequer, on having the circumstances brought before his notice, had promised to introduce a Bill to remedy the matter. The report also bore that the Council had continued their opposition to the single contractor method of executing building work, and that, partly as the result of their intervention, the Corporation of Glasgow had decided to adopt the usual method of issuing separate schedules for each branch of work in connection with the additions to the Municipal buildings. Reference was also made to the Building Exhibition held in Glasgow under the patronage of the Council in October last, the promoters being Messrs. Montgomery, of London, who organise biennially building trades exhibitions in Olympia, London, and it was explained that, in giving their patronage to the exhibition, the Council considered that it provided a convenient means for showing the latest and most modern goods and appliances used in the building trade, and further enabled architects, surveyors, and proprietors to see these goods, thus stimulating their interest in building. The following office-bearers were appointed for the coming year, namely: Chairman, Mr. William Muir (Messrs. Alexander Muir & Sons), Nithsdale Drive, Strathbungo; and Secretary and Treasurer, Mr. John Wylie, writer, 140 West George Street.

TRADE NOTES.

Messrs. Aspinall's Enamel, Ltd., write us that in order to cope with the expansion of their varnish trade they have purchased an old-established varnish works situated in the Bath Road, Mitcham, Surrey.

The "Warrington" Bond-Iron Syndicate, Ltd., Ardwick, Manchester, have on the market an ingenious tie-rod for use in reservoir and waterworks undertakings to prevent the bitumen sheeting from slipping. It is made in two pieces, of which the first is built at intervals into the wall before the sheeting is applied. The sheeting is fixed on, and the second part screws on to the first so as to make an absolutely level joint. The operation is quite simple. The tie-rod, which has been called the "Invincible," also acts as an admirable bond or key to brickwork.



For many years the manufacture of tracing cloth has been confined to a few firms, and, owing to an agreement between manufacturers and retailers, prices have been maintained at a high figure. Users will be interested to learn that an English competitor has come forward, and, manufacturing under the brand of "R.C.," has produced tracing cloths which claim to be equal in every respect to those of other English houses, and superior to any foreign production. The prices are considerably reduced, and the specimens we have seen appear to be excellent value. Samples and prices can be obtained from the sole selling agents, B. J. Hall & Co., Ltd., Chalfont House, Westminster.

It is not surprising to learn from the newspaper reports of the visit by the King and Queen on Saturday last to the reconstruction of the Duchy of Cornwall Estate that special interest was shown by their Majesties in the model cottagers and other housing specialities which had been supplied by Messrs. Cornes & Haighton, 240 High Holborn, W.C. According to *The Times*, "the Queen was specially interested in the kitchen arrangements and the heating apparatus, by which it is possible to obtain hot water for the ordinary taps, for the bath, and for the self-filling copper from the kitchen fire." Messrs. Cornes & Haighton received the highest award of the Royal Sanitary Institute for their combination range, copper, and bath in 1908. Since then other honours have fallen to their lot, the latest of which we have mentioned above.

Messrs. T. Illingworth & Co., Ltd., Willesden Junction, N.W., have placed on the market a rival to the Continental carbon transparencies under the title of Illingworth's "Transpareos." They are easily fixed on to window panes and are permanent. The range of subject is limitless, for, apart from the firm's own stock of views, cathedrals and figure-subjects, "Transpareos" may be obtained from one's own negatives or drawings. Their obvious use is to replace ground or frosted glass; they may also be employed to advertise goods to the passers-by.

Messrs. J. H. Sankey & Son, Ltd., Essex Wharf, Canning Town, E., have issued a heat chart giving particulars of their "Pyruma" fire cement manufactured at Canning Town. They claim that "Pyruma" is economical because only half the quantity is required as compared with fire clay, that it is invaluable for setting fire-brick work, and that it is the best fire cement obtainable. The chart gives the melting, boiling, and freezing points (Fahrenheit and Centigrade) of various substances, and a rough estimation of temperature by colour.

VARIETIES.

The Newcastle City Council at a meeting on Tuesday last approved a report of their Housing Committee, which recommended the erection of 272 municipal dwellings. A detailed scheme will be prepared by their city property surveyor.

Middlesex Education Authority propose to erect a new secondary school in Willesden for 300 boys and girls and provide playing fields at a cost of £32,530.

Messrs. Rees, Winship & Co., architects, Swansea, have been instructed by the British Mannesmann Company to proceed with their scheme for new works about to be erected at Newport, Mon. The initial expenditure will, it is understood, amount to about a million pounds.

The Hull Corporation Health Committee have unanimously adopted a scheme for the conversion of privies into water closets. About 2,500 conversions are suggested as a first instalment, and this will need a sum of £20,000. When this has been expended a report on the work done will be submitted, and an application for a further loan will be considered.

Mr. C. H. Eyles, Local Government Board Inspector, held an inquiry at Chester-le-Street, on the 20th inst., into the application of the Urban District Council to borrow £50,609 for the purpose of building 198 houses under Part 3 of the Housing of the Working Classes Act of 1890.

Messrs. E. J. Burr & Son, surveyors, 5 Queen Street, Bloomsbury, W.C., have taken into partnership Mr. Samuel T. Nunn, who has practised at the same address for several years. The joint practice will henceforth be carried on under the style of Messrs. E. J. Burr, Son & Nunn. The address and telephone number will remain unaltered.

The Hamilton Dean of Guild Court last week passed plans presented on behalf of the Town Council showing alterations and extensions to the gasworks at an estimated cost of £21,500. It was explained that the works consisted of a building capable of accommodating twenty-four vertical retorts, and in connection with which two chimney stacks, of 120 feet and 90 feet high respectively, would require to be erected.

The Furniture Trades Musical Society will hold at Queen's Hall, W., their annual grand Bohemian concert, on behalf of the Furnishing Trades Benevolent Association's new homes at Radlett, on April 4. H.M. Grenadier Guards will play selections during the evening, and the concert will be preceded at seven o'clock by an organ recital. Mr. A. Botwright is responsible for the programme, and Mr. Charles J North (Maple & Co., Ltd.) will occupy the chair. Tickets, numbered and reserved in the grand circle at 2s. 6d., may be obtained from the Hon. Secretary, Mr. J. A. Laxton, 14 City Road, E.C.

THE
Architect and Contract Reporter.
FRIDAY, APRIL 3, 1914.

EDITORIAL NOTICES.

The Editor will always be pleased to examine drawings or articles with a view to publication, but cannot be responsible for the safety of those sent, though every reasonable care will be taken. Contributors desiring payment should clearly state their wishes. No payment will be made until after publication, and a commission to prepare articles or drawings does not necessarily imply acceptance or approval.

No communication can be inserted unless authenticated by the name and address of the writer—not in every case for publication, but as a guarantee of good faith.

We have upon our staff a very eminent Barrister, who will be glad to answer in the columns of this paper any legal question that may be of interest to our readers. All letters must be addressed "Legal Adviser," Office of "The Architect," Imperial Buildings, Ludgate Circus, London, E.C.

The Editor will be glad to receive from Architects in London and the Provinces results of Competitions and Tenders and other particulars of Works in progress in which they may be interested.

NOTICE.

Next Friday being Good Friday, THE ARCHITECT *will be published on Thursday. All advertisements intended for this Number must reach the Office not later than 4* P.M. *on Wednesday, April 8.*

No alteration of advertisement copy can be allowed after Saturday morning, April 4.

TENDERS, ETC.

****** As great disappointment is frequently expressed at the nonappearance of Contracts Open, Tenders, &c., it is particularly requested that information of this description be forwarded to the Office, Imperial Buildings, Ludgate Circus, London, E.C., not later than 2 P.M. on Thursdays.***

COMPETITIONS OPEN.

CONWAY.—The Board of Guardians invite schemes, with plans, for the laying out of a plot of land near Conway for the provision of one relieving home and four cottages homes, and for laying out of the remainder of the plot for future cottage homes, recreation grounds, &c. Premiums of £10 and £5. Commission will be paid for work carried out during the first five years from date of acceptance of a scheme. Send applications to Mr. J. W. Post, clerk to the Guardians, Union Offices, Conway.

EAST PRESTON.—The Southstrand Sports Club (newly formed) invite plans for a clubhouse to be erected on the Southstrand Estate, East Preston, near Worthing. The successful competitor will be instructed to carry out the work, and will receive, in addition to the usual fees, a bonus on completion of the building. A plan of the site and full particulars can be obtained of Mr. William Hollis, surveyor, Southstrand Estate Offices, Church End, Finchley, London.

GLASGOW.—May 1.—The Corporation are prepared to receive from sculptors competitive models and relative offers for four groups of symbolical sculpture to be placed on the abutments of the new bridge at Radnor Street, Kelvingrove Park, Glasgow. Copies of the conditions of the competition may be obtained on application to Mr. J. Lindsay, town clerk, City Chambers, Glasgow.

GRIMSBY.—June 2.—The Building Committee of the proposed Constitutional Club invite designs for premises to be erected at the corner of Victoria Street and Upper Spring Street, at an estimated cost of £3,000. Premiums of £40, £20, and £10 are offered. Deposit of £2 2s. will be sent back on receipt of designs or on return of the particulars within 10 days. Mr. H. W. V. Sheckell, secretary, Constitutional Club, Victoria Street, Grimsby.

HENDON.—May 11.—The Education Committee will be prepared to receive competitive designs for a school at Hale Grove Gardens, Mill Hill. Conditions of competition and plan of site may be obtained from Mr. James Anderson, secretary to the committee, Council Offices, Hendon, N.W.

HYTHE.—May 30.—The Town Council invite designs for a concert hall and public shelter, for which premiums of fifty, twenty-five, and ten guineas will be awarded. Deposit £1 1s. (returnable). Condition, site plan, &c., may be obtained on application to Mr. Bernard C. Drake, town clerk, Hythe, Kent. (See advertisement.)

LONDON.—May 4.—The Bridge House Estates Committee of the Corporation of the City of London invite designs from British architects for the architectural treatment of the new St. Paul's Bridge. The conditions of the competition and instructions may be obtained upon payment of a deposit of £3 3s., which will be returned on receipt of a design in accordance with the conditions. A premium of £300 is offered for the design which may be placed first, and further premiums of £200 and £100 respectively. The committee will be advised by Sir William Emerson, P.P.R.I.B.A., as assessor, whose decision will govern the award of the premiums and be final and binding in all stages of the competition. The Town Clerk, Guildhall, London, E.C.

MOLD.—The Urban District Council invite architects to submit plans, &c., for a fire station and caretaker's house, to be erected at Earl Road. Further particulars may be obtained from Mr. D. Thomas, surveyor, Town Hall, Mold.

SACRISTON.—April 15.—The Trustees of the Literary Institute are prepared to receive plans for the proposed Institute. All information can be obtained from Mr. John Walker, secretary, 11 Eliza Street, Sacriston, Durham.

(*Continued on page* 15.)

ACCORDING to the *Investors' Guardian* the registered capital of "land and building" companies registered at Somerset House last year shows an increase of more than a million over those for 1912. The combined total given for these two is £8,824,692.

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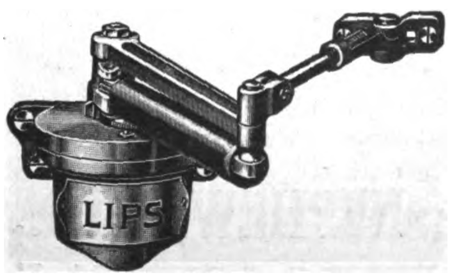

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CONTRACTS OPEN.

Abertillery.—April 20.—For laying out and improvement of school grounds, including the erection of boundary walls, &c., at the county school, for the Governors. Deposit £1 1*s*. Mr. N. J. Llewellyn, clerk to the Governors, Council Offices, Abertillery.

Alcester.—April 24.—For the enlargement of the police station and the erection of a pair of cottages and works incidental thereto at Alcester, for the Warwickshire County Council. Deposit £1 1*s*. Mr. J. Wilmot, county surveyor, 6 Waterloo Street, Birmingham.

Aldbrough.—April 9.—For pulling down four old cottages and other buildings, and the erection of four new cottages, butcher's shop, and other buildings, for the Earl Percy. Mr. F. W. Hall, Stanwick Estate Office, Aldbrough, Darlington.

Allerton Bywater.—For erection of two houses (either whole or separate trade tenders). Mr. J. Elsworth, Station Road, Allerton Bywater, near Castleford.

Ashford.—April 30.—For erection of a building, comprising hot-water baths, attendant's room, &c., at Beaver Road, for the Urban District Council. Mr. W. Terrill, surveyor, 5 North Street, Ashford, Kent.

Balby-with-Hexthorpe.—April 24.—The West Riding Education Committee invite whole or separate tenders for the following works at the Council School—viz.: alterations, new screens, &c. (builder and joiner). The Education Architect, County Hall, Wakefield. Send £1 deposit by separate letter to the West Riding Treasurer, County Hall, Wakefield.

Barkisland.—April 9.—For mason's, carpenter and joiner's, slater and plasterer's, plumber's, and painter's works required in erecting a through house at Barkisland (near school). Mr. T. Hutton, Council Offices, Barkisland, Yorks.

Bingley.—For the various works required in the alterations to property adjoining the main street. Messrs. Nunns & Bracewell, architects, Bank Chambers, Bingley.

Biscovey.—April 11.—For erection of an infants' Council school at Biscovey, for the Cornwall Education Committee. Deposit £1 1*s*. Mr. B. C. Andrew, architect to the committee, St. Austell, or the Biscovey Council School.

Boston (Lincs.).—April 7.—For erection and completion of cottages within their district as follows, for the Boston Rural District Council—viz.: Wrangle, Greengate, two pairs; Wrangle, Sea Lane, one pair; Freiston, Baker's Lane, two pairs; Frampton, Sandholme, two pairs; Kirton, Drain Side, three pairs; Kirton, Wash Road, two pairs; Kirton, Wash Road, Broom Bridge, two pairs; Algarkirk, The Roundlands, three pairs; Sutterton, Pump Holt, three pairs; Wigtoft, Hippo Lane, two pairs; Pelham's Lands, Holland Fen, two pairs. Mr. H. Kidd, architect, Solent House, Kirton, Boston.

Bradford.—For the various works required in erection of club premises, Westgate. Messrs. A. Sharp & Son, architects, 19 Market Street, Bradford.

Brentwood.—April 18.—For the taking down of a two-span match-lined corrugated iron building, 102 feet long by 75 feet wide, and re-erecting same on new site upon prepared foundations, for the Committee of Visitors of the Brentwood Asylum. The Clerk of Works, the Asylum, Brentwood, Essex.

Brompton (Kent).—April 7.—For erection of a block of dwellings in Wood Street, Brompton, for the Gillingham Town Council. (Mr. J. L. Redfern, borough surveyor, Council Offices, Gardiner Street, Gillingham.) Send 10*s*. 6*d*. deposit to Mr. F. C. Boucher, town clerk, Corporation Offices, Gillingham, Kent.

Bryngwyn.—For erection and completion of a block of four cottages at Bryngwyn, near Raglan, Mon. Deposit £1 1*s*. Mr. E. L. Lyne, agent, Llanarth Estate Office, Llanarth Street, Newport, Mon.

Chelmsford.—April 24.—For additions to the Chelmsford county high school for girls, for the Essex Education Committee. Send in names and £2 2*s*. deposit by April 6 to Mr. F. Whitmore, county architect, 73 Duke Street, Chelmsford.

Chipping Ongar.—April 15.—For additions and alterations to the elementary school at Chipping Ongar, for the Essex Education Committee. Send in names and £2 2*s*. deposit by April 4 to Mr. A. Richardson, clerk to the Ongar District Sub-Committee, the Council House, Chipping Ongar.

Chitterne.—April 17.—For erection of eight cottages in the parish of Chitterne, for the Warminster Rural District Council. Deposit £1 1*s*. Mr. C. C. Hancock, surveyor to the Council, High Street, Warminster.

Ebbw Vale (Mon.).—April 16.—For erection of 214 cottages, for the Ashgrove Building Club at Ebbw Vale, Mon. The work will be let in two separate contracts—No. 1, 128 cottages; No. 2, 86 cottages. Mr. W. Rosser, architect and surveyor, Wildings' Chambers, Newbridge, Mon.

Elland.—April 8.—For the whole or any of the following works required in erection of an additional storey to Norton Mills, for Mr. J. Casson—viz.: excavator and drainer, concretor, bricklayer, mason, carpenter and joiner, slater, plumber and glazier, plasterer, and painter. Send names by April 8 to Messrs. Stott & Sons, architects and consulting engineers, 5 Cross Street, Manchester.

Felixstowe.—April 14.—For alterations and extensions to the electric lighting station, Highfield Road, for the Felixstowe and Walton Urban District Council. Mr. H. Clegg, A.M.I.C.E., Town Hall, Felixstowe.

Fletton.—April 20.—For the enlargement of the county secondary school, Fletton, by the addition of two new classrooms, for the Hunts. Education Committee. The County Surveyor, Market Place, Huntingdon.

Grassmoor.—For erection of Primitive Methodist schools, Grassmoor, near Chesterfield. Mr. T. Wilcockson, architect, Chesterfield.

Hardhorn (Lancs.).—April 13.—For the enlargement of the Blaine's Endowed School, Hardhorn, near Poulton-le-Fylde. Deposit £1 1*s*. Messrs. Fairbrother & Hall, A.R.I.B.A., Market Place, Poulton-le-Fylde.

Hemsworth.—April 20.—For erection of four almshouses and the extension and improvement to twenty existing almshouses at Holgate Hospital, near Hemsworth, for the Trustees of Archbishop Holgate's Hospital. Mr. F. H. Howlett, architect, 1 Polam Plantation, Darlington.

Hereford.—April 14.—For erection and completion of sixty-two cottages, subject to the sanction of the Local Government Board to the necessary loan, for the Town Council. Tenders may be made for the erection and completion of the whole of the cottages, or any of the following—viz.: (Type A) thirty-six cottages in nine blocks of four each; (B) fourteen cottages in pairs; (C) four cottages in one block; (D) eight cottages in two blocks of four each. Deposit 10*s*. 6*d*. Mr. J. Parker, city surveyor, Town Hall, Hereford.

Holt.—April 15.—For erection of a parish hall at Holt, Norfolk. Deposit £1. Messrs. C. R. Baker King & Harold C. King, architects, 2 Dean's Yard, Westminster, S.W.

Houghton-le-Spring.—April 20.—For erection of a block of two children's homes, for the Guardians. Deposit £1 1*s*. Messrs. J. G. & R. G. Cowe, architects, Chester-le-Street.

Howden.—April 6.—For erection of an isolation hospital at Howden, Yorks., for the Howden Rural District Council. Send names by April 6 to Mr. T. N. Ullathorne, architect, Selby.

Huddersfield.—April 8.—For erection of dwelling-house and shop in Colne Road. Messrs. J. Berry & Sons, architects and surveyors, 3 Market Place, Huddersfield.

Ireland.—April 20.—For building a Labour Exchange and Divisional Office at Lord Edward Street, Dublin. Deposit £1. Mr. H. Williams, secretary, Office of Public Works, Dublin.

Ireland.—April 21.—For building sixty labourers' cottages, for the Lisburn Rural District Council. Charge 5*s*. Mr. W. Sinclair, clerk, Workhouse, Lisburn.

Isle of Wight.—April 14.—For erection of cottage and outbuildings at Redhill Lane, Godshill, for the Isle of Wight County Council. Messrs. Stratton & Millgate, architects, Quay Street, Newport.

Liscard.—April 14.—For erection of Liscard new telephone exchange, for the Commissioners of H.M. Works and Public Buildings. Deposit £1 1*s*. The Postmaster, Birkenhead, and H.M. Office of Works, Storey's Gate, London, S.W.

Liverpool.—April 8.—For the adaptation of Liverpool (St. Anne's Street) labour exchange, for the Commissioners of H.M. Works and Public Buildings. Deposit £1 1*s*. Mr. W. Gilruth, H.M. Office of Works, Liverpool, and H.M. Office of Works, Storey's Gate, London, S.W.

London.—April 22.—For painting, distempering, and general repairs at their infirmary, Colindale Avenue, Hendon, N.W., for the City of Westminster Union. The Steward at the Infirmary, or Mr. W. J. Lickley, clerk to the Guardians, Princes Row, Buckingham Palace Road, S.W.

London.—April 23.—For erection of a sanitary tower and other works at their infirmary, Raine Street, Old Gravel Lane, E., for the Guardians of the parish of St. George-in-the-East. Mr. W. Watson, A.R.I.B.A., architect, 53 and 54 Chancery Lane, W.C.

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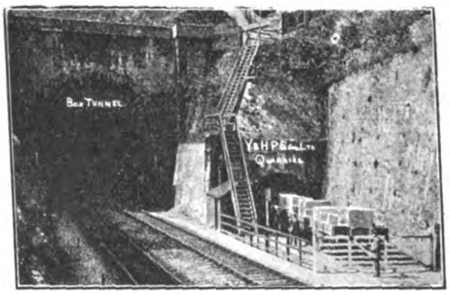

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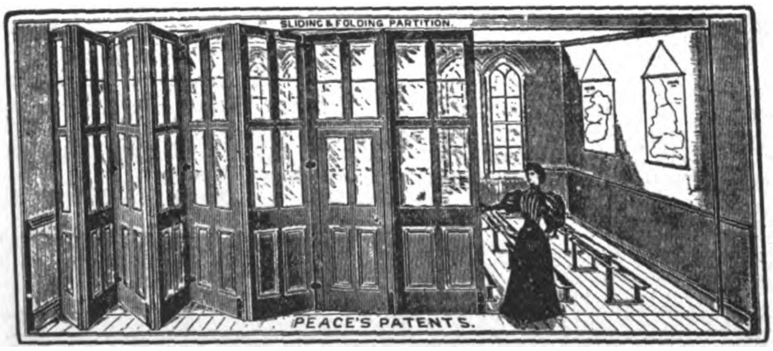
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London.—April 23.—For redecorating and renovating the workhouse and the infirmary premises, Raine Street, Old Gravel Lane, E., for the Guardians of the parish of St. George-in-the-East. Mr. W. Watson, A.R.I.B.A., architect, 53 and 54 Chancery Lane, W.C.

London.—April 24.—The Commissioners of his Majesty's Works, &c., invite constructional schemes and tenders based thereon for the construction in reinforced concrete of a sub-station at Mount Pleasant. Any system or systems of construction may be adopted for the whole or part of the work, and full details must be furnished immediately for examination if necessary. Deposit £2 2*s*. Mr. E. Cropper, H.M. Office of Works, Carlisle Place, Westminster, S.W.

Milnrow.—April 15.—For demolishing an existing retort house and chimney and building a new brick retort house 78 feet long by 37 feet wide, for the Milnrow Gas Co. Mr. J. W. Bottomley, manager, Gasworks, Milnrow.

Nantwich.—April 18.—For works in erection of certain new buildings and alterations, &c., in existing premises, as set out, for the Cheshire County Council—viz.: Ridley Estate, near Nantwich, alterations, additions, and repairs to existing dwelling-houses and farm buildings at Ridley Hall, Ridley Farm, and Chesterton Farm, now in the occupation of Messrs. Brown, Willis, and Ankers respectively; Woolstanwood Estate, near Crewe and Nantwich, erection of two single dwelling-houses and two sets of farm buildings. Deposit £1. Mr. W. H. Lancaster, land agent, 49 Northgate Street, Chester, and the Estate Office, 10 Wellington Road, Nantwich.

Newton-in-Makerfield.—April 11.—For erection of thirty cottages in their district, for the Urban District Council. Deposit £1 1*s*. The Surveyor, Town Hall, Earlestown.

Northampton.—April 15.—For erection of Northampton new post office. Drawings, specification, and a copy of the conditions and form of contract may be seen on application to the Postmaster, Northampton. Bills of quantities may be obtained on payment of £1 1*s*. at H.M. Office of Works, Storey's Gate, London, S.W. (See advertisement.)

Normanton.—April 9.—For erection of seventy-six houses for the working classes on a site near Church Lane, for the Urban District Council (whole of the works or separate trades). Mr. A. Hartley, architect and surveyor, Council Offices, Normanton.

Penrith.—April 9.—For the whole of the work required in erection of Council school, Penrith, for the Cumberland Education Committee. Send names and £1 1*s*. deposit by April 9 to Mr. J. Forster, M.S.A., architect, 13 Earl Street, Carlisle.

Pontllanfraith.—April 7.—For erection of twenty semi-detached houses at Pontllanfraith, for the Millbrook Building Club. Mr. W. A. Griffiths, Licentiate R.I.B.A., architect, Pontllanfraith, Mon.

Prestwich (Lancs.).—April 17.—For erection and completion of additional attendants' rooms at the County Lunatic Asylum. Mr. T. Chadwick, A.R.I.B.A., architect, 16 Princess Street, Manchester.

Redruth.—April 9.—For certain works in connection with the renovation of the Primitive Methodist church, including painting and structural improvements. Mr. S. Hill, architect, Green Lane, Redruth.

Rhymney.—April 14.—For erection of surgery at Jerusalem Street, for the Rhymney Workmen's Medical Aid Fund Committee. Mr. E. Pugh, secretary, 2 Price Street, Rhymney.

Richmond.—April 7.—For erection of conveniences for men and women in the Town Hall Gardens, for the Town Council. Deposit £1 1*s*. Mr. J. H. Brierley, borough surveyor, Town Hall, Richmond, Surrey.

Rotherham.—April 15.—For erection of offices at Rotherham (Masboro'), for the Midland Railway Company. The Engineer's Office, Derby Station.

St. Neots.—April 14.—For various alterations and repairs to corn exchange, for the St. Neots Urban District Council. Deposit £2 2*s*. The Council Surveyor's Office, Corn Exchange, St. Neots, Hunts.

Scotland.—April 11.—For executing under one combined contract the artificers' work in connection with the proposed additions and alterations to the kitchen department at the Argyll and Bute District Lunatic Asylum, Lochgilphead. The Medical Superintendent at the Asylum, Lochgilphead.

Scotland.—April 22.—For the following works required in connection with the extension of the municipal buildings, Glasgow—viz.: (1) digger, mason, and brick work; (2) steel beams, &c.; (3) structural steel work; and (4) carpenter work, for the Corporation. Deposit £20 for the digger, mason, and brick works specification and schedule, and £10 for the specification and schedule relative to each of the other works. Messrs. Watson & Salmond, architects, 242 West George Street, Glasgow.

Sherburn.—April 16.—For alterations and additions to the master's house, for the Governors of Sherburn Hospital. Deposit £1 1*s*. Messrs. J. Potts & Son, architects, 12 Eldon Square, Newcastle.

Shipley.—For joiner work, excavating, brick work, glazing, and concreting works for garage. Messrs. W. P. Butterfield, Ltd., Galvanising Works, Shipley.

Thurston.—April 13.—For erecting a village hall at Thurston, Suffolk, to be known as the Cavendish Memorial Hall. Mr. A. A. Hunt, architect, 51 Abbeygate Street, Bury St. Edmunds.

Trimdon Grange.—April 13.—For erection of ten cottages at Trimdon Grange Colliery, for the Durham Aged Mineworkers' Homes Association. Mr. T. Stephenson, Trimdon Grange Colliery, Durham.

Tynemouth.—April 7.—For alterations to premises, Union Quay, for the Corporation. Deposit £1 1*s*. Mr. J. F. Smilie, borough surveyor.

Wales.—For building thirteen or more workmen's houses at Glyn-Neath, near Neath. Mr. A. Farmer, secretary, 13 Bethania Street, Glyn-Neath.

Wales.—April 6.—For outside general repairs, painting, &c., of Hyfrydle C.M. chapel and house, Hyfrydle Road, Talysarn, for the Committee. Mr. W. J. Griffith, Fron Felen, Talysarn.

Wales.—April 7.—For carrying out certain improvements at their workhouse, Llanfyllin, for the Guardians. Mr. T. Edwards, clerk, 10 Market Street, Llanfyllin.

Wales.—April 9.—For proposed alterations to the Clive Arms Hotel, Caerphilly. Mr. S. Williams, Licentiate R.I.B.A., Wharton Street, Cardiff.

Wales.—April 9.—For building a hall at Pontmorlais, for the South Wales Billiard and Recreation Co. Mr. C. M. Davies, M.S.A., 112 High Street, Merthyr.

Wales.—April 14.—For erection of eighteen semi-detached houses, for the Cardiff Garden Village Co., Ltd., at Rhubina, the above eighteen houses being first part of a contract of fifty to be built immediately. Mr. A. H. Mottram, A.R.I.B.A., architect, 4 Park Place, Cardiff.

Wales.—April 16.—For erection of fourteen houses at Mountain Hare, Twynyrodyn, Merthyr Tydfil, for the Gilfach Cynon Building Club. Mr. T. E. Rees, M.S.A., architect, Bank Chambers, Merthyr Tydfil.

Wales.—April 18.—For provision of terrazzo flooring at Cardiff Workhouse. Mr. A. J. Harris, clerk, Union Offices, Queen's Chambers, Cardiff.

Wales.—April 18.—For extension of nurses' room at the hospital, Headquarters Homes, Ely, near Cardiff. Mr. A. J. Harris, clerk, Union Offices, Queen's Chambers, Cardiff.

Wales.—April 27.—For erection, in four sections, of 200 cottages at the Wrexham Garden Village, North Wales. Deposit £3 3*s*. The Architect, Welsh Town Planning and Housing Trust, Ltd., 21 Park Place, Cardiff.

Wallasey.—April 21.—For erection of proposed town hall, for the Town Council. Messrs. Briggs, Wolstenholme & Thornely, architects, Royal Liver Buildings, Liverpool. Send £2 2*s*. deposit to Mr. H. W. Cook, town clerk, Town Hall, Wallasey. (See advertisement.)

Walsden.—For the whole or any of the masons' and bricklayers', carpenters' and joiners', slaters' and plasterers', and plumbers' works required in erection of twelve cottages at Henshaw, Walsden, for the Walsden Co-operative Society, Ltd. Mr. J. E. Stott, Licentiate R.I.B.A., Bridge Street, Todmorden.

Willington.—For erection of new hall, billiard room, and other alterations to the Workmen's Club. The Secretary, 69 Commercial Street, Willington, county Durham.

Winchester.—April 14.—For erection of two new shelters in the recreation ground, for the Corporation. The City Engineer's office, Guildhall, Winchester.

Wingham.—April 20.—For erection of a pumping engine house at Wingham, for the Margate Corporation. Mr. E. A. Borg, borough engineer, 13 Grosvenor Place, Margate.

Manchester Education Committee have agreed to substitute rock asphalt for stone setts in streets adjoining the four district schools, owing to the traffic on the present road making so much noise.

The Middlesex County Council at their last meeting agreed to purchase Rectory Farm, Heston, an estate of 295 acres, at a cost of £32,073, for the purpose of erecting a new lunatic asylum for the county.

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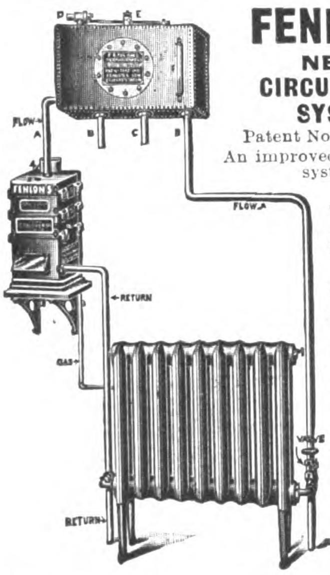

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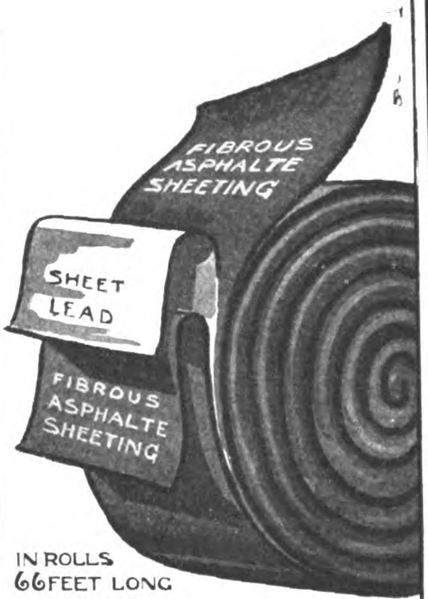

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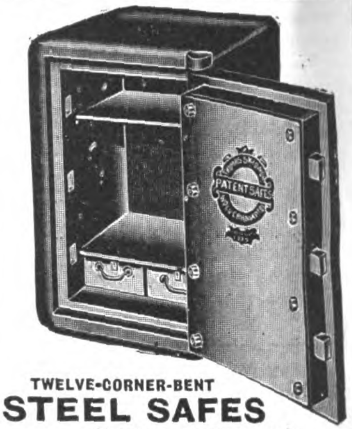
Vermilion
Indigo
Yellow
Brown
Brick Red
Orange
Violet
White

11 Farringdon Avenue, LONDON, E.C.



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TENDERS.

CHESHAM.

For the erection and completion of twenty workmen's dwellings, together with all fencing, drainage, &c., in Brockhurst Road, for the Urban District Council. Mr. P. C. Dormer, engineer and surveyor, Chesham.

Honour & Son	£5,400	0	0
Hanson Bros.	4,279	0	0
H. & R. Abbott	4,275	0	0
Bow	4,220	0	0
Dryan & Son	4,200	0	0
Freeman	3,775	0	0
Clarke	3,700	0	0
Mead & Son	3,650	0	0
Rust & Radcliffe	3,580	0	0
Clark	3,567	0	0
Grimsdell & Haddock, Chesham (*accepted*)	3,525	0	0
Engineer's estimate	3,537	0	0

For the reconstruction, with cast-iron pipes, of existing stoneware pipe sewers and house connections, together with all manholes, flushing chambers, &c., for the Urban District Council. Mr. P. C. Dormer, engineer and surveyor, Chesham.

Mead & Sons	£3,658	0	0
Free & Sons	3,635	0	0
Wright	3,539	17	9
Southorn	3,380	0	0
W. F. Shaddock, Plymouth (*accepted*)	3,162	11	0
Engineer's estimate	3,363	0	0

CHURWELL.

For the various works required in the erection of a drying-room at Mellshaw Leather Works, for Messrs. W. L. Ingle, Ltd. Mr. T. A. Buttery, R.I.B.A., architect, Morley and Leeds.

Accepted tenders.

T. Newton, mason, joiner, plasterer, plumber and ironfounder, Ackroyd Street, Morley	£1,147	0	0
Rawlinson's, Ltd., hoist, Kirkstall Road, Leeds	195	10	0
J. Kellet, slater, Scotchman Lane, Morley	111	0	0

LONDON.

For the provision of accommodation for the local supervision and management of the White Hart Lane estate, including a store and workshop in addition to offices and a residence for the superintendent, for the London County Council.

Twinn	£2,170	0	0
Marchant, Hirst & Co.	1,636	0	0
Monk	1,615	0	0
Roberts & Co.	1,558	0	0
H. Nicholls, Ltd.	1,525	0	0
Rowley Bros., Wood Green (*recommended*)	1,469	0	0

NOTTINGHAM.

For the erection of a children's central home and administrative centre at Hartley Road, for the Guardians. Messrs. Sutton & Gregory, architects, Nottingham.

Mason & Sons	£6,300	0	0
Fish & Sons	5,311	0	0
Dennett & Ingle	5,300	0	0
Appleby	5,200	0	0
Hopewell & Sons	5,200	0	0
Wright	5,122	0	0
Barlow & Co.	5,092	0	0
Maule & Co.	5,075	0	0
Pillatt	5,044	0	0
Gilbert & Hall	5,034	0	0
Long & Sons	4,997	0	0
Bosworth & Lowe	4,990	0	0
Harper	4,975	0	0
Greenwood	4,940	0	0
Bow	4,884	0	0
Gibbons & Turner	4,880	0	0
Evans	4,860	0	0
Vallance & Blythe	4,839	10	0
W. Crane, Ltd.	4,797	0	0
J. G. Short, Nottingham (*accepted*)	4,540	0	0

SCOTLAND.

For the construction of a reservoir at the waterworks, for the Dunoon Town Council.

E. Cameron, Dunoon (*accepted*)	£5,819	0	0

THE EASTER HOLIDAYS.

For spending Easter on the Continent the Great Eastern Railway Company's Hook of Holland route offers exceptional facilities. Passengers leaving London in the evening and the Northern and Midland Counties in the afternoon arrive at the chief Dutch cities the following morning. The Dutch flower fields will be in full bloom. From the Hook of Holland through-carriages and restaurant-cars run in the north and south German express trains to Cologne, Bale, and Berlin. Special tickets at reduced fares will be issued by the Harwich-Antwerp route for Brussels. Tickets dated in advance can be obtained at the Liverpool Street Station or booking offices. The Danish Royal Mail steamers of the Forenede Line of Copenhagen will leave Harwich for Esbjerg (on the west coast of Denmark) on Wednesday, April 8, and Saturday, April 11, returning April 14 and April 15. The General Steam Navigation Company's steamers will leave Harwich for Hamburg on April 8 and April 11, returning April 11 and April 15.

The Great Central Railway Company announce that passengers who book early in advance by their express excursions will have a seat reserved for them without extra charge on the trains leaving Marylebone on Thursday, April 9. Corridor expresses, equipped in most cases with restaurant cars, depart Marylebone Station, April 9, at 8.45 and 10 A.M., 12.10, 3.15, 3.20, 4.45, 6.20, 10 P.M., and 12.40 midnight. Special trains will also be run on Good Friday, Saturday, Sunday, and Monday (Bank Holiday). This endeavour places the Great Central Company in the premier position as to luxury and expedition. Particulars in regard to the issue of week-end tickets, low fares for walkers and cyclists from Marylebone by any train on any day, &c., are contained in the Company's Easter programme.

Excursion tickets, available fifteen days, will be issued by the South Eastern and Chatham Railway to Paris on Thursday, April 9, by special services leaving Victoria (S.E. and C.R.) at 1.40 P.M., *via* Folkestone and Boulogne, and at 3.50 P.M. *via* Dover and Calais. Also from April 8 to 13, inclusive, by service leaving Charing Cross at 10 A.M. Excursion tickets will be issued to Paris on April 8, 11, and 13, by the new 4.30 P.M. service from Charing Cross, *via* Dover and Calais. The Paris excursion tickets, all classes, will also be issued every night from April 8 to 13, inclusive, by the Dover-Calais Mail Service. A special cheap service to the French Riviera, *via* Dover and Calais, to Cannes, Nice, Monte Carlo, Mentone, &c., will leave Victoria (S.E. and C.R.) at 3.50 P.M. on April 9. Cheap tickets to Brussels by the Calais, Boulogne, and Ostend routes will be issued from April 8 to 13, inclusive, available for fifteen days, and similar fifteen-day return tickets to Amsterdam and other Dutch towns, *via* Queenborough and Flushing. During the holidays the Continental services will run as usual, with the addition of extra boat trains from Victoria (S.E. and C.R.).

There are a large number of people who prefer to spend their Easter holidays in the South-East of England, and the special week-end tickets which will be in force enable them to do this. An accelerated service of trains to the seaside resorts has been arranged by the S.E and C.R. for Thursday, April 9.

The Glasgow Corporation at their last meeting defeated the following motion: "That it be remitted to a special committee to consider and report on the expediency of instituting in the public interests a Works Department of the Corporation, the committee in charge of said department, when established, to be charged with the duty of co-ordinating the works of the various Corporation departments, and also, where practicable, to submit tenders for the work of said departments; such work to be carried out by the workmen in the direct pay of the Corporation."

At the annual general meeting of the Royal Society of British Sculptors held last week Sir Thomas Brock, R.A., was elected President, Mr. T. Stirling Lee Vice-President, and the following comprise the new Council: Messrs. S. Nicholson Babb, W. R. Colton, A.R.A., T. Mewburn Crook, R.B.A., Alfred Drury, R.A., W. S. Frith, Basil Gotto, A. H. Hodge, T. Stirling Lee, Bertram Mackennal, M.V.O., A.R.A., Paul Montford, R.B.A., A. G. Walker, and F. Derwent Wood, A.R.A. It will be seen that Sir Thomas Brock succeeds Sir George Frampton as President, and Mr. Stirling Lee, Mr. Reynolds-Stephens as Vice-President. Only Mr. Mackennal, Mr. Derwent Wood, and Mr. Hodge were on the Council before the trouble about Mr. Havard Thomas's action in regard to the commissions for statues to be placed in Cardiff Town Hall.

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"BRECCLES HALL"

INVITE INSPECTION
AT THEIR SHOWROOMS.

THE ART OF STENCILLING.

By W. STEWART-GREENE, F.A.I., F.I.B.D.

IT is somewhat difficult for one to realise the extent to which stencilling as a means of decoration was used in past ages. Whether the ancient Egyptians and Greeks used this method of stencilling for the numerous repetitions of their conventional designs of the lotus, palm, acanthus, or honeysuckle ornament, &c., I am not able to state; but there is no doubt that stencilling was used in the early days. Skilled craftsmen from Italy and other countries travelled from place to place, decorating the churches, &c., and I have no doubt that the stencil plate was used in conjunction with handwork.

Stencilling has also been largely used in Indian and Chinese temples, and also by Persian decorators. There is little doubt that it was largely used in the Middle Ages. It was very prominent in ecclesiastical work. Charming examples are to be seen on the ceilings of palaces and churches in various parts of Italy, France, and England. Where much direct brush work has been resorted to, it is difficult to decide how far stencilling was used. Certainly the surest indication of its use is absolute accuracy in repetition, for the hand can never approach that which stencilling invariably accomplishes in this direction; also the texture of brush work being entirely different from that of stencilling, the latter possessing a distinct quality of its own, which is quite unattainable with the free brush.

In South Kensington Museum we have some specimens of French, Italian, and German stencilled work of the sixteenth and eighteenth century, and in many of the churches in East Anglia we have examples of fine stencilling combined with brushwork.

Now, the art of stencilling occupies a distinct place amongst the arts and crafts. It is a complete craft in itself.

Many look upon stencilling as a mere mechanical process, but I venture to say that it is an art capable of a high and useful development, a field for producing individual taste and skill to practically a limitless extent, as the Japanese artists have shown us. The introduction of the stencil into Japan is attributed to a dyer, named Someya Juzev, who lived in the latter part of the seventeenth century. The Japanese have been, and still are, thoroughly successful in the use of the stencil plate, and we can get much inspiration and valuable instruction from them; their stencil plates are marvellous, and they use them for decorating textile fabrics and dresses, as well as for wall papers, screens, &c.

The waterproofed paper they use for making the plates is of exceedingly thin substance. It is made of mulberry fibre, enabling as many as a dozen patterns to be cut at one operation.

The Japanese craftsman pushes the long, thin knife invariably before him, just the reverse way of the English stencil-cutter. The punctured holes or dots, which are such a fine feature in Japanese stencils, are produced by delicate punches. Many of the sheets, when the pattern has been thus cut away, are so fragile that the paper left will not hold them together, so they are strengthened by covering one sheet with adhesive substance, and stretching across the plate a number of silk fibres—which form "ties" to hold the design together—so fine that they do not interfere with the brushwork. Another stencil plate is placed exactly over the underlying stencil and threads, and both sheets pressed accurately together. The Japanese find that a very thin paper is better for their delicacy and wealth of detail.

Now, we English craftsmen, on the other hand, have a leaning towards broad masses of colour and simpler effects.

Of course, the value in stencilling is mainly in the design, and the fitness of design to stencilled application, the care and perfection of cutting out, and the unlimited possibilities of the various methods of execution.

The stencil plate, if it is to serve as a shield through which the design is to be worked, must, of course, hold together. In the simplest and most elementary patterns, such "ties," as they are called, are needed. It is futile to try to avoid or disguise them. The "ties" are the key of the situation, and the art of the designer is in contriving that they take their proper place in the scheme, never unduly asserting themselves, and when felt helping instead of hurting the effect. The "ties," if judiciously distributed, form an additional element to the beauty of the design, and therein lies the art of stencilling.

The best designs are those in which construction is confessed—where the "ties" form a feature in the design. The stencil is the most severe and exacting master of simplicity. Shall I say it teaches one how to sweep away all that is trivial and unnecessary, showing one the value of broad, flat tones combined with accurate drawing, proving conclusively the vital importance of composition?

A good design is tied together by the very parts that render it beautiful in composition. Of course, there are two kinds of "ties"—good and bad. Those "ties" which require "filling in" are the wrong kind. Stencilled work should, as far as possible, remain untouched after the stencil plate has been removed from the work.

The paper for cutting the stencil plate is laid on a large slab of glass, so that the cut shall be perfectly clean on the under surface, the point of a sharp penknife being used for the cutting out process, keeping the point of the forefinger constantly pressed upon the back of the blade. The shorter the blade the better, as this prevents the steel bending when under pressure, which would otherwise interfere with the accuracy of the work. The stencil paper should not be fastened down, but let the left hand control the loose paper, turning it in various directions in sympathy with the movements of the knife. In cutting straight lines one is apt to use a mechanical guide for the stencil knife. Much better results are to be achieved from the use of the knife by free-hand manipulation; and, whenever possible, cut towards yourself and in such a way as to keep the line of the knife's progress well in view.

There are two general methods of stencilling. First, those stencil plates in which the cut out patterns represent the ornamental design in the colour applied, and, second, where the stencil is cut to form a background, so that the forms of the design are expressed by the colour of the ground stencilled upon.

The latter is what is known as a background stencil, generally one colour being used; but these patterns are usually incomplete until a line of contrasting colour has been applied a little distance away from the stencil work, leaving a boundary line of the surface colour, which becomes one of the decorating colours.

Then, again, patterns can be designed which combine the two methods, thus making the final effect appear to have much more labour involved than would actually be so. The results obtained by this method are very effective. One must be careful to cut pieces of the actual ornament on the background plate, which renders accuracy in fitting. If several plates are being used, of course, the greatest care must be taken to make them coincide.

The paint, stain, or dye should be applied by a gentle movement of the brush known as "stippling" or "dabbing." To rub the paint on is sure to result in the paint being carried to the underside of the stencil plate, causing smeared or "woolly" edges. Always work from the edges of the forms towards the centre of openings.

In multi-coloured work an improved richness is given by gradually merging one colour into another. This is known as blending, and to do this successfully the darker colours should always be applied first, following with the medium colours, and finishing with the lightest colours, all by stippling. And just as the "ties" give character and form to the stencil, so also the dabbing on of the pigment gives to stencilled work a quality all its own. Simple stencilling in one or more colours by means of a single stencil plate forms the basis of all other stencilled work.

Then, again, unique effects are also obtainable with the use of stains. Here is a special opportunity for blending rich colouring with superior effect. Mural decorations of a textile character, such as canvas, linen, &c., can be successfully decorated by stencilling with stains or dyes. Their rough texture softens the effect of brilliant colours, which on smooth surfaces would look gaudy.

Painted decoration, whether by hand or stencil, was no doubt the immediate forerunner of wall papers. The earliest reference to paper hangings is to be found in the inventory taken at a monastery at the Isle of Sheppey, in Kent, in the reign of Henry VIII., and I have no doubt in my own mind that the earliest method of colouring paper hangings was by the use of stencil plates.

There are few subjects so closely affecting our lives as the decoration of our homes, and it may be safely affirmed that the responsibility rests with us as craftsmen.

I propose showing you some examples of stencilled fabrics, wall papers, friezes, and borders, some of which require as many as twenty-four stencil plates. I am sure you will agree that I am very much in favour of stencilling, though I do not suggest that it is suitable for all houses or public buildings, but think it should be more used by us as decorators; in fact, stencilling is one of the most decorative of the

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* A Paper read at Painters' Hall.

arts, and the accomplished stenciller finds no bounds to the gradation of colour which he or she can produce.

I believe I am correct in stating that our President, Mr. J. D. Crace, used the stencil plate in conjunction with hand-work in carrying out his beautiful work.

The stencil plate costing little can be thrown aside when one room has been decorated without great expense, and thereby we get rid of the terrible mechanical appearance of our rooms, which so often become so like other people's rooms, or at least remind us of them.

As a rule, this class of work is relegated by the decorator to mean little borders and mechanical details in churches; but it is capable of all sorts of beautiful variation, and should at once regain its proper place in decoration. On gradation in colour alone is is well worthy of consideration, and produces a much finer effect than block printing and less mechanical.

Stencilling requires a great deal of forethought, and one wants, besides a penknife and a brush, prevision and precision, some invention, and a lot of patience.

If successful, you have produced a work of art which can be multiplied at will, but which, nevertheless, need never become common, for each example is a separate creation in itself.

NEW CATALOGUES.

Messrs. George Wright, Ltd., 155 Queen Victoria Street, E.C. (Works, Burton Weir, Rotherham), have given up the first part of their new catalogue, L. 82, to school and hospital stoves. A special feature is made of their latest type of hospital ward stove, which is of the open fire ventilating warm-air class, and has many distinct features. Similar care is taken to show and explain their pure warm-air ventilating grates, which are exceptionally strong. Indeed, some thousands of them are already in use in schools. In the improved patterns a corrugated iron boiler is fitted at the back, by means of which hot water circulation can be obtained in the same or adjoining rooms. Numerous illustrations are also given of mantel registers, cooking ranges, ventilators, sanitary goods, &c.

The illustrated catalogue and price list of automatic roof ventilators which has come to us from the Windsor Sheet Metal Works, Ltd., 150 North Woodside Road, Glasgow, is remarkable for its thoroughness. Some sixty pages are devoted to various designs, each being accompanied by a detailed price list for the ventilators in strong galvanised steel. Special prices will be quoted if copper or zinc is required. It is no easy matter to impart beauty to an excrescence like a ventilator, but the catalogue shows that in some cases this can be done. As ventilating engineers, the firm make, and here illustrate, wall air inlets, ceiling panels, mica flap ventilators, metal chimney cowls for preventing down draught, &c.

Messrs. J. H. Sankey & Son, Ltd., Essex Wharf, Canning Town, E., have had just sixty years' experience in the manufacture and sale of firebricks and fireclays, and during that time have built up what must be quite one of the biggest connections in the kingdom. We have received their illustrated catalogue (Section F.) dealing with this department. Messrs. Sankey guarantee the bricks they supply to be absolutely the best of their kind. Their London stock alone amounts to more than 2,000 tons. Under these conditions it is easy to understand how they can maintain their reputation.

One cannot often say of a trade catalogue that it was so fascinating as to be difficult to put down before the last page was reached. But that remark is applicable to "Kahn System Illustrated," which has been issued by the Trussed Concrete Steel Co., Ltd., in a really attractive fashion. Only a small amount of space is given to the subject of reinforced concrete in general and the Kahn system in particular. The bulk of the book consists of excellent photographs of some of the ten thousand important Kahn structures in various parts of the world. Most of the work, however, has been selected from this country, where architects have adopted the system for all sorts of buildings. The book is printed on the loose-leaf principle, so as to enable any one of the sections to be sent separate to persons specially interested.

The Carron Company evidently fully realise the decorative importance of the fireplace and chimneypiece. For many centuries these have received the particular attention of English builders. Indeed, the chimneypiece was a favourite field for experiments in changes of style. Artists still regard it somewhat in that light, and many happy designs are made by architects and the better class of manufacturers. A striking instance of the latter is to be seen in the latest carefully-priced catalogue devoted by the Carron Company to fireplace suites. The style of production is of the best, and worthy of the designs shown, whether they be from eighteenth-century patterns or the scientifically-constructed fires of to-day. In their foreword the Company say they will welcome an opportunity to offer suggestions and submit drawings showing different styles of fireplace treatment for any of their high-class grates, or to prepare new designs to meet special requirements.

The fact that every month three thousand tons of "Sirapite" plaster is now sold would seem to prove that the Gypsum Mines, Ltd., possess a material which has won high favour in the building world during the past twenty odd years. It can be anything but a disadvantage that it is an All-British production made of English materials by English workmen. But without any real merits of its own such a point would avail little. The Gypsum Mines, Ltd., Robertsbridge, Sussex, have just compiled a booklet describing Sirapite, directions for its use, and an abridged list (accompanied by illustrations) of the buildings in which the cement plaster has been used. The list is an imposing one for its variety, length, and importance.

Messrs. F. McNeill & Co., of Lamb's Buildings, Bunhill Row, E.C., have issued a new catalogue of their patent slag wool known as "Lion Brand." It contains much information as to the best methods of application of this material both for fire-resistance, insulation, and sound-deadening. Against each method the approximate cost is given. Four pages record various official and private tests on this material.

The North British Rubber Company, Ltd., give in a small booklet ten illustrations in colour from photographs of jobs where their "North British" rubber tiling has been laid down. These show it as used for entrance halls, bathrooms, public offices, and steamships. A large variety of colours is available, so that any scheme of decoration can be easily matched and any pattern may be obtained. The tiling is supplied ¼ inch, ⅜ inch, or ½ inch in thickness.

VARIETIES.

The Glamorgan County Council propose to provide new elementary schools at Pantynawel and Edmondestown, providing for 350 and 200 children respectively, also to make additions to the elementary school at Deri by 100 places and Pencoed by sixty places.

Mr. Leslie R. Vigers, PP.S.I., as arbitrator, last week opened the hearing of the claim by Messrs. Carter, Platt & Co. against the Corporation for £51,000 as compensation for the acquirement of 50-58 Knightrider Street, in connection with the proposed northern approach to St. Paul's Bridge.

The Dean of Canterbury is making an appeal for £1,000 to complete the cost of the reparation of the south-west or Chichele tower of the cathedral. The work will be completed by Easter. The restoration of the three towers has occupied ten years, involving an expenditure of £35,000.

The trustees of the Radcliffe Camera, Oxford, after receiving a report of some serious falls of stone from the upper part of the exterior of the Camera, decided to renew the decayed stonework on the south, south-west, and west faces of the building, in accordance with the advice of Sir T. G. Jackson, Bart, R.A. The work is now in progress.

The Concrete Institute have decided to hold informal meetings once a month during the session for the benefit of junior members. The first meeting will take place to-day, April 3, at 7.30 P.M., in the Council room on the first floor at Denison House, Westminster, when Mr. E. Fiander Etchells, F.Phys.Soc., M.Math.A., A.M.I.Mech.E., Member of Council C.I., will take the chair.

Brighton Town Council last week approved plans for the construction of a covered bandstand and concert hall on the West Pier, while the Palace Pier is to be considerably widened and provided with a new covered bandstand to accommodate 4,000 persons, in addition to an outdoor restaurant at the pier-head, in place of the miniature circus, which has been removed. The two pier schemes will involve an expenditure of something like £40,000.

Sir Hubert von Herkomer, R.A., died on Tuesday last at Budleigh Salterton, Devon, at the age of sixty-four. Among this distinguished artist's many accomplishments was that of architecture as illustrated by the pseudo-Bavarian castle he designed for himself at Bushey. In 1879 he was elected an Associate of the Royal Academy, defeating Lady Butler by one vote, and in 1890 he was raised to full academic rank.

WARING & GILLOW, LIMITED.

THE PROGRESS OF THE NEW COMPANY.

LOSS OF £50,000 TURNED INTO A PROFIT OF £51,000.

THE First Annual General Meeting of Waring & Gillow, Limited, was held on March 30 at the premises of the Company in Oxford Street, London, W.

Mr. Kennedy Jones, the Chairman, presided.

The Secretary (Mr. Joseph Ritson) having read the notice calling the Meeting and the Report of the Auditors,

Mr. Kennedy Jones said: I do not propose to weary you with a prolonged examination in detail of the figures of the Balance Sheet which you have before you. Personally, I suspect a Balance Sheet which requires an elaborate explanation from the Chairman. In my view the Accounts presented to Shareholders ought to be capable of easy and quick understanding, and so far as your Directors are concerned, they, together with the Auditors, laboured to get the figures of your very large and exceedingly complex business into a simple yet comprehensive form, which would enable you to at once grasp the position in which the Company stands. The Balance Sheet before you covers, as you are aware, a period of seventeen months, a time almost wholly devoted to the reconstruction and reorganisation of the business in all its branches, yet we have emerged with a net trading profit of £51,000, which represents a progress that will be best understood when I tell you that the loss made during the last seventeen months of the Receivership is reckoned to have totalled to about the same figure. So that we can claim in our first period to have transformed a £50,000 loss into a profit of £51,000. That, I trust you will agree, is not unsatisfactory. After paying the Debenture Interest and Directors' and Auditors' and Trustees' fees, we are left with £15,000, which we propose to utilise in writing off the whole of the preliminary expenses incurred in the formation of this Company, and to carry forward the sum of £4,000. Having regard to the fact that for most of the seventeen months with which we are dealing your Board were occupied in dealing with the wreckage of the old Company, we are tempted to regard the result as being at least of good omen for the future of your business. There are two or three sets of figures in the Balance Sheet to which I think I might draw your attention, and which, perhaps, are not without significance as to your future.

The first is that you as a Company owed on January 31 a matter of some £97,000, and that on the same date you had in cash and in book debts owing to you a sum of £390,000. I have heard it suggested that the amount of book debts seemed large, but if you keep in mind the fact that the turnover of your business in the last twelve months amounted to over one million pounds, indeed to close upon eleven hundred thousand pounds, the book debts will be found to represent not more than three months' trading, and that, in a business where, by reason of the many and considerable contracts you have, where long credit is taken by our clients, is not a term to which any reasonable objection can be taken.

The other live assets of your business and stock-in-trade, which total about £690,000, have been taken in to your Balance Sheet on the most conservative basis. Absolutely new stock has been taken in at cost, and in the case of stock which has been in the showrooms for any period of time with considerable depreciation, while the freehold and leasehold premises, plant, and machinery, stocks of timber and material have all been set down by outside valuers at figures well within their value. I think it is of importance to recognise that the live assets of your business in value cover almost two-thirds of the whole capital of your Company.

The goodwill figure on the Balance Sheet is, of course, a purely arbitrary one. It is accounted for by the fact that we have among our liabilities taken in the shares which we issued fully paid at their face value, and not at their nominal value, at which they were accepted by the holders. No one who took Preference Shares in lieu of the old debentures imagined that the Preference Shares were worth anything like their face value, and those to whom the Ordinary Shares were given as a bonus received them as pieces of paper which might in the long—and I hope not too distant future—be of some value, but which certainly had no value seventeen months ago, and no particular value even to-day.

There is just one point in connection with the Preference Shares which has given rise to some misconception in the financial columns of some newspapers. The Preference Shares only became cumulative as to dividend on January 1 of this year. You will remember when the scheme of the reconstruction was before the courts we who represented the new Debenture-holders fought hard with the Committee of the old Debenture-holders to make the dividend on the new Preference Shares cumulative as from the beginning of 1915. We felt then, as indeed we feel now, that it will take every bit of three years or so to improve the position of this Company so as to enable it to reach that stage of profit at which it will be capable to meet in full the liability of the Preference Shares, but Mr. Jennings, who represented the old Debenture-holders, was equally as strong that the period during which the shares should be non-cumulative should only extend over twelve months, and ultimately we compromised on the period of sixteen months, and so fixed on January 1 of this year as the date from which the Preference Shares had a right to claim the dividends of the Company.

Consequently we began our new financial year on February 1 with a debt merely of one month's Preference dividend against us—a debt which is covered by the amount we have carried forward. I have every hope for the future of this Company, but I have no expectation that the progress during the next twelve months, considerable as I expect it to be, will be great enough to enable the Directors to meet the whole of the Preference dividend in twelve months' time. That opinion is also the opinion of your Board, and though our prophecy may be falsified by results, yet I deem it only right at this Meeting to warn you against indulging in the hope that we shall be able in twelve months' time to pay out of the profits a matter of some seventy or eighty thousand pounds. Even if our success is greater than we anticipate it will be, it will be much the wiser course for this Company to build up large liquid cash reserves, which can be made remunerative by reinvestment in the growing business of your Company. That, however, is a matter which we shall all be better able to deal with twelve months hence.

Well, gentlemen, your Board so far are satisfied with the progress which has been made. They are satisfied with the report and the accounts they have been able to present to you at the end of this their first period of management. They believe that the present year will enable them to show further and, perhaps, considerable progress. Every branch of your business, with one small exception in Canada, shows a profit—a profit which in every case we have reasonable hopes of improving this year.

The whole of your business has been reorganised from top to bottom. We have almost rebuilt your factory at Hammersmith. We are rebuilding your factory at Lancaster, and we intend when we are through with the factory at Lancaster to take in hand the complete reorganisation of your factory at Liverpool. The fact that we have made profits, however small, in every detail of your business, with the one slight exception I have spoken of, shows that we have chopped out almost all of the dead wood which we found in the concern as it came to us, and we naturally expect that we shall reap greater benefit in the coming year from all the alterations we have made, but we are conscious that it may still be slow work getting to that pinnacle of prosperity which we hope ultimately to achieve.

In addition to perfecting our business methods, in addition to perfecting our workmanship, our methods of handling contracts, whether large or small, with efficiency and economy, we have to regain—and this is always a slow process—the confidence of the public in all that Waring & Gillow does—a confidence which was sadly shattered by the mistakes of the old Company. I think I may say without exaggeration that we are renowned throughout the world for our taste and our craftsmanship. We are now seeking—and I hope that we will achieve—an equal renown for our efficiency and our economy. It is our desire to have your firm known not only as the most perfect furnishing house in Europe, but one to which people of all kind and degree can come in the confident knowledge that they are not only going to obtain the best material and the best workmanship, but the best value for money in England.

Personally, may I say that I am extremely satisfied not only with the progress we have made, but with the help which I have received from all my colleagues on the Directorate and from every worker in every branch and detail of your vast business? Without exception, they have laboured unceasingly during the last seventeen months to help in the work of reconstructing and reorganising the business and placing it in the position which it holds to-day. I am grateful to them. For myself I have the personal satisfaction of being, as Chairman of your Company, at the head of operations which I feel certain are going to result in the permanent and the prosperous continuance of a business which, established so long ago as 1695, has influenced the taste and comfort of homes not merely in this country, but has carried the "English feeling" into practically all parts of the civilised world.

I beg to move that the report and accounts as presented to you be approved and adopted.

Mr. Japhet seconded the motion, which was carried unanimously.

Messrs. Saemy Japhet, William J. Jennings, and Henry W. Weaving were re-elected directors of the Company.

It was proposed and carried unanimously that the election of Auditors be left in the hands of the Board.

The proceedings terminated with a vote of thanks to the Chairman.

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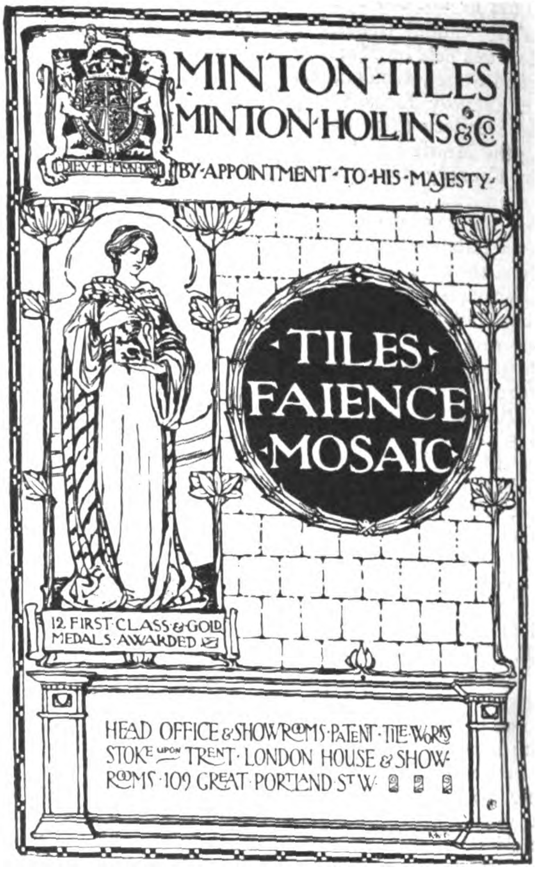

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THE
The Architect and Contract Reporter.
FRIDAY, APRIL 10, 1914.

EDITORIAL NOTICES.

The Editor will always be pleased to examine drawings or articles with a view to publication, but cannot be responsible for the safety of those sent, though every reasonable care will be taken. Contributors desiring payment should clearly state their wishes. No payment will be made until after publication, and a commission to prepare articles or drawings does not necessarily imply acceptance or approval.

No communication can be inserted unless authenticated by the name and address of the writer—not in every case for publication, but as a guarantee of good faith.

We have upon our staff a very eminent Barrister, who will be glad to answer in the columns of this paper any legal question that may be of interest to our readers. All letters must be addressed " Legal Adviser," Office of "The Architect," Imperial Buildings, Ludgate Circus, London, E.C.

The Editor will be glad to receive from Architects in London and the Provinces results of Competitions and Tenders and other particulars of Works in progress in which they may be interested.

TENDERS, ETC.

⁂ *As great disappointment is frequently expressed at the nonappearance of Contracts Open, Tenders, &c., it is particularly requested that information of this description be forwarded to the Office, Imperial Buildings, Ludgate Circus, London, E.C., not later than 2 P.M. on Thursdays.*

COMPETITIONS OPEN.

Conway.—The Board of Guardians invite schemes, with plans, for the laying out of a plot of land near Conway for the provision of one relieving home and four cottages homes, and for laying out of the remainder of the plot for future cottage homes, recreation grounds, &c. Premiums of £10 and £5. Commission will be paid for work carried out during the first five years from date of acceptance of a scheme. Send applications to Mr. J. W. Post, clerk to the Guardians, Union Offices, Conway.

East Preston.—The Southstrand Sports Club (newly formed) invite plans for a clubhouse to be erected on the Southstrand Estate, East Preston, near Worthing. The successful competitor will be instructed to carry out the work, and will receive, in addition to the usual fees, a bonus on completion of the building. A plan of the site and full particulars can be obtained of Mr. William Hollis, surveyor, Southstrand Estate Offices, Church End, Finchley, London.

Glasgow.—May 1.—The Corporation are prepared to receive from sculptors competitive models and relative offers for four groups of symbolical sculpture to be placed on the abutments of the new bridge at Radnor Street, Kelvingrove Park, Glasgow. Copies of the conditions of the competition may be obtained on application to Mr. J. Lindsay, town clerk, City Chambers, Glasgow.

Grimsby.—June 2.—The Building Committee of the proposed Constitutional Club invite designs for premises to be erected at the corner of Victoria Street and Upper Spring Street, at an estimated cost of £3,000. Premiums of £40, £20, and £10 are offered. Deposit of £2 2s. will be sent back on receipt of designs or on return of the particulars within 10 days. Mr. H. W. V. Sheckell, secretary, Constitutional Club, Victoria Street, Grimsby.

Hendon.—May 11.—The Education Committee will be prepared to receive competitive designs for a school at Hale Grove Gardens, Mill Hill. Conditions of competition and plan of site may be obtained from Mr. James Anderson, secretary to the committee, Council Offices, Hendon, N.W.

Hythe.—May 30.—The Town Council invite designs for a concert hall and public shelter, for which premiums of fifty, twenty-five, and ten guineas will be awarded. Deposit £1 1*s*. (returnable). Condition, site plan, &c., may be obtained on application to Mr. Bernard C. Drake, town clerk, Hythe, Kent. (See advertisement.)

London.—May 4.—The Bridge House Estates Committee of the Corporation of the City of London invite designs from British architects for the architectural treatment of the new St. Paul's Bridge. The conditions of the competition and instructions may be obtained upon payment of a deposit of £3 3*s*., which will be returned on receipt of a design in accordance with the conditions. A premium of £300 is offered for the design which may be placed first, and further premiums of £200 and £100 respectively. The committee will be advised by Sir William Emerson, P.P.R.I.B.A., as assessor, whose decision will govern the award of the premiums and be final and binding in all stages of the competition. The Town Clerk, Guildhall, London, E.C.

Mold.—The Urban District Council invite architects to submit plans, &c., for a fire station and caretaker's house, to be erected at Earl Road. Further particulars may be obtained from Mr. D. Thomas, surveyor, Town Hall, Mold.

Sacriston.—April 15.—The Trustees of the Literary Institute are prepared to receive plans for the proposed Institute. All information can be obtained from Mr. John Walker, secretary, 11 Eliza Street, Sacriston, Durham.

CONTRACTS OPEN.

Abertillery.—April 20.—For laying out and improvement of school grounds, including the erection of boundary walls, &c., at the county school, for the Governors. Deposit £1 1*s*. Mr. N. J. Llewellyn, clerk to the Governors, Council Offices, Abertillery.

Alcester.—April 24.—For the enlargement of the police station and the erection of a pair of cottages and works incidental thereto at Alcester, for the Warwickshire County Council. Deposit £1 1*s*. Mr. J. Wilmot, county surveyor, 6 Waterloo Street, Birmingham.

Ardwick.—April 25.—For works required in the erection of Nansen Street Municipal School, Ardwick, Manchester, each section to be let separately as follows: (1) Excavator, drainer, concreter, and bricklayer; (2) asphalter; (3) stone mason; (4) slater; (5) carpenter, joiner, and iron and steel fixing; (6) cast ironwork (no fixing); (7) wrought iron and steel work (no fixing); (8) plumber and glazier; (9) plasterer and painter. Deposit £1 1*s*. The Education Offices, Deansgate, Manchester.

(*Continued on page* 15.)

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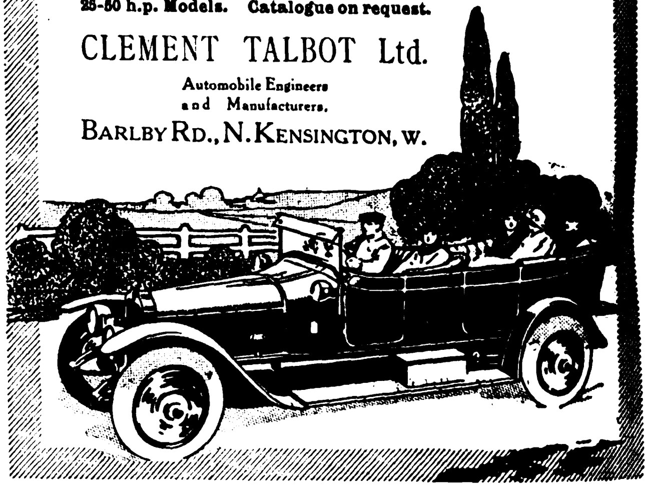

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Ashford.—April 30.—For erection of a building, comprising hot-water baths, attendant's room, &c., at Beaver Road, for the Urban District Council. Mr. W. Terrill, surveyor, 5 North Street, Ashford, Kent.

Balby-with-Hexthorpe.—April 24.—The West Riding Education Committee invite whole or separate tenders for the following works at the Council School—viz.: alterations, new screens, &c. (builder and joiner). The Education Architect, County Hall, Wakefield. Send £1 deposit by separate letter to the West Riding Treasurer, County Hall, Wakefield.

Barrow-in-Furness.—April 14.—For erection of a new classroom and alterations to the existing building, at the Latona Street infants' school, Vickerstown, for the Corporation. The Borough Engineer's Office, Town Hall, Barrow-in-Furness.

Barrow-in-Furness.—April 20.—For laying new floor, providing and fixing screen, &c., at the old town hall, for the Corporation. The Borough Engineer's Office, Town Hall, Barrow-in-Furness.

Bedwellty.—April 17.—For erection of twenty semi-detached houses at Bedwellty, for the Bedwellty Building Club. Mr. H. Caldwell, C.E., Estate Office, Blackwood, Mon.

Beverley.—April 28.—For the erection of clerk and steward's house, six cottages, farm bailiff's house, and dairy at the East Riding Asylum, for the Visiting Committee. Deposit £1 1*s*. Mr. H. T. Tate, agent, County Hall, Beverley.

Blaenavon (Mon.).—April 20.—For extensions and alterations to the Blaenavon Hill Side School. Deposit £1 1*s*. Mr. J. Bain, F.R.I.B.A., County Council Offices, Newport, Mon.

Blaenavon (Mon.).—April 20.—For erection of domestic arts and manual instruction centre. Deposit £1 1*s*. Mr. J. Bain, F.R.I.B.A., County Council Offices, Newport, Mon.

Bridport.—April 11.—For erection of a new hospital at Bridport, Dorset, for the committee of the Bridport Hospital. Send names and £1 1*s*. deposit by April 11 to Messrs. Shayler & Bill, architects, Wellington, Salop.

Bury.—For the erection of a picture house. Mr. A. E. Millward, 9 Knowsley Street, Bury, Lancs.

Chitterne.—April 17.—For erection of eight cottages in the parish of Chitterne, for the Warminster Rural District Council. Deposit £1 1*s*. Mr. C. C. Hancock, surveyor to the Council, High Street, Warminster.

Combe St. Nicholas.—April 17.—For erection of farm buildings at Combe St. Nicholas, near Chard, for the Somerset County Council. Mr. E. G. Shettle, district land agent for the County Council, 6 Princes Street, Yeovil.

Dartford.—April 22.—For conversion of gate porter's lodge into steward's house at Long Reach Smallpox Hospital, Dartford, Kent. for the Metropolitan Asylums Board. Deposit £1. Mr. W. T. Hatch, M.I.C.E., M.I.M.E., engineer-in-chief. The office of the Board, Embankment, E.C.

Dodworth.—April 25.—For erection of Council offices in High Street. Mr. E. W. Dyson, architect and surveyor, 10 Regent Street, Barnsley.

Ebbw Vale (Mon.).—April 16.—For erection of 214 cottages, for the Ashgrove Building Club at Ebbw Vale, Mon. The work will be let in two separate contracts—No. 1, 128 cottages; No. 2, 86 cottages. Mr. W. Rosser, architect and surveyor, Wildings' Chambers, Newbridge, Mon.

Fletton.—April 20.—For the enlargement of the county secondary school, Fletton, by the addition of two new classrooms, for the Hunts. Education Committee. The County Surveyor, Market Place, Huntingdon.

Glossop.—April 11.—For erection of a nave and aisles at All Saints' parish church. Forward names and £3 3*s*. deposit by April 11 to Messrs. C. & C. M. Hadfield, architects, Cairns Chambers, 19 St. James Street, Sheffield.

Godmanchester.—April 13.—For building a river wall in front of the causeway, for the Town Council. The Surveyor's Office, Post Street, Godmanchester, Hunts.

Golcar.—April 15.—For the various works required in erection of additions to mill premises at Golcar. Messrs. Lunn & Kaye, architects and surveyors, Milnsbridge and Huddersfield.

Hemsworth.—April 20.—For erection of four almshouses and the extension and improvement to twenty existing almshouses at Holgate Hospital, near Hemsworth, for the Trustees of Archbishop Holgate's Hospital. Mr. F. H. Howlett, architect, 1 Polam Plantation, Darlington.

Hereford.—April 14.—For erection and completion of sixty-two cottages, subject to the sanction of the Local Government Board to the necessary loan, for the Town Council. Tenders may be made for the erection and completion of the whole of the cottages, or any of the following—viz.: (Type A) thirty-six cottages in nine blocks of four each; (B) fourteen cottages in pairs; (C) four cottages in one block; (D) eight cottages in two blocks of four each. Deposit 10*s*. 6*d*. Mr. J. Parker, city surveyor, Town Hall, Hereford.

Hoxne.—April 27.—For the enlargement by about 150 places of the Cross Street school, for the East Suffolk County Education Committee. Send applications and £1 1*s*. deposit by April 14 to Mr. J. Webb, committee's surveyor, Education Offices, County Hall, Ipswich.

Houghton-le-Spring.—April 20.—For erection of a block of two children's homes, for the Guardians. Deposit £1 1*s*. Messrs. J. G. & R. G. Cowe, architects, Chester-le-Street.

How Mill.—For any of the work in connection with additions to Watch Hill. Mr. T. Taylor Scott, F.R.I.B.A., architect, 36 Lowther Street, Carlisle.

Ireland.—For sundry alterations, including building, plumbing, and painting works to be carried out at Linen Hall Buildings, Dublin, in connection with the forthcoming Civic Exhibition. Mr. Geo. L. O'Connor, C.E., F.R.I.A.I., architect, Mansion House Chambers, 27 Dawson Street, Dublin.

Ireland.—April 15.—For erection of a Presbyterian church at Dromore, County Down. (Mr. S. Stevenson, architect, 83 Royal Avenue, Belfast.) Deposit £1 1*s*. Mr. S. C. Hunter, quantity surveyor, Scottish Provident Buildings, Belfast.

Ireland.—April 20.—For building a Labour Exchange and Divisional Office at Lord Edward Street, Dublin. Deposit £1. Mr. H. Williams, secretary, Office of Public Works, Dublin.

Ireland.—April 21.—For building sixty labourers' cottages, for the Lisburn Rural District Council. Charge 5*s*. Mr. W. Sinclair, clerk, Workhouse, Lisburn.

Ireland.—April 23.—For erection of two dwellings at Rathlin Island, Co. Antrim, and a similar block at Greencastle, Co. Down, for the Commissioners of Irish Lights. Deposit £2 2*s*. Mr. H. G. Cook, secretary, Irish Lights Offices, Carlisle Buildings, Dublin.

Ireland.—May 8.—For the erection of a new National School at Dunbell, Co. Kilkenny, and a new National School at Castlewarren, Co. Kilkenny. Rev. J. Cahill, P.P., Clifden Villa, Kilkenny.

Knottingley.—April 24.—The West Riding Education Committee invite whole or separate tenders for the following works at Knottingley Holes Council School—viz.: new folding partitions, conveniences, &c. (builder, joiner, and plumber). The Education Architect, County Hall, Wakefield. Send £1 deposit by separate letter to the West Riding Treasurer, County Hall, Wakefield.

Liscard.—April 14.—For erection of Liscard new telephone exchange, for the Commissioners of H.M. Works and Public Buildings. Deposit £1 1*s*. The Postmaster, Birkenhead, and H.M. Office of Works, Storey's Gate, London, S.W.

London.—April 22.—For painting, distempering, and general repairs at their infirmary, Colindale Avenue, Hendon, N.W., for the City of Westminster Union. The Steward at the Infirmary, or Mr. W. J. Lickley, clerk to the Guardians, Princes Row, Buckingham Palace Road, S.W.

London.—April 22.—For supplying and fixing wood-block flooring at the union infirmary, Fulham Road, S.W., for the Guardians of the City of Westminster Union. The Guardians' Offices, Princes Row, Buckingham Palace Road, S.W.

London.—April 23.—For erection of a sanitary tower and other works at their infirmary, Raine Street, Old Gravel Lane, E., for the Guardians of the parish of St. George-in-the-East. Mr. W. Watson, A.R.I.B.A., architect, 53 and 54 Chancery Lane, W.C.

London.—April 23.—For redecorating and renovating the workhouse and the infirmary premises, Raine Street, Old Gravel Lane, E., for the Guardians of the parish of St. George-in-the-East. Mr. W. Watson, A.R.I.B.A., architect, 53 and 54 Chancery Lane, W.C.

London.—April 23.—For decorative works and repairs at their infirmary, Marloes Road, Kensington, for the Kensington Board of Guardians. Mr. W. R. Stephens, clerk, Guardians' Offices, Marloes Road, Kensington, W.

Oakdale.—April 16.—For erection of an hotel at Oakdale Valley, for the Abertysswg Hotel Co., Ltd. Send applications by April 16 to Mr. A. F. Webb, M.S.A., architect and surveyor, Tredegar Chambers, Blackwood, Mon.

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London, W.

London.—April 23.—For the demolition of certain houses and alterations to others in Abingdon Street, London, S.W., for the Commissioners of his Majesty's Works and Public Buildings. Deposit £1 1s. H.M. Office of Works, &c., Storey's Gate, S.W.

London.—April 24.—The Commissioners of his Majesty's Works, &c., invite constructional schemes and tenders based thereon for the construction in reinforced concrete of a substation at Mount Pleasant. Any system or systems of construction may be adopted for the whole or part of the work, and full details must be furnished immediately for examination if necessary. Deposit £2 2s. Mr. E. Cropper, H.M. Office of Works, Carlisle Place, Westminster, S.W.

Lower Halstow.—May 1.—For execution of a septic tank and incidental drainage work at the Council School, for the Kent Education Committee. Mr. H. Greensted, correspondent, High Street, Sittingbourne, Kent.

Macclesfield.—April 15.—For erection of a sanitary convenience, York Street. Mr. S. C. Baggott, borough surveyor, Town Hall, Macclesfield.

Milnrow.—April 15.—For demolishing an existing retort house and chimney and building a new brick retort house 78 feet long by 37 feet wide, for the Milnrow Gas Co. Mr. J. W. Bottomley, manager, Gasworks, Milnrow.

Nantwich.—April 18.—For works in erection of certain new buildings and alterations, &c., in existing premises, as set out, for the Cheshire County Council—viz.: Ridley Estate, near Nantwich, alterations, additions, and repairs to existing dwelling-houses and farm buildings at Ridley Hall, Ridley Farm, and Chesterton Farm, now in the occupation of Messrs. Brown, Willis, and Ankers respectively; Woolstanwood Estate, near Crewe and Nantwich, erection of two single dwelling-houses and two sets of farm buildings. Deposit £1. Mr. W. H. Lancaster, land agent, 49 Northgate Street, Chester, and the Estate Office, 10 Wellington Road, Nantwich.

New Tredegar (Mon.).—April 20.—For erection of manual-instruction centre. Deposit £1 1s. Mr. J. Bain, F.R.I.B.A., County Council Offices, Newport, Mon.

Northampton.—April 15.—For erection of Northampton new post office. Drawings, specification, and a copy of the conditions and form of contract may be seen on application to the Postmaster, Northampton. Bills of quantities may be obtained on payment of £1 1s. at H.M. Office of Works, Storey's Gate, London, S.W. (See advertisement.)

Oulton-with-Woodlesford.—April 24.—The West Riding Education Committee invite whole or separate tenders for the following works in enlargement of Council School—viz.: builder, joiner, slater, plumber, plasterer, and painter. The Education Architect, County Hall, Wakefield. Send £1 deposit by separate letter to the West Riding Treasurer, County Hall, Wakefield.

Prestwich (Lancs.).—April 17.—For erection and completion of additional attendants' rooms at the County Lunatic Asylum. Mr. T. Chadwick, A.R.I.B.A., architect, 16 Princess Street, Manchester.

Radstock.—April 14.—For erection of a block of bakery premises and for the execution of certain other work near the Midland Railway Station, for the Radstock Co-operative and Industrial Society, Ltd. Mr. William F. Bird, M.S.A., architect, Midsomer Norton.

Rotherham.—April 15.—For erection of offices at Rotherham (Masboro'), for the Midland Railway Company. The Engineer's Office, Derby Station.

St. Albans.—For erection of a mission chapel at Sandridge. Charge for specifications, 1s. The Secretary, 37 London Road, St. Albans.

Sandwich.—April 17.—For erection of a proposed parish hall, and works in connection therewith. Deposit £3 3s. Messrs. Jennings & Gray, architects, 4 St. Margaret's Street, Canterbury.

Scotland.—April 22.—For the following works required in connection with the extension of the municipal buildings, Glasgow—viz.: (1) digger, mason, and brick work; (2) steel beams, &c.; (3) structural steel work; and (4) carpenter work, for the Corporation. Deposit £20 for the digger, mason, and brick works specification and schedule, and £10 for the specification and schedule relative to each of the other works. Messrs. Watson & Salmond, architects, 242 West George Street, Glasgow.

Scotland.—April 24.—For the following works required in connection with the proposed extension of the Meat Market at corner of Hill Street and Armour Street—viz.: (1) Carpenter and joiner works, and (2) plumber work, for the Glasgow Corporation. The Office of Public Works, 64 Cochrane Street, Glasgow.

Scotland.—May 9.—For erection of a concrete beacon on the Whitestone Bank, which lies off the Point of Ayre, Isle of Man, for the Commissioners of Northern Lighthouses. The Whitestone Bank is submerged at all states of the tide. Deposit £1 1s. Mr. D. A. Stevenson, M.I.C.E., engineer to the Commissioners, 84 George Street, Edinburgh.

Sharlston (near Wakefield).—April 11.—For the various trades required in erection of a Sunday school and assembly hall, for St. Luke's Church. Send names by April 11 to Messrs. J. W. Cocking & F. Abbey, joint architects, District Bank Chambers, Huddersfield.

Sheffield.—April 11.—For the work to be done in erection of a shelter for motor ambulances at the Union Hospital. Mr. S. D. Baxter, clerk of works, Firvale Workhouse, Sheffield.

Sherburn.—April 16.—For alterations and additions to the master's house, for the Governors of Sherburn Hospital. Deposit £1 1s. Messrs. J. Potts & Son, architects, 12 Eldon Square, Newcastle.

Shotley.—April 27.—For erection of a Council school (about 180 children), for the East Suffolk County Education Committee. Send applications and £1 1s. deposit by April 14 to Mr. J. Webb, committee's surveyor, Education Offices, County Hall, Ipswich.

Sparsholt.—April 24.—For the following works of new buildings for farm institute, Sparsholt, near Winchester, for the Hampshire County Council: (1) Erection of principal's house, fencing to garden, &c.; (2) alterations to existing lodge (cottage No. 1); (3) erection of cottages Nos. 2 and 3 (block No. 1), including outbuildings; (4) erection of cottages Nos. 4 and 5 (block No. 2), including outbuildings; (5) erection of greenhouse, frames, and potting shed; (6) extension of water supply and cattle troughs; (7) fencing to fields, gardens, and cottages. Deposit £2 2s. Mr. A. L. Roberts, architect to the Education Committee, The Castle, Winchester.

Thurnscoe.—April 20.—For erection of stables, outbuildings, and temporary offices in Lidgett Lane, for the Urban District Council. Deposit 10s. 6d. Mr. T. Ball, M.Inst.Munc.E., surveyor, Council Offices, Thurnscoe.

Titchfield.—April 14.—For erection of a miniature rifle range, &c., at Titchfield, Hants, for the occupation of the H Company, 6th (D.C.O.) Battalion of the Hampshire Regiment, for the County of Southampton Territorial Force Association. Deposit £1. Mr. W. Cobbett, C.E., Fareham, Hants.

Wales.—For erection of the following works—viz., eight houses at Trimsaran, for the Trimsaran Colliery Company, Ltd.; farm-house at Dythel, Trimsaran; three villas and two houses on Clayton Road, Pontardulais; bungalow at Cwmmawr Bridge, near Tumble. Messrs. J. Davies & Son, M.S.A., A.M.I.C.E., architects and surveyors, Cowell House, Llanelly.

Wales.—April 16.—For erection of fourteen houses at Mountain Hare, Twynyrodyn, Merthyr Tydfil, for the Gilfach Cynon Building Club. Mr. T. E. Rees, M.S.A., architect, Bank Chambers, Merthyr Tydfil.

Wales.—April 16.—For erection of a police station at Caerphilly, for the Standing Joint Committee of the Glamorgan Quarter Sessions and County Council. The Caerphilly Police Court, and the County Hall, Cardiff.

Wales.—April 16.—For erection of fifteen or more houses, together with roads, surplus water drains, &c., at Energlyn, Caerphilly, for the Energlyn Building Club No. 2. Mr. Gomer L. Rees, architect and surveyor, Bedwas.

Wales.—April 16.—For alterations and additions to the police station at Pontycymmer, for the Standing Joint Committee of the Glamorgan Quarter Sessions and County Council. The Pontycymmer Police Station, and the County Hall, Cardiff.

Wales.—April 18.—For provision of terrazzo flooring at Cardiff Workhouse. Mr. A. J. Harris, clerk, Union Offices, Queen's Chambers, Cardiff.

Wales.—April 18.—For extension of nurses' room at the hospital, Headquarters Homes, Ely, near Cardiff. Mr. A. J. Harris, clerk, Union Offices, Queen's Chambers, Cardiff.

Wallasey.—April 21.—For erection of proposed town hall, for the Town Council. Messrs. Briggs, Wolstenholme & Thornely, architects, Royal Liver Buildings, Liverpool. Send £2 2s. deposit to Mr. H. W. Cook, town clerk, Town Hall, Wallasey. (See advertisement.)

Wingham.—April 20.—For erection of a pumping engine house at Wingham, for the Margate Corporation. Mr. E. A. Borg, borough engineer, 13 Grosvenor Place, Margate.

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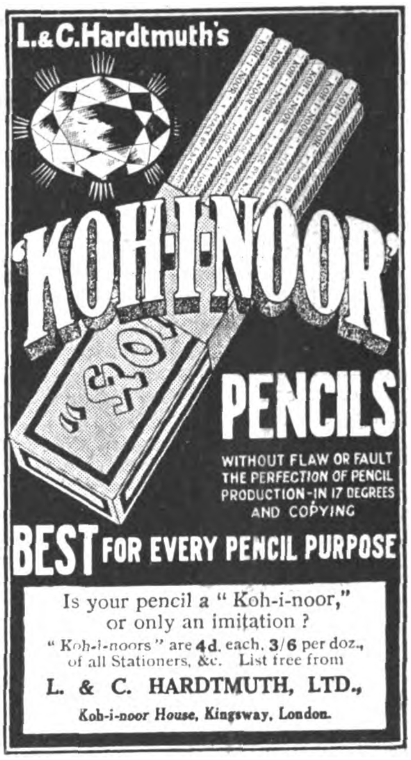

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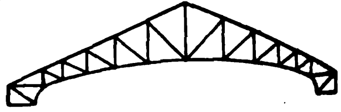

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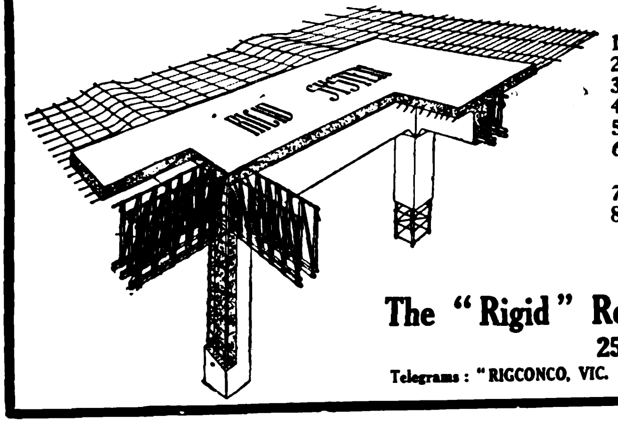

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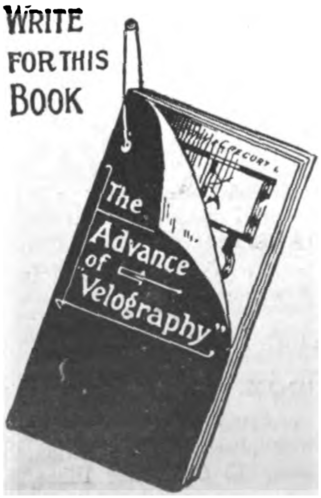

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TENDERS.

BEDFORD.

For erection of motor garage at the Swan Hotel. Mr. Herbert Haines, architect, Bedford.

Warton & Dunstall	£1,329	0	0
Corby & Son	1,309	0	0
Foster	1,309	0	0
Dickins	1,289	10	0
Negus	1,288	0	0
Dawes & Bowler	1,275	0	0
Casheard	1,210	0	0
W. Laughton (*accepted*)	1,210	0	0

CAVERSHAM.

For alterations to the Crown Hotel. Mr. J. Haslam, M.S.A., architect and surveyor, Reading.

Collier & Catley	£1,839	0	0
J. H. Margetts & Son	1,798	0	0
Newberry	1,650	0	0
G. S. Lewis & Bro. (*accepted*)	1,548	0	0

CROYDON.

For the erection of a house for the sewage works manager, for the Town Council.

Surrey Downs Building Co. (*accepted*) . £571 0 0

For the erection of a new sub-station to replace existing one at Addiscombe Grove, and enlarging existing sub-station in Drummond Road.

C. A. Sedgwick, Thornton Heath (*accepted*) £294 0 0

GODALMING.

For the erection of the Church Room.

D. Fry, Godalming (*accepted*) . . £1,500 0 0

KNARESBOROUGH.

For the various works required in the erection of two cottage homes for children, Stockwell Lane, for the Board of Guardians. Mr. J. Houfe, architect, Harrogate.

Accepted tenders.

Hymas, builder, &c.	£651	0	0
Kitching Bros., Knaresborough, joiners	349	18	6
Scholes, plumber, &c.	208	0	0
Fortune, plasterer	81	10	0
Raynor, slater	70	0	0
Topham, painter	28	18	6

LONDON.

For installing heating apparatus in the Lower Chapman Street school, St. George-in-the-East, for the L.C.C.

Cannon & Hefford	£1,172	0	0
G. & E. Bradley	1,137	0	0
Christie	1,100	0	0
J. & F. May	1,097	0	0
Palowkar & Sons	1,083	0	0
Yetton & Brockett, 32a Liverpool Street (*recommended*)	947	0	0
Architect's estimate	997	0	0

For installing heating apparatus in connection with the building of the Ranelagh Road school, St. George, Hanover Square, for the L.C.C.

Palowkar & Sons	£1,148	0	0
Wilson & Smith	934	5	0
Knight & Sons	895	0	0
Architect's estimate	850	0	0
Yetton & Brockett	843	0	0
Deane & Beal	832	10	0
J. & F. May	819	10	0
Freer	817	10	0
Cannon & Sons	809	0	0
Cannon & Hefford, Stanbury Road, Peckham (*recommended*)	797	0	0

For improving the heating of the Gill Street school, Limehouse, for the L.C.C.

Brightside Foundry and Engineering Co.	£953	0	0
J. & C. Christie	933	0	0
J. & F. May	815	10	0
G. & E. Bradley	812	0	0
Cannon & Sons	740	0	0
Yetton & Brockett	738	0	0
Cormack & Sons	735	0	0
Palowkar & Sons, 90-91 Queen Street (*recommended*)	672	0	0
Architect's estimate	745	0	0

LONDON—*continued.*

For installing heating apparatus in connection with the remodelling of the Capland Street junior school, Marylebone, W., and the enlargement of the Gipsy Road school, Norwood, for the L.C.C.

Capland Street (Junior).

Richardson & Co.	£618	15	0
Harlow & Son	591	0	0
The Brightside Foundry and Engineering Co.	585	0	0
Cannon & Hefford	580	0	0
R. H. & J. Pearson	576	0	0
Davis	570	0	0
Yetton & Brockett	537	4	0
Palowkar & Sons	533	0	0
G. & E. Bradley, 77 Lever Street, E.C. (*recommended*)	509	10	0

Gipsy Road.

J. & F. May	£1,074	0	0
Deane & Beal	1,062	0	0
Brightside Foundry and Engineering Co.	1,035	0	0
Cannon & Hefford	1,029	0	0
Freer	1,026	0	0
Wilson & Smith	1,008	10	0
Yetton & Brockett	982	0	0
W. G. Cannon & Sons, Ltd., 107 London Road, Southwark (*recommended*)	940	0	0

The architect's estimates, comparable with the tenders, are £545 and £999 respectively.

For the enlargement of the Kilmorie Road School, Lewisham.

Downs	£11,382	0	0
Akers & Co.	10,993	0	0
Triggs & Co.	10,841	0	0
F. & T. Thorne	10,644	0	0
Wallis & Sons	10,560	0	0
Chas. Wall, Ltd.	10,518	0	0
Godson & Sons	10,466	0	0
Leng	10,270	0	0
Smith & Sons	10,209	0	0
Smith & Son	10,165	0	0
Moss & Sons	10,020	0	0
F. & H. F. Higgs	9,993	0	0
J. & C. Bowyer	9,889	0	0
H. L. Holloway, Union Works, Deptford (*recommended*)	9,876	0	0
Architect's estimate	9,786	0	0

For installing heating apparatus in connection with the erection of the Vallance Road schools, Whitechapel.

Comyn, Ching & Co.	£1,920	0	0
Christie	1,830	0	0
Wilson & Smith	1,780	0	0
The Brightside Foundry & Engineering Co.	1,725	0	0
Deane & Beal	1,607	10	0
Cash & Co.	1,568	0	0
Cannon & Hefford	1,563	0	0
Cormack & Sons	1,553	0	0
Cannon & Sons	1,550	0	0
R. H. & J. Pearson	1,549	0	0
Arding & Dyne	1,529	0	0
Palowkar & Sons	1,493	0	0
G. & E. Bradley, 77 Lever Street (*recommended*)	1,469	0	0
Architect's estimate	1,600	0	0

SCOTLAND.

For the erection of alterations and extensions at the gasworks, Broad Street, Fraserburgh.

Chimney and Retorts.

R. & G. Hyslop, Paisley (*accepted*).

Ironwork.

H. Balfour & Co., Ltd., Leven (*accepted*).

SEVENOAKS.

For the erection of a pavilion in the recreation ground in Hollybush Lane. Mr. S. Towlson, A.M.I.C.E., surveyor, Sevenoaks.

W. Hodges, Sevenoaks (*accepted*) . . £574 0 0

STONEBROOM.

For alterations and extensions to the Council School, for the Shirland and Higham school managers.

S. Evans, Alfreton (*accepted*) . . £1,793 7 0

WALLINGTON.

For erection of a police station. Mr. J. Dixon Butler, F.R.I.B.A., New Scotland Yard, S.W.

Burnard	£5,810	0	0
Garlick & Co.	5,721	0	0
Stuart & Sons	5,689	0	0
Higgs & Hill	5,649	0	0
Kent	5,583	0	0
Smith & Sons	5,555	0	0
Dorey & Co.	5,500	0	0
Taylor & Co.	5,490	0	0
Adamson & Sons	5,445	0	0
Potterton	5,415	0	0
Dickens	5,340	0	0
Barker & Co.	5,138	0	0

TECHNICAL EDUCATION AT THE GARDEN SUBURBS.

The development of building estates by societies federated with the central body of Co-partnership Tenants enables technical education to be encouraged along systematic lines. Every winter the Co-partnership Tenants' Housing Council pays the fees of workmen engaged in erecting houses on its garden suburbs who attend classes at public institutions. Mess-room classes are also organised in practical plumbing.

On the Hampstead Garden Suburb a step further has just been taken, and Mr. Len. Godfrey has been appointed instructor of workmen's classes held on the jobs where the men are actually at work. A specimen lesson has just been given to about fifty of the workmen, who assembled under the chairmanship of Mr. G. L. Sutcliffe, F.R.I.B.A., to learn the value of the steel square in connection with roofing, and to see demonstrations of geometrical problems by means of specially prepared models.

At the conclusion of the lesson Mr. Henry Vivian, the chairman of the Hampstead Tenants' Societies, pointed out how scientific precision would have to take the place of the old rule of thumb method of building.

VARIETIES.

Mr. William Walmsley, of Sandholme, Cardigan Road, Headingley, Leeds, builder, who died on January 13, left £169,559.

Mr. Henry Hudson Church, of Bostall Heath, Plumstead, architect, who died on January 24 last, aged eighty-six, left estate of the gross value of £87,463, of which £72.331 is net personalty.

The North-Eastern Railway Company have purchased an estate close to their locomotive works at Darlington for the immediate erection of a smithy, forge, and machine shop for the purpose of constructing waggon ironwork.

Mr. J. H. Trollope, of Beddington, Surrey, formerly of Messrs. Geo. Trollope & Sons, left estate of the gross value of £142,001, of which £140,673 is net personalty.

Mr. J. Bennett (37) has been selected by the Exeter City Council out of 209 applicants for the post of architect in the Exeter city surveyor's department. Mr. Bennett leaves a similar official position at Bolton.

Mr. D. B. Bostel, of Messrs. Bostel Bros., Ltd., builders and sanitary experts, of 18 and 19 Duke Street, Brighton, has been elected as an Associate of the Institute of Sanitary Engineers.

At a meeting of the Swansea-Merthyr Joint Asylum Committee at Merthyr on Friday, the contract for the foundation work was conditionally given to Messrs Parkinson & Hodgens, Swansea. The amount of the contract is under £20,000. It was decided to use stone in the foundation work instead of brick.

The Board of Agriculture for Scotland invite tenders from members of the Faculty of Surveyors for Scotland, stating at what rate per cent., on the lowest estimate for works received, they would be prepared to undertake the measurement of plans of houses and steadings for small holdings in Scotland. The value of individual buildings will range from £250 to £750. The schedule of quantities would be printed by the Board.

The Council of the Society of Engineers have passed the following resolution: "That the Council of the Society of Engineers (incorporated) are of opinion that the abolition of the external degrees in engineering, proposed by the Royal Commission on University Education in London, would be a grave injustice to many engineering students, and they are strongly opposed to the recommendation being carried into effect."

Mr. Frank Shorland, who has acted as general manager and secretary to Messrs. Clement Talbot, Ltd., since 1908, has now been appointed managing director of that highly successful automobile company. Within two years of Mr. Shorland getting into Talbot harness, the size of the works was extended by more than half. But even this increase proved insufficient, for new works are now approaching completion, which will make the works double their present size. £60,000 worth of new machinery has been installed during the last five years, and the general staff and workmen have been increased 100 per cent. New grounds were acquired in 1908, covering 18½ acres, 6½ acres of which have been taken up by the new buildings, while the remainder is reserved for developments. At present they are set apart for staff recreation purposes.

Mr. E. Campbell MacCormac, formerly chief assistant in the sewage department of Messrs. J. Stone & Co., Ltd., engineers, Deptford, S.E., has been appointed chief of the sewage department of Messrs. Daniel Adamson & Co., engineers and boilermakers, Dukinfield and Westminster. This firm's patent pneumatic sewage ejectors, air compressors, sewage distributors, &c., are now in extensive operation both at home and abroad. For many years Mr. MacCormac has been in close touch with the scientific design and lay-out of sewerage, sewage-lifting, and sewage-disposal appliances, many of his specialities having been adopted by the British Admiralty, the Crown Agents for the Colonies, and by numerous consulting civil engineers and municipalities.

Ten American architects, it is stated, have been invited by the George Washington Memorial Association to enter a preliminary competition for plans for the proposed George Washington Memorial Building, for which Congress has given a site at Sixth and B Streets, N. W., Washington, D. C. The architects invited are Messrs. Parker, Thomas & Rice, Baltimore; Peabody & Stearns, Boston; McKim, Mead & White, New York City; Eames & Young, St. Louis; Hornblower & Marshall, Washington; John Galen Howard, San Francisco; John Russell Pope, New York City; Paul P. Cret, Philadelphia; Howard Van Doren Shaw, Chicago; and Warren & Wetmore, New York City. The programme states that the successful competitor is to receive $1,500, and each unsuccessful competitor is to be paid $500. The total of $265,000 has now been raised for the building, and further material subscriptions are expected in the near future.

TRADE NOTES.

Boyle's latest patent "Air-Pump" Ventilators have been applied to the School of Art, Nottingham.

Messrs. J. E. & S. Spenser, makers of wrought-iron and steel tubes, have removed their offices to 16 Dowgate Hill, London, E.C., and their warehouses to No. 33.

The London and Midland Insurance Co., Ltd., inform us that Mr. Robert Bartle Baggaley, of the firm of Baggaley & West, chartered accountants, has joined the Nottingham Local Board, and Mr. Alfred Appleby, J.P., of the firm of Appleby & Lisle, his Majesty's coroner for the City and County of Newcastle-upon-Tyne, has joined the Newcastle Local Board. The annual report of the Company for the year 1913 shows a highly satisfactory state of affairs. The total income from all sources was £244,144. The greater portion of this comes from the fire premiums, which show an increase of £25,576, or 15.1 per cent. Satisfactory progress has been made with the Company's home business, and six new branches have been opened in important cities.

We have recently received a blotter from Messrs. Kerner-Greenwood & Co. containing useful information regarding "Pudlo," the powder which makes cement waterproof. Messrs. Kerner-Greenwood & Co. will be pleased to send one to any architect who has not received a copy until the issue is exhausted.

Sevenoaks has followed the lead of several other Kent fire brigades in deciding on the acquisition of a motor fire-engine. Subject to the confirmation of the Local Government Board, an order has been placed for a Merryweather motor fire-engine of the "Hatfield" pattern. This design is fitted with a reciprocating pump, which, after tests had been witnessed with various makers' machines, was preferred to pumps of the turbine type. Three hundred gallons a minute is to be the capacity of the pump, and arrangements will be made for carrying the existing fire escape.

THE
Architect and Contract Reporter.
FRIDAY, APRIL 17, 1914.

EDITORIAL NOTICES.

The Editor will always be pleased to examine drawings or articles with a view to publication, but cannot be responsible for the safety of those sent, though every reasonable care will be taken. Contributors desiring payment should clearly state their wishes. No payment will be made until after publication, and a commission to prepare articles or drawings does not necessarily imply acceptance or approval.

No communication can be inserted unless authenticated by the name and address of the writer—not in every case for publication, but as a guarantee of good faith.

We have upon our staff a very eminent Barrister, who will be glad to answer in the columns of this paper any legal question that may be of interest to our readers. All letters must be addressed "Legal Adviser," Office of "The Architect," Imperial Buildings, Ludgate Circus, London, E.C.

The Editor will be glad to receive from Architects in London and the Provinces results of Competitions and Tenders and other particulars of Works in progress in which they may be interested.

TENDERS, ETC.

⁂ *As great disappointment is frequently expressed at the nonappearance of Contracts Open, Tenders, &c., it is particularly requested that information of this description be forwarded to the Office, Imperial Buildings, Ludgate Circus, London, E.C., not later than 2 P.M. on Thursdays.*

COMPETITIONS OPEN.

CONWAY.—The Board of Guardians invite schemes, with plans, for the laying out of a plot of land near Conway for the provision of one relieving home and four cottages homes, and for laying out of the remainder of the plot for future cottage homes, recreation grounds, &c. Premiums of £10 and £5. Commission will be paid for work carried out during the first five years from date of acceptance of a scheme. Send applications to Mr. J. W. Post, clerk to the Guardians, Union Offices, Conway.

CHESTER.—The Corporation invite designs for the erection of houses for the working classes. Premiums of £50, £25, and £10 are offered. Mr. Patrick Abercrombie, M.A., will act as assessor. Deposit £1 1s. Mr. J. H. Dickson, town clerk, Town Hall, Chester.

EAST PRESTON.—The Southstrand Sports Club (newly formed) invite plans for a clubhouse to be erected on the Southstrand Estate, East Preston, near Worthing. The successful competitor will be instructed to carry out the work, and will receive, in addition to the usual fees, a bonus on completion of the building. A plan of the site and full particulars can be obtained of Mr. William Hollis, surveyor, Southstrand Estate Offices, Church End, Finchley, London.

GLASGOW.—May 1.—The Corporation are prepared to receive from sculptors competitive models and relative offers for four groups of symbolical sculpture to be placed on the abutments of the new bridge at Radnor Street, Kelvingrove Park, Glasgow. Copies of the conditions of the competition may be obtained on application to Mr. J. Lindsay, town clerk, City Chambers, Glasgow.

GRIMSBY.—June 2.—The Building Committee of the proposed Constitutional Club invite designs for premises to be erected at the corner of Victoria Street and Upper Spring Street, at an estimated cost of £3,000. Premiums of £40, £20, and £10 are offered. Deposit of £2 2s. will be sent back on receipt of designs or on return of the particulars within 10 days. Mr. H. W. V. Sheckell, secretary, Constitutional Club, Victoria Street, Grimsby.

HENDON.—May 11.—The Education Committee will be prepared to receive competitive designs for a school at Hale Grove Gardens, Mill Hill. Conditions of competition and plan of site may be obtained from Mr. James Anderson, secretary to the committee, Council Offices, Hendon, N.W.

HYTHE.—May 30.—The Town Council invite designs for a concert hall and public shelter, for which premiums of fifty, twenty-five, and ten guineas will be awarded. Deposit £1 1s. (returnable). Condition, site plan, &c., may be obtained on application to Mr. Bernard C. Drake, town clerk, Hythe, Kent. (See advertisement.)

LONDON.—May 4.—The Bridge House Estates Committee of the Corporation of the City of London invite designs from British architects for the architectural treatment of the new St. Paul's Bridge. The conditions of the competition and instructions may be obtained upon payment of a deposit of £3 3s., which will be returned on receipt of a design in accordance with the conditions. A premium of £300 is offered for the design which may be placed first, and further premiums of £200 and £100 respectively. The committee will be advised by Sir William Emerson, P.P.R.I.B.A., as assessor, whose decision will govern the award of the premiums and be final and binding in all stages of the competition. The Town Clerk, Guildhall, London, E.C.

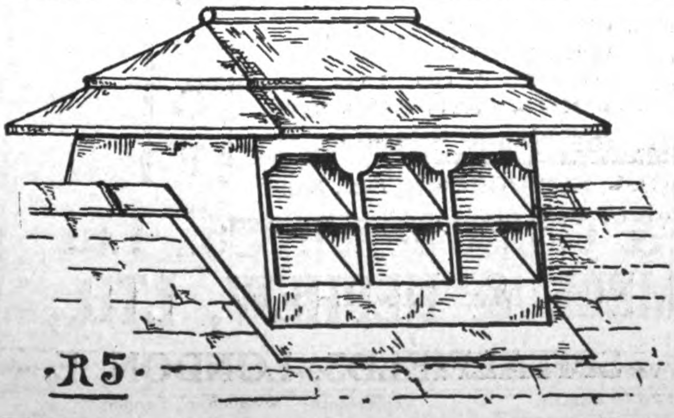
MANCHESTER.—May 23.—The Sanitary Committee of the Corporation invite competitive plans, specifications and estimates for semi-detached cottages on the Blackley estate. Premiums of £50 and £25 will be paid for the first and second best plans, &c., as selected. Deposit £1 1s. The Sanitary Department, Civic Buildings, Mount Street, Manchester. (See advertisement.)

MOLD.—The Urban District Council invite architects to submit plans, &c., for a fire station and caretaker's house, to be erected at Earl Road. Further particulars may be obtained from Mr. D. Thomas, surveyor, Town Hall, Mold.

CONTRACTS OPEN.

ARDWICK.—April 25.—For works required in the erection of Nansen Street Municipal School, Ardwick, Manchester, each section to be let separately as follows: (1) Excavator, drainer, concreter, and bricklayer; (2) asphalter; (3) stone mason; (4) slater; (5) carpenter, joiner, and iron and steel fixing; (6) cast ironwork (no fixing); (7) wrought iron and steel work (no fixing); (8) plumber and glazier; (9) plasterer and painter. Deposit £1 1s. The Education Offices, Deansgate, Manchester.

ASHFORD.—April 30.—For erection of a building, comprising hot-water baths, attendant's room, &c., at Beaver Road, for the Urban District Council. Mr. W. Terrill, surveyor, 5 North Street, Ashford, Kent.



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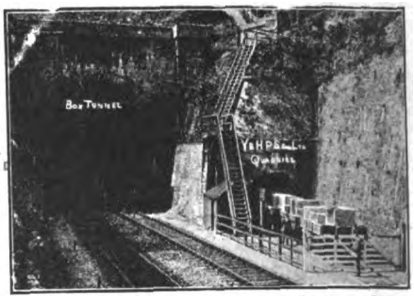

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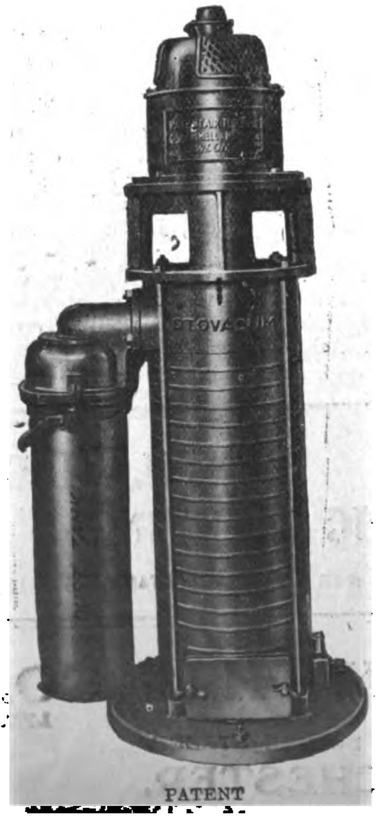

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Ashford (Middlesex).—April 23.—For works of improvement to the bathing accommodation at their district school at Ashford, consisting of builder's contract—extension of swimming baths; engineering contract—removal of calorifiers, pipe work, and sprays, for the Managers of the West London School District. Mr. H. Dighton Pearson, F.R.I.B.A., 76 Newman Street, W.

Barrow-in-Furness.—April 24.—For erection of a warehouse, for the Barrow Co-operative Society, Ltd., adjacent to their bakery in Buccleuch Street. Mr. H. T. Fowler, A.R.I.B.A., 6 Cornwallis Street, Barrow-in-Furness.

Beverley.—April 28.—For the erection of clerk and steward's house, six cottages, farm bailiff's house, and dairy at the East Riding Asylum, for the Visiting Committee. Deposit £1 1*s.* Mr. H. T. Tate, agent, County Hall, Beverley.

Bingley.—For erection of pump house, lime shed, offices, &c., at the Dowley Gap sewage disposal works, for the Bingley Urban District Council. Mr. H. Bottomley, engineer and surveyor, Town Hall, Bingley.

Blisworth.—April 22.—For erection of four workmen's dwellings at Blisworth, for the Stratford-upon-Avon and Midland Junction Railway Co. Deposit 10*s.* 6*d.* Messrs. Knight & Hebery, architects, 5 Rother Street, Stratford-on-Avon.

Blackpool.—May 2.—For proposed additions to Waterloo Road school, for the Education Committee. Deposit £1 1*s.* Mr. J. S. Brodie, borough engineer, Municipal Buildings, Market Street, Blackpool.

Bradford.—April 25.—For alterations and additions at Wibsey branch library, for the Corporation. The City Architect, Town Hall, Bradford.

Burton-on-Trent.—April 29.—For the extension of their refuse destructor at Bond End, for the Town Council. Mr. G. T. Lynam, borough engineer and surveyor, Burton-on-Trent.

Bury.—April 22.—For the construction of concrete foundations to generator at Chamber Hall, for the Corporation. The Borough Engineer, Bank Street, Bury.

Cadishead.—May 1.—For erection of an elementary school for 300 children at Cadishead, near Manchester, for the Lancashire Education Committee. Deposit £2. Mr. H. Littler, county architect, 16 Ribblesdale Place, Preston.

Carlisle.—For the whole or any of the works required in the erection and completion of an infants' school and caretaker's house at Newtown, Carlisle, for the Carlisle Education Committee. Messrs. Oliver & Dodgshun, FF.R.I.B.A., architects, Lowther Street, Carlisle.

Cheadle.—April 23.—For erection of two cottage homes for the Guardians. Deposit £2 2*s.* Mr. T. Bibby, P.A.S.I., architect, Cheadle.

Clitheroe.—For erection and completion of branch premises, Waddington Road, for the Committee of the Clitheroe Equitable Co-operative Society, Ltd. Deposit £1 1*s.* Mr. F. E. L. Harris, architect, Co-operative Wholesale Society, Ltd., 1 Balloon Street, Manchester.

Devonport.—For reconstruction of company's offices at the depôt, Milehouse, for the Devonport and District Tramways Co. Deposit £1 1*s.* Messrs. Prigg & Lindon, architects and surveyors, South Devon Chambers, Millbay Station, Plymouth.

Dodworth.—April 25.—For erection of Council offices in High Street. Mr. E. W. Dyson, architect and surveyor, 10 Regent Street, Barnsley.

Eccles.—April 25.—For the erection of an office building in Irwell Place, for the Finance Committee. Deposit £2. The Borough Surveyor's Office, Town Hall, Eccles.

Ferryhill.—April 25.—For alterations to the White Horse Inn, Ferryhill, Durham. Mr. T. H. Murray, Licentiate R.I.B.A., architect, Consett.

Griffithstown.—For erection of an electric theatre, for the Griffithstown Palace Co., Ltd. Mr. G. Kenshole, M.S.A., architect, Bargoed.

Guildford.—May 11.—For erection of twenty cottages in the Old Farm Road, for the Town Council. Deposit £2 2*s.* Mr. C. G. Mason, A.M.I.C.E., borough engineer, Guildford.

Halifax.—For various works required in alteration to works at Highroad Well. Messrs. Jackson & Fox, architects, 7 Rawson Street, Halifax.

Hetton-le-Hole.—April 27.—For erection of a urinal at Easington Lane, for the Hetton Urban District Council. Mr. Harding, surveyor, Council Offices, Hetton-le-Hole.

Hull.—April 29.—For the steel roofwork required in the workshops, Liverpool Street, for the Corporation. The work consists of sixty-three trusses of spans varying from 15 ft. to 55 ft., lattice girders, stanchions, and steel framings for screen walls, together with other steelwork, amounting altogether to about 166 tons. Deposit £1. Mr. A. E. White, M.I.C.E., city engineer, Guildhall, Hull.

Ireland.—April 20.—For building an addition to the Carmelite Priory, Aungier Street, Dublin, for the Very Rev. J. L. McCabe, O.C.C. Mr. C. B. Powell, architect, 107 Rathmines.

Ireland.—April 23.—For supply, delivery, and erection on the site of the proposed power station at Blackrock, Co. Dublin, for the Urban District Council—viz.: (*a*) buildings and engines foundations; (*b*) overhead travelling crane; (*c*) two generating sets, each consisting of Diesel oil engines and dynamos, complete with cooling tower, fuel tanks, and all accessories; (*d*) booster; (*e*) battery; (*f*) switchboard. Deposit £1 1*s.* Mr. J. P. Tierney, consulting engineer, 15 College Green, Dublin.

Ireland.—April 24.—For erection of buildings at the rear of the technical schools, 18 Rutland Square, Dublin, for the Technical Education Committee. (The City Architect, Municipal Buildings, Cork Hill, Dublin.) Send £2 deposit to the City Treasurer, Municipal Buildings, Cork Hill, Dublin.

Ireland.—April 25.—For erection of a dispensary and dispensary residence (combined) in the townland of Demesne, Castlerea, for the Guardians. Mr. P. A Fianagan, clerk, Workhouse, Castlerea.

Ireland.—April 27.—For erection of fifty-three artisans' dwellings, for the Carlow Urban District Council, as follows: (1) nine one-storeyed houses on Pollerton Road; (2) thirteen two-storeyed houses on Staplestown Road; (3) thirteen two-storeyed houses on Granby Row; (4) seven two-storeyed houses on Granby Row; (5) eleven one-storeyed houses on "The Numbers," Graigue. Deposit £2 2*s.* Mr. P. P. Carbery, C.E., town surveyor, Carlow.

Ireland.—May 8.—For the erection of a new National School at Dunbell, Co. Kilkenny, and a new National School at Castlewarren, Co. Kilkenny. Rev. J. Cahill, P.P., Clifden Villa, Kilkenny.

Langton Matravers.—April 22.—For erection of six cottages in the parish of Langton Matravers, Dorset, for the Wareham and Purbeck Rural District Council. Deposit 10*s.* 6*d.* Mr. W. Watts Fookes, North Street, Wareham.

Leeds.—April 20.—For plumber and glazier's work required in erection of a "Children's Block" (accommodation for 150 beds), at the Township Infirmary, Beckett Street. Send applications on or before April 20 to Messrs. T. Winn & Sons, architects, 84 Albion Street, Leeds.

Leicester.—April 22.—For the extension of the "Lero" generating station and for other works in connection therewith, for the Corporation. Deposit £2. The Borough Surveyor's Office, Leicester.

London.—April 22.—For construction of trenches and other incidental works at the Eastern Fever Hospital, Homerton Grove, Homerton, N.E., for the Metropolitan Asylums Board. Deposit £1. Mr. W. T. Hatch, M.I.C.E., M.I.M.E., engineer-in-chief, the Office of the Board, Embankment, E.C.

London.—April 23.—For the demolition of certain houses and alterations to others in Abingdon Street, S.W., for the Commissioners of His Majesty's Works and Public Buildings. Deposit £1 1*s.* H.M. Office of Works, &c., Storey's Gate, S.W.

London.—April 24.—The Commissioners of his Majesty's Works, &c., invite constructional schemes and tenders based thereon for the construction in reinforced concrete of a substation at Mount Pleasant. Any system or systems of construction may be adopted for the whole or part of the work, and full details must be furnished immediately for examination if necessary. Deposit £2 2*s.* Mr. E. Cropper, H.M. Office of Works, Carlisle Place, Westminster, S.W.

London.—April 29.—For certain alterations and sanitary work at the Buckingham Palace Road Public Baths, for the Westminster City Council. The City Engineer, Westminster City Hall, Charing Cross Road, W.C.

Mexborough.—April 27.—For erection of public baths, for the Urban District Council. Deposit £2 2*s.* Mr. H. Burgess, architect, Queen Anne's Chambers, Westminster, London, or Mr. H. R. Collins, surveyor, Regent Street, Barnsley.

Nantyglo.—April 21.—For extensive alterations and additions to the Blaina and District Cottage Hospital, near Nantyglo. Deposit £3 3*s.* Mr. E. A. Johnson, F.R.I.B.A., architect, Abergavenny.

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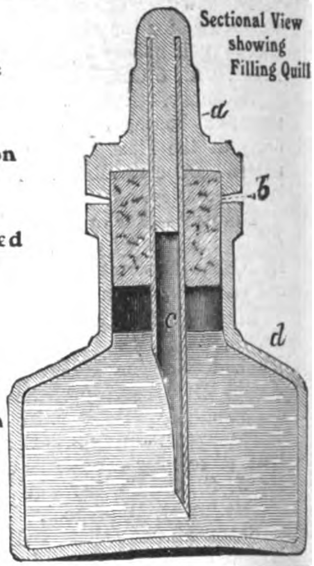

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Nether Green.—For carrying out the whole or part of the work required in erecting a detached dwelling-house in Fulwood Road, Nether Green. Mr. P. Blair Frost, architect and surveyor, Independent Buildings, Fargate.

North Walsham.—April 23.—For alterations to two houses in Norwich Road, North Walsham, to adapt same for use as a children's home, for the Guardians of Smallburgh Union. Mr. F. Davies, clerk, North Walsham.

Oulton-with-Woodlesford.—April 24.—The West Riding Education Committee invite whole or separate tenders for the following works in enlargement of Council School—viz.: builder, joiner, slater, plumber, plasterer, and painter. The Education Architect, County Hall, Wakefield. Send £1 deposit by separate letter to the West Riding Treasurer, County Hall, Wakefield.

Platt Bridge.—April 25.—For erection of an infants' school at St. Nathaniel's Church of England schools, Platt Bridge, Lancs. Deposit £1 1*s.* Messrs. Biram & Fletcher, George Street, St. Helens.

Pontefract.—For erection of semi-detached houses, Carleton Park. Messrs. Garside & Pennington, architects and surveyors, Pontefract and Castleford.

Ripponden.—April 23.—For the several works required in connection with the pulling down of old mill and building a five-storey fireproof mill at Ripponden, for the Stones Mill Co., Ltd. Forward names by April 23 to Messrs. C. Williams & Sons, architects, Post Office Buildings, Commercial Street, Halifax.

Rochester.—May 5.—For extension of buildings at the Sir Joseph Williamson's Mathematical School at Rochester, for the Governors. Send applications and £2 2*s.* deposit by April 18. Mr. G. E. Bond, architect, Victoria Buildings, Rochester.

Rotherham.—For erection and completion of extensions to the electricity works in Rawmarsh Road, for the Corporation. Mr. E. B. Martin, M.I.C.E., borough engineer, Town Hall, Rotherham.

St. Agnes.—April 23.—For extensive additions and alterations at Trevaunance Cove, St. Agnes, Cornwall. Mr. A. Ernest Harris, architect, &c., Truro.

St. Dominic.—April 27.—For erection of a farm house at Trehill, St. Dominic, Cornwall. Messrs. D. Ward & Son, architects, 7 Courtenay Street, Plymouth.

St. Helens.—April 21.—For erection of the Allanson Street Council School, for the Education Committee. Deposit £1 1*s.* Messrs. Biram & Fletcher, architects, George Street, St. Helens, Lancs.

Scotland.—April 22.—For the following works required in connection with the extension of the municipal buildings, Glasgow—viz.: (1) digger, mason, and brick work; (2) steel beams, &c.; (3) structural steel work; and (4) carpenter work, for the Corporation. Deposit £20 for the digger, mason, and brick works specification and schedule, and £10 for the specification and schedule relative to each of the other works. Messrs. Watson & Salmond, architects, 242 West George Street, Glasgow.

Scotland.—April 22.—For taking down old dwelling house, removing part of boundary and retaining wall at Piershill Barracks, Edinburgh, erecting new rubble walls, laying cement pavements, &c., for the Magistrates and Council. Mr. A. H. Campbell, M.I.C.E., burgh engineer, Parliament Square, Edinburgh.

Scotland.—April 24.—For the following works required in connection with the proposed extension of the Meat Market at corner of Hill Street and Armour Street—viz.: (1) Carpenter and joiner works, and (2) plumber work, for the Glasgow Corporation. The Office of Public Works, 64 Cochrane Street, Glasgow.

Scotland.—May 9.—For erection of a concrete beacon on the Whitestone Bank, which lies off the Point of Ayre, Isle of Man, for the Commissioners of Northern Lighthouses. The Whitestone Bank is submerged at all states of the tide. Deposit £1 1*s.* Mr. D. A. Stevenson, M.I.C.E., engineer to the Commissioners, 84 George Street, Edinburgh.

Sheffield.—For the whole or part of the work required in erecting a detached dwelling-house in Fulwood Road, Nether Green. Mr. P. Blair Frost, architect and surveyor, Independent Buildings, Fargate.

Sparsholt.—April 24.—For the following works of new buildings for farm institute, Sparsholt, near Winchester, for the Hampshire County Council: (1) Erection of principal's house, fencing to garden, &c.; (2) alterations to existing lodge (cottage No. 1); (3) erection of cottages Nos. 2 and 3 (block No. 1), including outbuildings; (4) erection of cottages Nos. 4 and 5 (block No. 2), including outbuildings; (5) erection of greenhouse, frames, and potting shed; (6) extension of water supply and cattle troughs; (7) fencing to fields, gardens, and cottages. Deposit £2 2*s.* Mr. A. L. Roberts, architect to the Education Committee, The Castle, Winchester.

Stockport.—May 5.—For the general contract work in bakery and warehouse buildings, Adswood sidings, for the Stockport Industrial and Equitable Co-operative Society, Ltd. Deposit £5. Messrs. Wrathmell & Blackshaw, Licentiates R.I.B.A., architects, St. Peter's Square, Stockport.

Stroud.—April 25.—For erection of concrete retaining and dwarf walls, with wrought-iron railings and gates, and works in connection therewith, to form boundary to Horns Road for extension of cemetery, for the Stroud Joint Burial Committee. Deposit £1 1*s.* Mr. G. P. Milnes, architect, 7 Rowcroft, Stroud.

Uxbridge.—For erection of public slipper baths at the depôt, Waterloo Road, for the Urban District Council. Mr. W. L. Eves, F.R.I.B.A., surveyor, 54 High Street, Uxbridge.

Wales.—For a brick and puddle gasholder tank, 180 ft. diameter by 34 ft. deep, to be constructed at Grangetown Gasworks for the Cardiff Gaslight and Coke Co. Deposit £2 2*s.* Mr. G. Clarry, general manager and secretary, Gas Offices, Cardiff.

Wales.—For erection of twenty cottages and for making the necessary roadways for same at Blaengarw, for the International Coal Co., Ltd. Mr. W. J. Morgan, manager, International Colliery Offices, Blaengarw.

Wales.—April 21.—For new seating, vestry, and caretaker's house at Hirwaen Wesleyan Chapel, near Ruthin. Rev. W. G. Williams, Bathafarn House, Ruthin.

Wales.—April 21.—For erection of the National Eisteddfod pavilion at Bangor. The Borough Surveyor's Office, Bangor.

Wales.—April 22.—For the following works, for the Glamorgan County Council: (1) Alterations and additions to the Council school at Dunvant, near Swansea; (2) erection of temporary building and alteration to existing premises of Skewen Lower Council school; (3) erection of a manual instruction centre at the Blaenllynfi Council school at Maesteg; (4) erection of a semi-permanent building at Tondu Council school. The County Hall, Cardiff.

Wales.—April 25.—For erection of twelve houses adjoining new siding recently put in near Markham's Colliery, Hollybush, for the Abernant Building Syndicate. Mr. R. Simmonds, architect, Blackwood.

Walkley.—For erection of a picture palace. Apply at once to Mr. H. A. Morley, solicitor, Paradise Square, Walkley.

Wetherby.—For the various works required in erection of business premises, Crossley Street, for the Wetherby and District Co-operative Society. Mr. J. Houfe, architect and surveyor, Albert Chambers, Harrogate.

Wrexham.—April 20.—For the construction of the base of bandstand at the Parciau. Mr. J. England, borough engineer, Willow Road, Wrexham.

Yeadon.—For the various trades in connection with extensions at Banksfield Dyeworks. Messrs. Scott & Rhodes, Yeadon.

THE CRYSTAL PALACE SCHOOL OF ENGINEERING.

The award of certificates to the pupils of the Engineering School took place at the Crystal Palace on the 8th inst., when Mr. Cyril S. Cobb (Chairman of the London County Council) presided, and in the course of his address to the students he congratulated them on the result of the examination, and said that the Crystal Palace school was a splendid example of the right method of education, combined with discipline; and when an engineering student left the school to take up work he was fitted to manage workmen by reason of his having been taught in the first place to control himself.

Mr. Maurice Wilson read the reports of the examiners, which referred in high terms to the school's progress, and Mr. J. W. Wilson, the Principal, in the course of his address remarked incidentally that over 2,000 students had been trained at the school, and each student received individual tuition.

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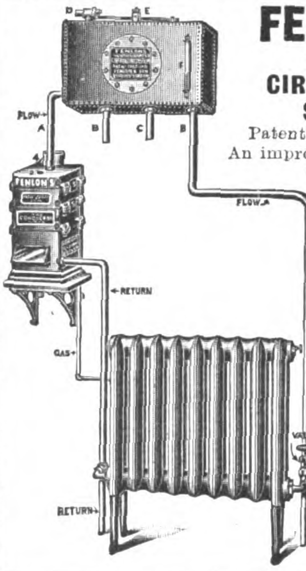

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TENDERS.

BURTON-ON-TRENT.

For extensions at the infirmary.

	£	s	d
T. Lowe & Sons (*accepted*)	£5,845	0	0

For the supply of a heating apparatus at the infirmary.

	£	s	d
Messenger & Co. (*accepted*)	£940	0	0

DARTON.

For the various works required in the erection and completion of a variety theatre, Perkin Hill, Darton, Yorks. Messrs. Crawshaw & Wilkinson, architects, Barnsley.

Accepted tenders.

G. Mellor, excavator, mason, and builder, Doncaster Road, Barnsley.

J. Holmes & Son, carpenter and joiner, Denby Dale, Huddersfield.

Dawber, Townsley & Co., slaters, Midland Railway Goods Yard, Barnsley.

E. Atkinson, painter and glazier, Staincross, near Barnsley.

F. Lindley, plasterer and concreter, Park Grove, Barnsley.

E. Wadsworth, painter and decorator, Midland Road, Royston, near Barnsley.

FARNHAM.

For the erection of a caretaker's cottage upon the Compton recreation ground.

	£	s	d
J. Wilkinson (*accepted*)	£218	5	0

HINCKLEY.

For the erection of sixteen additional workmen's dwellings in Coventry Road and Rugby Road, for the Urban District Council. Mr. E. H. Crump, A.M.I.C.E., engineer and surveyor, Hinckley.

	£	s	d
Cole & Sons	£2,974	0	0
Flavell	2,908	0	0
Greaves	2,828	0	0
W. H. Littler & Son, Hinckley (*accepted*)	2,799	0	0
Garner & Son	2,700	0	0

LEWISHAM.

For the enlargement of the Holbeach Road School, Lewisham, for the London County Council.

	£	s	d
Downs	£7,056	0	0
Appleby & Sons	6,988	0	0
Akers & Co.	6,633	0	0
Mills & Sons	6,559	0	0
W. F. Blay, Ltd.	6,465	0	0
Wallis & Sons	6,446	0	0
W. Smith & Sons	6,337	0	0
Jas. Smith & Sons	6,278	0	0
J. & C. Bowyer	6,264	0	0
Thomas & Edge	6,149	0	0
Moss & Sons	6,083	0	0
H. L. Holloway	5,964	0	0
T. D. Leng, Deptford (*recommended*)	5,947	0	0
Architect's estimate	6,022	0	0

LONDON.

For the enlargement of the Queen's Head Street School, Islington, for the London County Council.

	£	s	d
Ashby & Horner	£9,942	0	0
Perry & Co. (Bow), Ltd.	9,695	0	0
W. F. Blay, Ltd.	9,592	0	0
Wallis & Sons	9,351	0	0
Chessum & Sons	9,168	0	0
Lawrence & Son	8,954	0	0
Brand, Pettit & Co.	8,690	0	0
C. P. Roberts & Co.	8,683	0	0
McCormick & Sons	8,398	0	0
Rowley Bros.	8,325	0	0
L. H. & R. Roberts	8,279	0	0
John Willmott & Sons, Hornsey (*recommended*)	7,877	0	0
Architect's estimate	8,510	0	0

SCOTLAND.

For widening a bridge at Milton Road, near Duddingston Mills, for the Edinburgh Town Council.

	£	s	d
J. Angus & Sons, Edinburgh (*accepted*)	£2,546	0	0

UTTOXETER.

For alterations to the Town Hall.

	£	s	d
Ward & Godbehere (*accepted*)	£548	10	0

WALES.

For the erection of minister's house for the C.M. Trustees at Bettwsycoed.

	£	s	d
E. Williams & W. J. Roberts	£1,197	10	0
J. Roberts	1,188	1	10
T. Williams	1,114	0	0
Jones Bros.	1,025	0	0
Williams & Humphreys	1,014	2	0
J. Jones & Son, Bettwsycoed (*accepted*)	850	0	0

For the construction of about 2,350 lineal yards of roads, sewers, surface-water drains, with manholes, and other works connected with the lay-out of a portion of the Corporation estate at Townhill, for the Swansea Corporation.

	£	s	d
Bennett Bros.	£14,389	0	0
Walker	10,983	0	0
Hill Bros.	10,862	0	0
F. Hayes, Seaforth, Liverpool (*accepted*)	10,309	0	0

For the erection of infirmary buildings at Ruthin, for the Guardians. Mr. F. A. Roberts, M.S.A., architect, Mold.

	£	s	d
Hardman & Jones	£5,147	0	0
Samuel	4,925	0	0
Mayers & Sons	4,990	0	0
G. Cash & Sons, Capenhurst (*recommended*)	4,427	0	0
Miles Bros.	4,425	0	0

WORTHING.

For the laying of an additional 33-in. sewage outfall pipe from the sewage disposal works to the sea, and an additional 36-in. pipe to carry the waters of the Teville Stream and river ditch under Brighton Road into the sea.

	£	s	d
Bevis	£6,650	0	0
Wilkinson & Co.	4,368	0	0
Swales	3,197	0	0
A. G. Osenton, Horsham (*accepted*)	3,193	3	0

KELLY'S BUILDING TRADE DIRECTORY, 1914.

THE arrival of a new edition of "Kelly's Directory of the Building Trades" may be noted in all seriousness as an event of real importance to the industry concerned. One of the marks that a trade is vigorous is that it be in a state of flux, for without movement stagnation must sooner or later set in. Fresh recruits enter to share its prosperity, and they take the place of veterans about to retire, new subdivisions are created, and finally the failures drop out. Consequent on all this, there must ever be an element of unreliability about any directory, because it commences to be out of date from the time of its appearance. About Kelly's Directories there is always the comforting assurance that they are as free from errors as care and an expert staff can make them. But many things have happened since the firm issued their 1910 Building Trades Directory, and we welcome their latest edition (price 30*s.*) heartily. The first was issued in 1870, and the twelfth a few days ago.

The book contains 2,548 pages (exclusive of indices) and about 350,000 classifications. It is designed to give complete lists of all the various professions, trades, and businesses connected with the constructive arts, and the aim of the publishers has been to make each new edition more complete and accurate than the preceding one. No distinctions are made in the directory; a small town, if a builder carries on business in it, finds its place in it equally with the large provincial city or the Metropolis itself. The work is as reliable as it is possible to make a book of so large and comprehensive a character. It contains:—

1. Lists of the Metropolitan, county, and borough surveyors.
2. Every ascertainable name in the towns and villages alphabetically arranged under each county.
3. The names under each particular trade, in London and its suburbs, alphabetically arranged.
4. The names for the rest of England, Scotland, and Wales, similarly arranged.
5. The names for Ireland arranged under towns and trades.
6. The names for the Channel Islands and Isle of Man, also arranged under towns.

The whole of the names given in the Directory have been personally checked by the canvassers of Kelly's Directories, Ltd., 182-3-4 High Holborn, W.C., and their returns afterwards arranged by a staff specially trained to the work.

THE UTILISATION OF SOLAR ENERGY.

A PAPER on the above subject was read before the Society of Engineers (Incorporated) on Monday, the 6th inst., by Mr. A. S. E. Ackermann, B.Sc. (Engineering), who has been associated with the work (as joint consulting engineer with Mr. C. T. Walrond, to the Sun Power Company and the Shuman Engine Syndicate) for nearly four years. The paper is the first of its kind, and deals with the whole of the experiments which have been made during the four years, and which have cost about £30,000.

After naming the principal workers in this field, the author gives determinations of the solar constant and deals fully with the varying percentages of this quantity that are available throughout the day for power purposes. He then describes four types of Shuman Sun Heat Absorbers and gives in great detail the results of his forty-eight trials of these absorbers, the latest pattern (that erected near Cairo, Egypt) of which gave a maximum thermal efficiency of no less than 40.7 per cent., and a maximum output of steam of 1,442 lb. per hour at a pressure of 15.8 lb. per sq. in. abs. The results of these types of absorbers are compared by means of tables and curves, and from these the author has constructed a formula by means of which it is easy to calculate for a given type and size of absorber the total output of steam per hour if three things are known—(1) the time of day, (2) the humidity, and (3) the steam pressure. It has been known that humidity adversely affects the quantity of solar radiation arriving at the earth's solid surface, but this is the first time that its effect on solar steam production has been quantitatively determined.

The difference between the thermal efficiency of the solar boiler and the commercial value of the steam produced is ingeniously brought out, the author making it clear that in the case of such low-pressure boilers a high thermal efficiency is not necssarily the same thing as the most economical conditions of working, and he shows that, up to a certain limit, the higher the steam pressure, the more economical the working, though the thermal efficiency is then lower. Two of the types of absorber did not move with the sun, and one did. The greater constancy of output of steam in the case of the latter is very marked.

In order to utilise the low-pressure steam economically, Mr. Frank Shuman designed a special engine which has also gone through several stages. This engine is fully described with drawings, and the author gives the results of his fourteen trials of the several engines, and compares their results with those of exhaust-steam turbines and the low-pressure cylinders of compound and triple expansion engines, showing that the Shuman engine is the more economical. The steam consumption of one of these engines was only 22.1 lb. per B.H.P. hour, when the output was 94.5 B.H.P., and the steam pressure only 16.2 lb. per sq. in. abs. The thermal efficiency of the engine compared with an engine working on the Rankine cycle was 54.75 per cent. In the case of a Shuman high-pressure non-condensing engine with an output of 29 B.H.P., the steam consumption was 23.8 lb. per B.H.P. hour, and the relative thermal efficiency 71.7 per cent.

VARIETIES.

CLACTON Council has decided to provide a bathing pavilion on the East Cliff, to accommodate eighty bathers at a time, at a cost of £850.

MR. H. E. HAWKER, architect, Bournemouth, has prepared plans for a large drapery store proposed to be opened by Messrs. Bobby & Co., Ltd., in Bournemouth Square.

MESSRS. WYLIE & SON, of Glasgow, have been appointed by the Airdrie Town Council as engineers for the proposed sewage purification scheme, for which they received the premium in a recent competition.

MARBLÆGIS, LTD., of Hotchley Mills, East Leake, near Loughborough, inform us that they have purchased the Brothers Plaster Co.'s patents, plant, and mines.

THE Cowes Harbour Commissioners have received authority to raise a loan of £8,000 for the construction of a breakwater 900 feet long across Shrape Bank, at East Cowes, in a northerly direction, for the protection of the harbour and yachts during the north-easterly gales.

DUNFERMLINE District Committee have accepted a tender of Mr. William Tawse, contractor, Aberdeen, amounting to £28,435, for contract No. 1 in connection with the construction of new waterworks at Glendevon.

BY twenty-eight votes to twelve the Southampton Town Council resolved that the ancient Bargate should not be removed. The First Commissioner of Works wrote that the Board of Works considered the preservation of the Bargate was of national importance.

THE Torquay Corporation have adopted an extension scheme prepared by their electrical engineer, which will involve an outlay of £15,722. The detailed estimates of cost were as follows: First section, extension of boiler-house, £4,440; second section, new engine-room, £9,517; third section, new switch control chamber, £1,765.

THE Registrar of the Diocese of Oxford announces that three surveyors of Ecclesiastical Dilapidations will shortly be appointed for the Archdeaconries of Oxford, Berks, and Buckingham. Each surveyor will be paid by fees according to a prescribed scale, and will be required to undertake his duties at once. Application must be sent in by April 25.

MESSRS. TAYLOR & WALLIN, consulting engineers, recently presented their report to the Longtown Rural District Council for supplying portions of the parishes of Hethersgill and Stapleton with water, the estimate being about £3,500. The Council have now instructed Messrs. Taylor & Wallin to extend the scheme so as to include eleven parishes, the scheme necessitating probably something like thirty to forty miles of water-mains.

THE amphitheatre in the Crystal Palace grounds, which formed such a prominent feature of the Festival of Empire, was razed to the ground some time ago, and a firm of local auctioneers have been instructed to sell this day (the 17th inst.) the remaining stock of timber which was used in the construction, *viz.* 150,000 3 by 9 spruce and yellow deals, battens, quarterings, match linings, weather boards, pitchpine and scaffold poles, &c.

THE Scarborough Town Council in committee has decided to proceed with the formation of a large oval bathing pool in the South Bay. The estimated cost of the pool with the promenade will be £5,000. A fresh supply of water will be secured at every high tide. The buildings in connection with the pool are estimated to cost £8,200. They will consist of seventy-five bathing-boxes for men and sixty for ladies, and there will be shelters, bungalows, and a café. Winding footpaths from the Esplanade will give access to the pool, and £4,525 will be spent on these pathways.

MR. ROBERT H. J. MAYHEW has been appointed by the L.C.C., out of twenty-nine applicants, district surveyor for the newly constituted district of Hackney (East), and the consequential vacancy in the district of Bromley, St. Leonard, has been filled by the appointment of Mr. Edgar W. Knight, chief assistant to the district surveyor for Plumstead and Eltham.

MR. ANDREW BLAIR, contractor, Glasgow and North Queensferry, who is just finishing his contract for laying the first section of the new main outfall sewer for Rosyth, has been successful in obtaining the contract to lay the third section of the drain, bringing it from Pitreavia to the southern boundary of old Dunfermline. The distance is nearly two miles, and the most of it will require to be tunnelled. The amount of the tender was £27,869 8*s*. 4*d*.

THE contract has been placed with Messrs. F. D. Cowieson & Co., St. Rollox, portable building manufacturers, for a whole village of workmen's houses and dormitories to be erected at Rosyth for Messrs. Easton Gibb & Sons, Ltd. The new village will be erected overlooking the bay, and will consist of two, three, and four-roomed bungalows, each with large garden plots. The contract is about £20,000. The work must be completed within four months from date.

REMARKABLE revelations as to the effect of the Derwent Valley water on service pipes are made in a report presented by the Nottingham Water Committee to the City Council. As a result, the supply from the Derwent Valley reservoirs has been entirely discontinued, and the city is thrown back on its old resources of pumping from wells in the sandstone. Nottingham, Sheffield, Derby, and Leicester, Nottinghamshire, and Derbyshire are all concerned in the Derwent Valley scheme, which up to the present has cost nearly £7,000.000, and is little more than half completed. The Water Committee stated that owing to widespread complaints they made exhaustive investigations, and found continued use of the Derwent water would in a short time choke all the wrought-iron pipes, cylinders, and boilers in the city. They must be replaced with lead or copper. From the point of view of public health the water is absolutely pure, though somewhat discoloured.

THE
Architect and Contract Reporter.
FRIDAY, APRIL 24, 1914.

EDITORIAL NOTICES.

The Editor will always be pleased to examine drawings or articles with a view to publication, but cannot be responsible for the safety of those sent, though every reasonable care will be taken. Contributors desiring payment should clearly state their wishes. No payment will be made until after publication, and a commission to prepare articles or drawings does not necessarily imply acceptance or approval.

No communication can be inserted unless authenticated by the name and address of the writer—not in every case for publication, but as a guarantee of good faith.

We have upon our staff a very eminent Barrister, who will be glad to answer in the columns of this paper any legal question that may be of interest to our readers. All letters must be addressed "Legal Adviser," Office of "The Architect," Imperial Buildings, Ludgate Circus, London, E.C.

The Editor will be glad to receive from Architects in London and the Provinces results of Competitions and Tenders and other particulars of Works in progress in which they may be interested.

TENDERS, ETC.

⁂ *As great disappointment is frequently expressed at the nonappearance of Contracts Open, Tenders, &c., it is particularly requested that information of this description be forwarded to the Office, Imperial Buildings, Ludgate Circus, London, E.C., not later than 2 P.M. on Thursdays.*

COMPETITIONS OPEN.

Chester.—The Corporation invite designs for the erection of houses for the working classes. Premiums of £50, £25, and £10 are offered. Mr. Patrick Abercrombie, M.A., will act as assessor. Deposit £1 1*s*. Mr. J. H. Dickson, town clerk, Town Hall, Chester.

Conway.—The Board of Guardians invite schemes, with plans, for the laying out of a plot of land near Conway for the provision of one relieving home and four cottages homes, and for laying out of the remainder of the plot for future cottage homes, recreation grounds, &c. Premiums of £10 and £5. Commission will be paid for work carried out during the first five years from date of acceptance of a scheme. Send applications to Mr. J. W. Post, clerk to the Guardians, Union Offices, Conway.

East Preston.—The Southstrand Sports Club (newly formed) invite plans for a clubhouse to be erected on the Southstrand Estate, East Preston, near Worthing. The successful competitor will be instructed to carry out the work, and will receive, in addition to the usual fees, a bonus on completion of the building. A plan of the site and full particulars can be obtained of Mr. William Hollis, surveyor, Southstrand Estate Offices, Church End, Finchley, London.

Glasgow.—May 1.—The Corporation are prepared to receive from sculptors competitive models and relative offers for four groups of symbolical sculpture to be placed on the abutments of the new bridge at Radnor Street, Kelvingrove Park, Glasgow. Copies of the conditions of the competition may be obtained on application to Mr. J. Lindsay, town clerk, City Chambers, Glasgow.

Glasgow.—The Tramways Committee of the Corporation of Glasgow invite designs for tramway shelter and convenience. Plan of ground and other particulars may be obtained from Mr. James Dalrymple, General Manager, 46 Bath Street, Glasgow.

Grimsby.—June 2.—The Building Committee of the proposed Constitutional Club invite designs for premises to be erected at the corner of Victoria Street and Upper Spring Street, at an estimated cost of £3,000. Premiums of £40, £20, and £10 are offered. Deposit of £2 2s. will be sent back on receipt of designs or on return of the particulars within 10 days. Mr. H. W. V. Sheckell, secretary, Constitutional Club, Victoria Street, Grimsby.

Hendon.—May 11.—The Education Committee will be prepared to receive competitive designs for a school at Hale Grove Gardens, Mill Hill. Conditions of competition and plan of site may be obtained from Mr. James Anderson, secretary to the committee, Council Offices, Hendon, N.W.

Hythe.—May 30.—The Town Council invite designs for a concert hall and public shelter, for which premiums of fifty, twenty-five, and ten guineas will be awarded. Deposit £1 1*s*. (returnable). Condition, site plan, &c., may be obtained on application to Mr. Bernard C. Drake, town clerk, Hythe, Kent. (See advertisement.)

London.—May 4.—The Bridge House Estates Committee of the Corporation of the City of London invite designs from British architects for the architectural treatment of the new St. Paul's Bridge. The conditions of the competition and instructions may be obtained upon payment of a deposit of £3 3*s*., which will be returned on receipt of a design in accordance with the conditions. A premium of £300 is offered for the design which may be placed first, and further premiums of £200 and £100 respectively. The committee will be advised by Sir William Emerson, P.P.R.I.B.A., as assessor, whose decision will govern the award of the premiums and be final and binding in all stages of the competition. The Town Clerk, Guildhall, London, E.C.

Manchester.—May 23.—The Sanitary Committee of the Corporation invite competitive plans, specifications and estimates for semi-detached cottages on the Blackley estate. Premiums of £50 and £25 will be paid for the first and second best plans, &c., as selected. Deposit £1 1*s*. The Sanitary Department, Civic Buildings, Mount Street, Manchester. (See advertisement.)

Mold.—The Urban District Council invite architects to submit plans, &c., for a fire station and caretaker's house, to be erected at Earl Road. Further particulars may be obtained from Mr. D. Thomas, surveyor, Town Hall, Mold.

Middleton.—July 16.—The Corporation invite designs for a town hall proposed to be erected in Long Street at a cost of £18,000. Premiums of £100, £50, and £25 are offered. The assessor is Mr. Hastwell Grayson, F.R.I.B.A., M.A. Deposit £1 1*s*., which will be returned on receipt of a design. Mr. F. Entwistle, town clerk, Town Hall, Middleton.

Sunderland.—June 23.—The Borough Council invite designs for a proposed secondary school, Barnes Estate, Durham Road, to accommodate 600 boys. Premiums of £100, £50, and £25 are offered. An assessor nominated by the President of the R.I.B.A. will be appointed. Deposit of

(*Continued on page* 15.)

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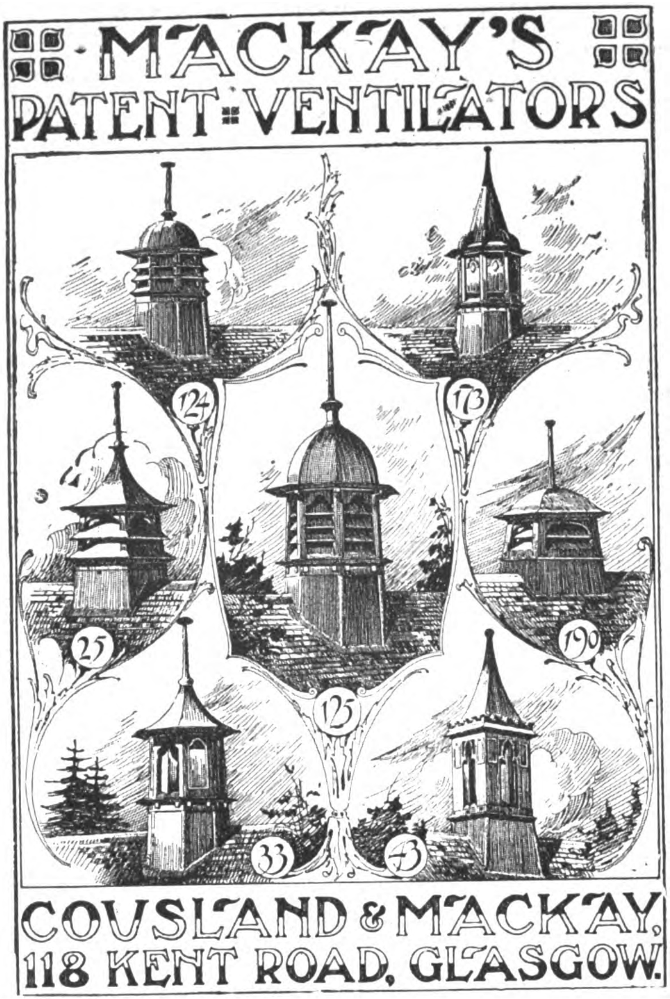

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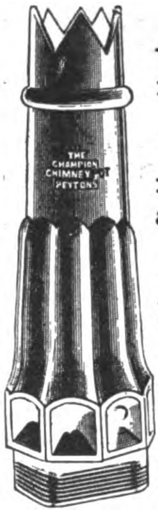
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CONTRACTS OPEN.

Barnet.—May 13.—For erection of a home for infants at Wellhouse Lane, for the Guardians. Deposit £1 1*s.* Messrs. Williams & Cox, architects, 34 Henrietta Street, Covent Garden, W.C.

Beeston.—May 1.—For widening Beeston county bridge in stone, for the Cheshire County Council. Mr. W. Holland, county bridgemaster, The Castle, Chester.

Birmingham.—May 25.—For the construction of piling in foundations, basement floors, cooling ponds, canal basin, and canal widening, &c., to be executed in ferro-concrete at the Nechells generating station, for the Corporation. (Messrs. Harrison & Cox, architects, Council Chambers, 109 Colmore Row, Birmingham.) Send applications and £5 5*s.* deposit by April 30 to the Secretary, Electric Supply Department, 14 Dale End, Birmingham.

Bristol.—April 29.—For additions to the infirmary buildings at Southmead, for the Guardians. Deposit £2 2*s.* Mr. W. S. Skinner, architect, 27 Orchard Street, Bristol.

Broadstairs.—May 2.—For erection of a school to accommodate 320 scholars, for the Kent Education Committee. (Mr. W. H. Robinson, M.S.A., committee's architect.) Send in applications and £1 deposit by April 29 to Mr. F. W. Crook, secretary, Sessions House, Maidstone, Kent. (See advertisement.)

Bromley.—May 1.—For certain alterations and additions for providing extra accommodation for nurses, &c., at the isolation hospital, Skym Corner, Bromley Common, for the Bromley and Beckenham Joint Hospital Board. Mr. F. H. Gedney, clerk, Park House, Bromley, Kent.

Burnopfield.—For erection of two self-contained houses, &c. Mr. J. Cockburn, East Pontop, Annfield Plain.

Burton-upon-Trent.—May 1.—For the following contracts in connection with retort house extension, for the Gas and Electricity Committee: (1) Extension of retort house building and of retort bench (four arches); (2) four Klönne regenerator retort settings; (3) extension of retort house roof, buckstays, girders, coal hoppers, and steelwork generally for four settings; (4) retort bench mountings (mouthpieces, ascension pipes, mains, valves, tar towers, retort house governor, &c.) for four settings. The Manager, Gasworks, Burton-upon-Trent.

Chartham Downs (near Canterbury).—May 14.—For the erection of a new bakery, new workrooms, additions to farm buildings, and other works in connection therewith at the Kent County Lunatic Asylum. Deposit £10. Mr. W. J. Jennings, architect, 4 St. Margaret's Street, Canterbury. (See advertisement.)

Cheltenham.—April 29.—For sundry alterations, cleaning, and painting work, &c., at the workhouse. Mr. T. Malvern, architect, 21 Winchcombe Street, Cheltenham.

Coventry.—May 4.—For the works required to be executed and materials supplied in connection with the proposed alterations and additions to the old brewery premises, Leicester Row, for the General Works Committee. Deposit £2 2*s.* Mr. J. E. Swindlehurst, city engineer and surveyor, St. Mary's Hall, Coventry.

Dearham.—April 27.—For erection of a wall near the schools at Dearham, for the Cockermouth Rural District Council. Mr. S. K. Gibson, surveyor, Grecian Villa, Cockermouth, Cumberland.

Eastbourne.—April 27.—For erection of public conveniences in the Bourne Valley enclosure, Langney Road, and in the grounds of Avenue House, fronting on Wharf Road, for the Sanitary Committee. Mr. A. E. Prescott, borough surveyor, Town Hall, Eastbourne.

Egremont.—April 30.—For the various works required in erection of a branch shop and two houses, East Road, for the Egremont Industrial Co-operative Society, Ltd. The Central Stores, Egremont, Cumberland, and Messrs. W. G. Scott & Co., architects and surveyors, 2 Park Lane, Workington.

Fleetville.—May 7.—For erection of a Council school at Fleetville, St. Albans, for the Herts. County Council. Deposit £2 2*s.* Mr. U. A. Smith, county surveyor, Hatfield.

Gildersome.—April 30.—For the various works required in alterations and additions to 13 houses, Booth Square, Gildersome, Yorks., for Mr. R. Hudson. Mr. T. A. Buttery, Licentiate R.I.B.A., architect and surveyor, Queen Street, Morley, and 1 Basinghall Square, Leeds.

Goodmayes.—April 28.—For erection and completion of the following buildings, for the Ilford Urban District Council: (*a*) electricity sub-station and showroom at Green Lane, Goodmayes, Ilford; (*b*) park-keeper's lodge at Goodmayes recreation ground. Deposit £2 2*s.* Mr. H. Shaw, M.I.C.E., engineer and surveyor, Town Hall, Ilford.

Grange-over-Sands.—April 29.—For whole of separate trades required in erection of vestry at the Wesleyan chapel. Messrs. Austin & Paley, architects, Lancaster, and Messrs. Wright & Son, surveyors, Lancaster.

Harrogate.—April 27.—For the various trades in connection with reinstatement of the market hall, for the Corporation. Mr. C. E. Rivers, A.M.I.C.E., borough engineer and surveyor, Harrogate.

Huddersfield.—April 29.—For erection of motor garage and dwelling-house in Glebe Street, Marsh. Messrs. J. Berry & Sons, architects and surveyors, 8 Market Place, Huddersfield.

Hull.—April 29.—For builders' and ferro-concrete work required in the construction of workshops and in certain extensions and alterations to the existing car shed buildings, for the Corporation. The area covered by the new buildings is about 3,400 square yards. Deposit 10*s.* Mr. A. E. White, M.I.C.E., city engineer, Guildhall, Hull.

Hull.—April 29.—For the builders' and ferro-concrete work required in the construction of a new pig market and certain alterations to the cattle market, for the Corporation. Deposit 10*s.* Mr. A. E. White, M.I.C.E., city engineer, Guildhall, Hull.

Ireland.—April 27.—For alterations at the head post office, Cork. Deposit £1. The Head Post Office, Cork, and the Office of Public Works, Dublin.

Ireland.—May 5.—For (1) reconstruction of part of the Old Bridewell technical school, Baltinglass, and additions to same, and (2) building of technical schools in Arklow, for the County Wicklow Joint Technical Instruction Committee. Deposit £1 1*s.* in each case. Mr. R. Wake, architect, The Mall, Wicklow.

Kidsgrove.—May 4.—For erection of a urinal in Back Market Street, for the Urban District Council. Deposit £1 1*s.* Mr. F. C. Crimes, engineer and surveyor, Kidsgrove.

Lepton.—May 5.—For any or all trades required in erection of a shop and house, and alterations and additions to two dwelling-houses at Rowley Hill. Messrs. J. Kirk & Sons, architects, Market Place, Huddersfield.

London.—April 30.—For strengthening the floors of the boys' dormitories at their school in Hornsey Road, N., for the Guardians of St. Mary, Islington. Deposit £2. Mr. E. J. Harrison, architect, 9 Gray's Inn Square, W.C.

London.—May 4.—For design and erection of a shop front at their new electricity showroom, adjoining the Town Hall, Ealing, for the Town Council. Mr. W. R. Hicks, A.M.I.C.E., borough engineer, Town Hall, Ealing, W.

London.—May 4.—For alterations to the receiving wards, young women's wards, and chronic wards sanitary annexe, at their workhouse, Northumberland Street, Marylebone, W., for the Guardians of St. Marylebone. (Mr. A. Saxon Snell, F.R.I.B.A., architect, 9 Bentinck Street, Manchester Square, W.) Deposit £2 2*s.* Mr. H. T. Dudman, clerk, Guardians' Offices, Northumberland Street, Marylebone, W.

Ludlow.—May 7.—For the demolition of existing buildings at Upper Galdeford, and for erection of new printing works, shops, and offices, for Mr. W. F. Marks. Deposit £1 1*s.* Mr. W. Geo. Lane, Town Hall, Ludlow.

Minster-in-Sheppey.—May 18.—For the enlargement of a Council school at Minster-in-Sheppey Halfway Houses by the addition of 150 places, for the Kent Education Committee. Send applications and £1 deposit by April 29 to Mr. F. W. Crook, secretary, Sessions House, Maidstone.

Newport (Mon.).—For the building of works offices in Corporation Road. The British Mannesmann Tube Co., Ltd., King's Chambers, Newport, Mon.

Rochford.—April 28.—For alterations to the interior of the old dining hall and kitchen at the workhouse, for the Guardians of Rochford Union. The Clerk of the Works, the Workhouse, Rochford, Essex.

Scotland.—April 27.—For the mason, carpenter, plumber, slater, and asphalt works of new car shed to be erected on the site of the old militia barracks, King Street, Aberdeen, for the Town Council. Mr. W. Dyack, M.I.C.E., Aberdeen.

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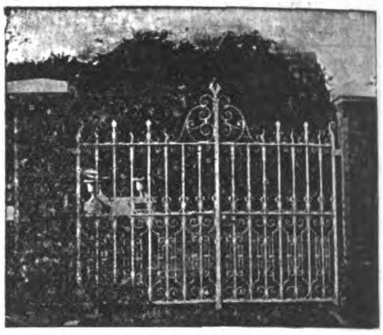

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St. Austell.—May 9.—For erection of a handicraft and cookery centre at the Central Council schools, West Hill, for the Cornwall Education Committee. Deposit £1 1*s*. Mr. B. C. Andrew, architect, Biddicks Court, St. Austell.

Scotland.—April 28.—For the mason, joiner, ferro-concrete, plumber, slater, and plaster works of the proposed new public baths in Marketgate, Arbroath, for the Magistrates and Town Council. Deposit £1 1*s*. Mr. H. Gavin, architect, 42 Hill Street, Arbroath.

Scotland.—April 30.—For excavation, mason, brick, carpenter, joiner, plumber, slater, plaster, and concrete works in connection with alterations and additions to laundry block, Bangour, for the Edinburgh District Board of Lunacy. Mr. J. Kyd, clerk and treasurer, Chambers, Castle Terrace, Edinburgh.

Scotland.—April 30.—For the following works required in connection with the proposed erection of two tenements at the corner of Gallowgate and Hill Street, Glasgow, viz.: (1) Mason work, (2) joiner work, (3) plaster and slater works, (4) plumber work, (5) tile work, and (6) painter work, for the Corporation Sanitary Committee. The Office of Public Works, 64 Cochrane Street, Glasgow.

Scotland.—May 8.—For the brick, joiner, plumber, plaster, slater, glazier, and steel works of proposed sanatorium at Noranside, three miles from Tannadice Station, for the Forfar County Council. Deposit £1. Messrs. Maclaren, Sons & Soutar, architects, 10 Reform Street, Dundee.

Scotland.—May 9.—For erection of a concrete beacon on the Whitestone Bank, which lies off the Point of Ayre, Isle of Man, for the Commissioners of Northern Lighthouses. The Whitestone Bank is submerged at all states of the tide. Deposit £1 1*s*. Mr. D. A. Stevenson, M.I.C.E., engineer to the Commissioners, 84 George Street, Edinburgh.

Sheffield.—April 28.—For erection of Attercliffe and Brightside labour exchange, for the Commissioners of H.M. Works and Public Buildings. Deposit £1 1*s*. The Manager, Labour Exchange, East Parade, Sheffield, and at H.M. Office of Works, Storey's Gate, S.W.

Sidcup.—May 5.—For erection of Council offices at Sidcup, for the Foots Cray Urban District Council. Deposit £2 2*s*. Mr. W. A. Farnham, A.M.I.C.E.I., F.S.I., surveyor, Council Offices, Sidcup.

Stockport.—May 5.—For steel framework and reinforced concrete floors in erection of bakery and warehouse buildings, Adswood sidings, for the Stockport Industrial and Equitable Co-operative Society, Ltd. Deposit £5. Messrs. Wrathmell & Blackshaw, Licentiates R.I.B.A., architects, St. Peter's Square, Stockport.

Uppermill.—For erection of central premises, High Street, Uppermill, for the Committee of the Uppermill Industrial Co-operative Society, Ltd. Deposit £1 1*s*. The Architect's Department, Co-operative Wholesale Society, Ltd., 1 Balloon Street, Manchester.

Wales.—April 27.—For alterations and additions to premises, Cardiff Road, Troedyrhiw, for Mr. A. Daniel. Messrs. Johnson & Richards, architects, Merthyr Tydfil.

Wales.—April 29.—For alterations and additions to the Corbett Arms Hotel, Ogmore Vale, for the Rhondda Valley Breweries Co., Ltd. Deposit £2 2*s*. Mr. T. F. T. Jarvis, F.C.I.S., The Brewery, Pontypridd.

Wales.—April 29.—For erection of a motor garage in Grey Friars Road and Institute Lane, Cardiff, for the Robins' Motor Cab Co., Ltd. Deposit £2 2*s*. Mr. D. Morgan, F.R.I.B.A., architect and surveyor, Charles Street Chambers, Cardiff.

Wales.—April 30.—For erection of a fire station in Westgate Street and Quay Street, Cardiff, for the Cardiff City Council. Deposit £1 1*s*. The Town Clerk, Cardiff, or Messrs. E. V. Harris & T. A. Moodie, F.R.I.B.A., architects, 8 New Square, Lincoln's Inn, London, W.C.

Wales.—May 2.—For erection of a mission hall, &c., at Blackmill, in the parish of Llandyfodwg, for the Rev. William Edwards, vicar. Mr. J. M. Williams, C.E., architect and surveyor, Blackmill, near Bridgend.

Withington (Manchester).—For alterations to the Withington golf house. Mr. H. H. Brown, F.R.I.B.A., 20 Brazennose Street, Manchester.

Worksop.—May 1.—For the following works required in erection of eleven houses at Whitwell, for the Worksop Co-operative Society, Ltd.: (1) excavator, bricklayer, mason, carpenter, joiner, slater, and plasterer; (2) plumber, glazier, and ironfounder; (3) painter. Mr. B. D. Thompson, architect, 73 Bridge Street, Worksop.

TENDERS.

BOSTON (LINCS.).

For erection and completion of cottages within their district, for the Rural District Council. Mr. H. Kidd, architect, Kirton, Boston.

Accepted tenders.

Wrangle, Greengate, one pair, and Sea Lane, one pair—M. H. & J. W. Allen, one pair each, at £334 per pair.
Freiston, Baker's Lane, one pair—J. Leafe, Boston, £319 10*s*.
Frampton, Sandholme, two pairs—J. Leafe, Boston, £330 per pair.
Kirton, Drain Side, thre pairs—Belton, Gipsy Bridge, £324 10*s*. per pair.
Kirton, Wash Road, two pairs—J. Leafe, Boston, £324 10*s*. per pair.
Kirton, Wash Road, Broom Bridge, two pairs—Belton, Gipsy Bridge, £324 10*s*. per pair.
Algarikrk, The Roundlands, three pairs—Belton, Gipsy Bridge, £335 per pair.
Sutterton, Pump Holt, three pairs—Barnsdale, Donington, £320 per pair.
Pelham's Lands, Holland Fen, one pair—Belton, Gipsy Bridge, £327 10*s*.
Wigtoft, Hippo Lane, two pairs—Barnsdale, Donington, £320 per pair.

GRIMSBY.

For the erection of Territorial barracks, Augusta Street, for the Lincolnshire Territorial Force Association. Mr. A. Easton, architect, Hull.

Kirton, Drain Side, three pairs—Belton, Gipsy Bridge,

Jarvis & Sons	10,960	0	0
Hewins & Goodhand	10,685	0	0
Levitt	10,495	0	0
Maule & Co.	10,210	0	0
Holmes & Co.	10,092	0	0
Fenwick	10,060	0	0
Lyons & Sons	10,000	0	0
Howes	9,971	0	0
Bilton	9,930	0	0
Thompson & Son	9,888	0	0
P. T. Kettlewell, Hull (*recommended*)	9,497	0	0
Architect's estimate	9,506	0	0

LONDON.

For execution of the following road works, for the Croydon Rural District Council.

	Coulsdon, Downs Court Road.	Mitcham. Olive Road.	Mitcham. Birdhurst Road.	Mitcham. Warren Road.	Melrose Avenue.
Farrow	3,288	683	435	214	1,383
Free & Sons	2,999	620	390	109	1,290
Hall	3,053	—	—	—	—
E. Iles, senr.	3,040	591	377	205	1,235
Mowlem & Co.	3,185	607	380	216	1,295
Yewen	2,897	597	377	223	1,237
Surveyor's estimates	3,139	548	346	174	1,141

Mr. Yewen's tender for Downs Court Road was accepted, and Mr. Iles' tenders for the other roads in Mitcham.

LONDON.

For repairs and alterations to their premises, No. 40 Great Ormond Street, W.C., for the Royal Standard Benefit Society. Messrs. Higgins & Thomerson, Licentiates R.I.B.A., architects to the Society, 9 Finsbury Square, E.C.

Heath & Son	£633	0	0
Seath & Harris	449	0	0
Mattock & Parsons	447	0	0
Peddle	445	0	0
Hollingsworth	443	0	0
Crabb & Son	437	0	0
Jordan & Plaford	430	0	0
Acock	425	0	0
Lawrence & Sons	425	0	0
Silk & Son	418	0	0
Hargrave	408	14	0
Catterall	399	10	0
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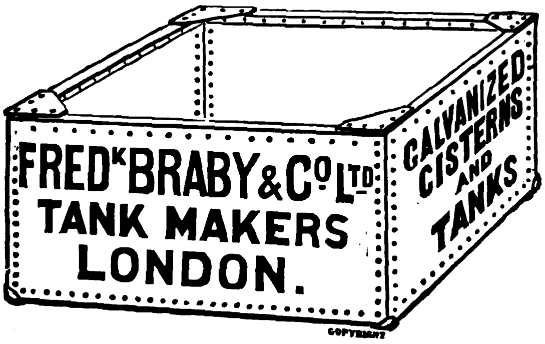

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SCOTLAND.

For constructing a reservoir at Beecraigs, for the Linlithgow District Committee.

H. M. Murray & Co., Glasgow (*accepted*) £18,331 0 0

Eleven tenders were received.

SUTTON-IN-ASHFIELD.

For erection of a fire station in Church Street.

H. Shaw, Sutton (*accepted*) . . . £289 0 0

WALES.

For the making of roads and sewers on Town Hill Estate, for the Swansea Housing Committee.

Frank Hayes, Liverpool (*accepted*) . £10,309 0 0

Four tenders were received.

For alterations and improvements to certain male wards at the asylum, Denbigh, for the North Wales Lunatic Asylum Committee. Mr. W. T. Lockwood, F.R.I.B.A., architect, Chester.

J. Mayer, Sons & Co., Chester (*accepted*) . £7,980 0 0

WOLVERTON.

For the enlargement of the county secondary school, for the Bucks. Education Committee. Mr. C. H. Riley, architect. Quantities by Messrs. W. J. Farthing & Sons, Strand, W.C.

Hawted	£1,885	0	0
Green	1,856	0	0
Henson & Son	1,855	0	0
Hickman & Sons	1,835	0	0
Webster & Cannon	1,798	0	0
E. Archer & Sons, Northampton (*accepted*)	1,685	0	0

TRADE DISPUTES.

At the last general meeting of the London Association of Master Decorators, Mr. Fred. Dakin (President) made the following remarks on the above important topic:—

The present very serious deadlock between the master builders and their workmen must necessarily cause the members of the decorating trade, and, in fact, all employers of labour, to ponder over the vital principles involved in the dispute, and to consider what safeguard should be adopted for the prevention of strikes and lockouts in the future.

I think there can be little doubt that since the passing of the Trades Disputes Act employers throughout the country have had a bad time, and been put to serious dislocation of trade and monetary loss by the impetus which that Act gave to strikes on frivolous pretexts, which, although in many instances have been small and of short duration, in a good proportion have extended over considerable periods and have involved thousands of employees.

But it is not on the grounds which I have mentioned alone that strikes are to be deplored. They must tend to drive trade out of the country into other channels, and when that happens we, as business men, know in our restricted circle how difficult it is to get a customer back even if we get into personal touch, whereas in commerce it is so much more difficult, and, therefore, so much more disastrous to the nation's produce and treasury, and more or less to the income of every individual.

It is a regrettable fact that the trade unions which were formed to protect the working classes, have up to the present time caused them to undergo so much extreme suffering, and at the same time have tended to slaughter the initiative and decrease the output of the workers. The net result has been to increase costs without any material benefit (on the average) to the workers.

Their "collective bargaining" has in actual fact been holding a pistol at the head of the employer, who naturally resents such a course—an immediate rise in wages being an impossibility owing to the inability of employers arranging terms with their customers or continuing existing contracts under more costly conditions—whereas, if they would adopt reasonable and more patient and methodical methods, they would often not only gain their points, but also hold their funds, and, what is more important, their work and home comfort and happiness would be assured them while negotiations were in progress.

One essential factor which would be required in an improved scheme would appear to me to be for the unions to form committees or Councils, consisting altogether of working men chosen from the workers themselves, acting without the leadership, advice, or assistance of professional agitators or Socialists, and their officials to act only in accordance with such committee's instructions and never on their own initiative. My view is that trade unions are intended to be for the benefit of the workers, therefore conserving workers' interests, obviously a Conservative policy and opposed to Socialistic doctrines altogether.

One of the first aims of a trade union of workers should be this: Their members should not all expect to receive the same wages per hour, as obviously they do not all command the same skill. Having enrolled the existing membership without any form of test, and merely by the fact (as I think is usual) of having worked in the trade for a given period, they should in future insist that members shall have undergone a proper course of apprenticeship, during which period certain minimum wages shall be paid.

Following this not less than two years they shall earn a higher rate as improvers, and when they can satisfy a Board of Masters and Workmen as to their ability they shall become entitled to a minimum wage to be recognised in their particular calling.

In trades where increased knowledge and skill warrants such a course, I should advocate, for instance (taking trades with which I am conversant), that the man who proves himself capable of doing good-class joinery work should be in a position to claim a higher wage than one who could execute carpentry only. The painter who can execute the best class of work and has proved himself skilled in the use of colour, &c., should obtain a percentage more than the mere brush hand or labourer who can only do what he is told. To this end each man should carry his credentials with him, which should be capable of and subjected to verification by the employers.

Of course, if a man being, for instance, a high-class joiner finds himself in need of employment and is unable to obtain work suited to his knowledge, he should not be precluded from working as a carpenter with carpenter's wages, but on the understanding that he will expect the higher rate should better work be forthcoming.

I cannot help thinking that the great drawback to trade unionism as practised to date is the levelling-down process. It keeps many of the workers of the greatest initiative and superior knowledge out of their ranks. It breeds, I am positive, discontent and poverty—the men are ordered to do this and that and to pay in large subscriptions, and only receive back driblets in time of illness—in fact, they are virtually deprived of a large proportion of their savings, which are hoarded up and never distributed except when strikes are ordered; when these take place the money that is not paid away to irresponsible agitators is doled out in small quantities until the hoard vanishes, and the men then perforce re-commence work in debt and in a much worse plight than before the strike. Meanwhile, they have brought starvation or extreme suffering and want upon their dependants, they have inflicted loss on their masters, and often they succeed in diverting trade into new channels and reducing the demand for their labour, and it may never return to the old channels. Meantime, this loss goes the round, and one of its results is a creeping up of prices of general commodities so that part of the increase in wages (if conceded) is swallowed up in increased cost of living, the worker thus not having effected any real improvement.

How much better would it be for the working classes to have their moneys made good use of, part, for instance, to be properly allocated to pensions, part to contribute towards national or individual trades technical education schemes, and part as a banking fund with interest accruing, to be drawn out at stated periods or on special occasions?

This is wandering from the subject, but I cannot help alluding to it in the hope that these ideas may find their way into the minds of the labouring classes. Why I mention it is that I feel trade unionism is a upas tree that should, and could, be transformed by the magic of common sense and experience into a tree bearing good and plentiful fruit.

In the *Times* newspaper of January 28 it was stated that the building trades lock-out and the principles it involved presented an opportunity for some third party to step in and formulate a scheme, and referred to its being a good chance for the Industrial Council.

I thought it would be a good opportunity for the London Association of Master Decorators to consider what means could be devised, and I made the following notes, which, coupled with my preceding remarks, I hoped would possibly lead to some tangible methods being adopted to prevent individual and national losses and inconveniences arising from trade disputes.

A petition has been signed by the Employers' Parliamentary Council for the repeal of the Trades Disputes Act.

Such a petition should, by organised efforts in every city and town, be presented to every employer for signature.

The following should be added to the petition:—

That a Bill should be brought before Parliament declaring strikes and lock-outs illegal, except under certain very definite conditions and the happening of such, except as specified, to render the offending parties liable to heavy fines. I believe such is the case in some of our Colonies.

The conditions to be observed for the settlement of trade disputes to be as follows:—

(*a*) Every trade once a year to send in names for the purpose of forming a joint Conciliation Board, at which an equal number of representative masters and working men (not officials) shall have seats and an independent chairman of wide business experience appointed by the Chamber of Commerce or Industrial Council. When called on to act all to be paid agreed out-of-pocket expenses out of employers' and workmen's funds, which are to be collected as and when required from every working member of the trade, whether belonging to an Association or Union or not. On differences arising which individual masters or men cannot amicably settle, same to be communicated to the Chairman or Secretary of the Board, who will arrange date of meeting and other preliminaries, the men as a body remaining at work. The finding to be communicated to both parties and to be binding on all parties and to be given within seven days of commencement.

(*b*) If the Conciliation Board cannot arrive at a satisfactory settlement, the matter to be referred to arbitration before members of an Industrial Council, which is to be a strictly non-political body, not representing Government; these arbitrators to be selected by vote among masters and men, one for each side, and an independent chairman appointed by the Industrial Council. Costs to form part of the award, and to be paid in the same way as under Conciliation Board.

Duration of arbitration to be limited, and award given in reasonable time.

In the event of legal matters arising which the arbitrators are unable to decide, power vested in them to take counsel's opinion or obtain summary jurisdiction so as to obviate loss of time.

The obtaining of summary jurisdiction would necessarily be an important principle in the proposed Bill, otherwise matters affecting the welfare of masters or men would be liable to be suspended indefinitely. The finding to be binding on both parties to the dispute.

(*c*) If (as is hardly likely) neither of the foregoing methods of procedure can succeed in providing a remedy, formal notice of cessation of work might be given by either side, such notice to be not less than four weeks, and to give fully the reasons. In this case the matters in dispute should come before a legal tribunal, and no higher authority should be permitted to be approached, and fines inflicted if the parties do not agree to resume work.

It should be provided in the proposed Bill that in businesses where contracts of some duration are usual, any increased pay awarded should, at the discretion of the Boards or arbitrators, begin with a slight increase in a month or so, such to be followed, if deemed necessary, by a further increase three or six months later so as not to press unduly upon unfinished contracts.

It should also be provided that within three months of the passing of the Act a secretary shall be appointed for each Conciliation Board, who shall have instructions laid down for his procedure, obtaining from time to time the necessary funds for the expenses of the Conciliation Board from employers and workers.

For your information I will read to you the resolution that was submitted and passed at a mass meeting of Employers' Associations at the Westminster Palace Hotel, which Mr. John Anderson and I attended as your representatives on February 18:—

That this meeting of representatives of Central Associations of Employers connected with the various industries in the United Kingdom, in view of the continued and growing menace to personal freedom, public order, and industrial peace, due to the provisions of the Trades Disputes Act, 1906, calls upon his Majesty's Government to set up an inquiry into the working and effects of the Act, and to determine:—

(1) Whether the present unlimited area in which picketing in unlimited numbers may be carried on should not be restricted and the number of pickets regulated by statute.

(2) Whether combinations for disorganising trading and social conditions should not be made unlawful; and

(3) Whether it is not of national interest that all unions should be subjected to the ordinary law of the land and made responsible, like all other classes, for their actions.

VARIETIES.

MR. JOSIAH GUNTON, F.R.I.B.A., has been invited by the Local Government Board to occupy, and has accepted, the position of chairman of the Standing Committee of the North-Eastern Section of the proposed New Arterial Roads Board, comprising part of the County of London and the counties of Essex and Middlesex.

THE Glasgow Corporation consider that the most suitable site for the proposed view tower in the Queen's Park would be midway between the flagstaff and the old camp. The city engineer has been instructed to submit an amended design showing a tower 90 ft. in height, along with an estimate of the cost.

MR. E. T. DUNN, of Ilford, has prepared plans for a new church proposed to be erected at Ilford. The first portion, for which funds are being sought, is estimated to cost £4,832. When complete the church is to accommodate 702 persons, and will involve an outlay of £9,500.

THE Kinlochleven Co-operative Society are putting forward a scheme by which it is proposed to acquire on the Kinlochmore side of the Leven about thirty acres of land forming part of the Mamore estate, and to build an average of twelve houses to the acre, or roughly 350 dwellings in all. The probable cost has been estimated approximately at £50,000. Mr. Stewart Kaye, of Dunfermline, is acting as architect.

As a result of the visits paid to the Scottish National Gallery, The Mound, Edinburgh, by Edinburgh and Leith school children, and the prizes offered by Lord Guthrie to the boy or girl selecting the ten best pictures in the British section, 5,000 papers have been sent in. These have all been adjudicated, and the result will be made known at a public meeting to be held at an early date in the Synod Hall, Edinburgh. The prizes take the form of reproductions of famous artistic masterpieces.

MR. W. S. WEATHERLEY, writing in reference to the condition of Boston "Stump," states in the *Times* that the crack is no new discovery, and has been in his knowledge for some years. The tower will be carefully watched, and whatever steps are necessary for its preservation will be taken. Sir Francis Fox's notice arose in this way. The trustees of the Wesleyan chapel near by sought advice from him upon the subsidence of their twin towers, and at his visit to Boston last month he saw the crack in the "Stump," and then most kindly called on Canon Heygate, the vicar, and made several recommendations. Repairs have been going on at the church under Mr. Weatherley's direction for some time, but no "underground" work has been so far necessary.

MESSRS. CRICKMAY & SONS, of Westminster and Weymouth, are the architects for the large church about to be erected at Easton, Isle of Portland. The work is to be carried out in three portions. The first portion will consist of the chancel, morning chapel, two bays of the nave, together with vestries, heating chamber and organ loft, and will cost £5,500. The second will comprise the two remaining bays of the nave, entrance porch and west wall, at a cost of £2,300. The last portion will be the tower at the west end, and is estimated to cost £3,000. The contract has been let to Messrs. Pittard & Sons, Langport, Somerset.

MR. R. H. BICKNELL, a Local Government Inspector, held an inquiry at the Council House, Birmingham, into the application by the City Council for sanction to borrow sums amounting to £41,260 for works of sewerage and surface water drainage, and £5,150 for the purchase of land for the extension of King's Heath Park. The City Council recently had before them the plans of a proposed development of an estate between Bristol Road and Lodge Hill Cemetery by the erection of about 1,000 houses. The Bournville Village Trust also have intimated their intention to develop an estate lying between Oak Tree Lane and Bristol Road.

MESSRS. FAREBROTHER, ELLIS & CO. will hold an important sale on Thursday afternoon next, the 30th inst., at the Mart, Tokenhouse Yard, E.C., which will be of special interest to manufacturers, building contractors, and capitalists. Lots 1 and 2 comprise a compact freehold property of about 36½ acres of chalkland adjoining the railway station, Rosherville; this is the only estate adjoining the high road between Gravesend and Northfleet remaining for building, and is in a thickly populated district. Lot 13 is a freehold building estate of 74 acres at Milton-next-Gravesend. The other lots comprise various building sites in Gravesend, Northfleet, and Rosherville.

THE
Architect and Contract Reporter.
FRIDAY, MAY 1, 1914.

EDITORIAL NOTICES.

The Editor will always be pleased to examine drawings or articles with a view to publication, but cannot be responsible for the safety of those sent, though every reasonable care will be taken. Contributors desiring payment should clearly state their wishes. No payment will be made until after publication, and a commission to prepare articles or drawings does not necessarily imply acceptance or approval.

No communication can be inserted unless authenticated by the name and address of the writer—not in every case for publication, but as a guarantee of good faith.

We have upon our staff a very eminent Barrister, who will be glad to answer in the columns of this paper any legal question that may be of interest to our readers. All letters must be addressed " Legal Adviser," Office of "The Architect," Imperial Buildings, Ludgate Circus, London, E.C.

The Editor will be glad to receive from Architects in London and the Provinces results of Competitions and Tenders and other particulars of Works in progress in which they may be interested.

TENDERS, ETC.

⁂ *As great disappointment is frequently expressed at the nonappearance of Contracts Open, Tenders, &c., it is particularly requested that information of this description be forwarded to the Office, Imperial Buildings, Ludgate Circus, London, E.C., not later than 2 P.M. on Thursdays.*

COMPETITIONS OPEN.

Chester.—The Corporation invite designs for the erection of houses for the working classes. Premiums of £50, £25, and £10 are offered. Mr. Patrick Abercrombie, M.A., will act as assessor. Deposit £1 1s. Mr. J. H. Dickson, town clerk, Town Hall, Chester.

Conway.—The Board of Guardians invite schemes, with plans, for the laying out of a plot of land near Conway for the provision of one relieving home and four cottages homes, and for laying out of the remainder of the plot for future cottage homes, recreation grounds, &c. Premiums of £10 and £5. Commission will be paid for work carried out during the first five years from date of acceptance of a scheme. Send applications to Mr. J. W. Post, clerk to the Guardians, Union Offices, Conway.

Glasgow.—The Tramways Committee of the Corporation of Glasgow invite designs for tramway shelter and convenience. Plan of ground and other particulars may be obtained from Mr. James Dalrymple, General Manager, 46 Bath Street, Glasgow.

Grimsby.—June 2.—The Building Committee of the proposed Constitutional Club invite designs for premises to be erected at the corner of Victoria Street and Upper Spring Street, at an estimated cost of £3,000. Premiums of £40, £20, and £10 are offered. Deposit of £2 2s. will be sent back on receipt of designs or on return of the particulars within 10 days. Mr. H. W. V. Sheckell, secretary, Constitutional Club, Victoria Street, Grimsby.

Hendon.—May 11.—The Education Committee will be prepared to receive competitive designs for a school at Hale Grove Gardens, Mill Hill. Conditions of competition and plan of site may be obtained from Mr. James Anderson, secretary to the committee, Council Offices, Hendon, N.W.

Hythe.—May 30.—The Town Council invite designs for a concert hall and public shelter, for which premiums of fifty, twenty-five, and ten guineas will be awarded. Deposit £1 1s. (returnable). Condition, site plan, &c., may be obtained on application to Mr. Bernard C. Drake, town clerk, Hythe, Kent. (See advertisement.)

London.—Sept. 7.—The London County Council invites designs for new public elementary schools at (1) Linda Street, York Road, Battersea, and (2) Billingsgate Street, Church Street, Greenwich, and has appointed Mr. John W. Simpson, F.R.I.B.A., 3 Verulam Buildings, Gray's Inn, W.C., to act as professional assessor and adviser. Deposit of £1 1s., payable to the Education Cashier, will be returned on receipt of a bona-fide design for either or both schools, or on the return of the particulars within one month. The Education Officer, Education Offices, Victoria Embankment, W.C. (See advertisement.)

Manchester.—May 23.—The Sanitary Committee of the Corporation invite competitive plans, specifications and estimates for semi-detached cottages on the Blackley estate. Premiums of £50 and £25 will be paid for the first and second best plans, &c., as selected. Deposit £1 1s. The Sanitary Department, Civic Buildings, Mount Street, Manchester. (See advertisement.)

Mold.—The Urban District Council invite architects to submit plans, &c., for a fire station and caretaker's house, to be erected at Earl Road. Further particulars may be obtained from Mr. D. Thomas, surveyor, Town Hall, Mold.

Middleton.—July 16.—The Corporation invite designs for a town hall proposed to be erected in Long Street at a cost of £18,000. Premiums of £100, £50, and £25 are offered. The assessor is Mr. Hastwell Grayson, F.R.I.B.A., M.A. Deposit £1 1s., which will be returned on receipt of a design. Mr. F. Entwistle, town clerk, Town Hall, Middleton.

Sunderland.—June 23.—The Borough Council invite designs for a proposed secondary school, Barnes Estate, Durham Road, to accommodate 600 boys. Premiums of £100, £50, and £25 are offered. An assessor nominated by the President of the R.I.B.A. will be appointed. Deposit of £2 2s. will be sent back on receipt of a *bonâ-fide* design or on return of the particulars within ten days. Mr. J. W. Moncur, M.I.C.E., borough engineer and surveyor, Town Hall, Sunderland.

York.—The Committee of the St. Clement's Working Men's Club offer a prize of £25 for the best plans and specifications submitted in competition for the erection of a new model club. For full particulars and conditions apply to the Secretary, 3 Queen Victoria Street, York.

CONTRACTS OPEN.

Adwick-le-Street.—May 22.—The West Riding Education Committee invite whole or separate tenders for the following works in connection with new school at Adwick-le-Street, Highfields—viz. : builder, joiner, roof tiler, plumber, plasterer, painter, ironfounder and smith, and asphalter.

(*Continued on page 15.*)

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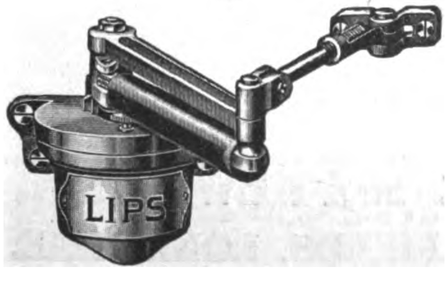

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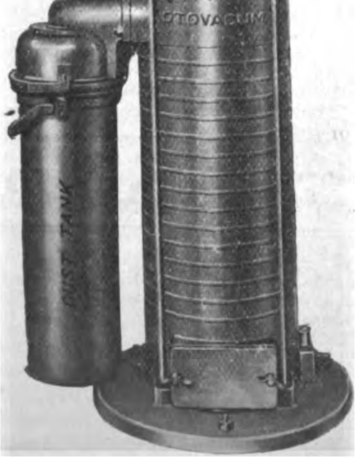

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The Education Architect, County Hall, Wakefield, and the Divisional Clerk's Office, Doncaster. Send £1 deposit in each case by separate letter to the West Riding Treasurer, County Hall, Wakefield.

Ashton-under-Lyne.—For erection of a new church. Mr. E. H. Lingen Barker, architect, 4 Moscow Court, London, W.

Bicester.—May 18.—For erection of Bicester new post office, for the Commissioners of H.M. Works and Public Buildings. Deposit £1 1*s*. The Postmaster, Bicester Post Office, and H.M. Office of Works, &c., Storey's Gate, S.W.

Bishop Auckland.—May 7.—For alterations to the porter's lodge at the workhouse, for the Guardians of the Auckland Union. Mr. Chapman, master of the workhouse, Bishop Auckland.

Blackhall Mill.—May 19.—For erection of a new school, for the Durham County Council. Mr. A. C. Wood, architect, 33 Grainger Street West, Newcastle-upon-Tyne.

Bordesley.—May 12.—For the construction of a shed at Bordesley, for the Great Western Railway Co. The Resident Engineer, Snow Hill Station, Birmingham.

Bradford.—May 5.—For erection of new cart shed at Harris Street, Staith, for the Corporation. The City Architect, Town Hall, Bradford.

Bristol.—May 8.—For additions to the infirmary buildings at Southmead, for the Guardians. Deposit £2 2*s*. Mr. W. S. Skinner, architect, 27 Orchard Street, Bristol.

Bromyard.—May 12.—For erection of a goods shed and office at Bromyard Station, Herefordshire, for the Great Western Railway Co. The G.W.R. Engineer, Gloucester Station.

Carlisle.—May 11.—For certain alterations and additions to Nos. 1 and 2 George Street, in connection with the tuberculosis dispensary and school clinic, for the Corporation. Deposit 10*s*. 6*d*. Mr. H. C. Marks, M.I.C.E., city engineer and surveyor, 36 Fisher Street, Carlisle.

Chartham Downs (near Canterbury).—May 14.—For the erection of a new bakery, new workrooms, additions to farm buildings, and other works in connection therewith at the Kent County Lunatic Asylum. Deposit £10. Mr. W. J. Jennings, architect, 4 St. Margaret's Street, Canterbury. (See advertisement.)

Cheadle.—May 7.—For erection of two cottage homes, for the Guardians. Deposit £2 2*s*. Mr. T. Bibby, P.A.S.I., architect, Cheadle.

Chester.—May 11.—Tenders are required for a triennial contract, from May 11, 1914, in the following Engineer District in the Command: Chester, barracks, &c. Address, Royal Engineer Office, Militia Barracks, Chester.

Coventry.—For erection and completion of twelve houses, St. Lawrence's Road, for the Lockhurst Lane (Foleshill) Industrial Co-operative Society, Ltd. Mr. T. R. J. Meakin, M.S.A., architect, 11 Warwick Row, Coventry.

Cressage.—May 7.—For the construction of six cottages at Cressage, Salop, for the Atcham Rural District Council. Deposit £1 1*s*. Mr. H. Asher, surveyor to the Council, 24 St. John's Hill, Shrewsbury.

Dartford.—May 6.—For erection of sorting-room to laundry at Southern Convalescent Fever Hospital, for the Metropolitan Asylums Board. Deposit £1. Mr. W. T. Hatch, M.I.C.E., M.I.Mech.E., engineer-in-chief, the Office of the Board, Embankment, E.C.

East Preston.—May 18.—For erection of a new boiler house and chimney shaft, additional water-storage tanks, and other works, at the workhouse, East Preston, near Worthing, for the Guardians of East Preston Union. Deposit £1 1*s*. Mr. A. Shelley, clerk, Town Offices, Littlehampton.

Emmaville.—May 19.—For alterations and additions at the Council school, for the Durham County Council. Mr. W. Rushworth, Shire Hall, Durham.

Frosterley.—May 19.—For alterations and additions at Frosterley South school, for the Durham County Council. Mr. W. Rushworth, Shire Hall, Durham.

Exeter.—May 5.—For certain building work, painting, and reparation, for the Guardians. Mr. R. M. Challice, architect, 14 Bedford Circus, Exeter.

Gateshead.—For extensions at the secondary school, Durham Road, for the Education Committee. Mr. W. F. Purser, architect, 10 West Street, Gateshead.

Gravesend.—May 8.—For construction of conveniences in Queen Street, for the Town Council. The Borough Surveyor's Office, Gravesend.

Guildford.—May 11.—For erection of twenty cottages in the Old Farm Road, for the Town Council. Deposit £2 2*s*. Mr. C. G. Mason, A.M.I.C.E., borough engineer, Guildford.

Harrow.—May 9.—For repairing and painting the pavilions, railings, &c., on the Harrow recreation ground, Pinner Road, for the Harrow-on-the-Hill Urban District Council. Mr. J. P. Bennetts, engineer and surveyor to the Council, Harrow.

Heckmondwike.—May 8.—For the various works (excluding slater's) required in additions to club premises, for the Working-Men's Club and Institute. Mr. H. Stead, architect, Heckmondwike.

Huddersfield.—May 5.—For the various works required to be done in erection of thirty workmen's dwellings (in five separate blocks) in Meltham Road, Lockwood, for the Corporation. Alternate tenders are required: (1) in stone; (2) in concrete. Mr. K. F. Campbell, M.I.C.E., borough engineer and surveyor, 1 Peel Street, Huddersfield.

Huddersfield.—May 13.—For the pulling down and rebuilding of the grocery, drapery, and butchering departments at Close Hill, for the Close Hill Industrial and Provident Society, Ltd. Messrs. J. Berry & Sons, architects and surveyors, 3 Market Place, Huddersfield.

Ireland.—May 6.—For the entire work embraced in erection of a retort house and coal store in concrete or stone work, including iron roof for same, building of retort settings and ironwork for same at their gasworks in Clonmel, for the Gas Committee. Deposit £1 1*s*. Mr. H. O'Connor, A.M.I.C.E., 1 Drummond Place, Edinburgh.

Ireland.—May 8.—For erection of a block of ten workmen's dwellings on Holborn Hill, Sligo. Mr. P. J. Kilgallen, architect, Abbey Ville, Sligo.

Ireland.—May 15.—For erection of a new National School at the Ennistymon Convent. Messrs. A. Scott & Son, architects, 49 Upper O'Connell Street, Dublin.

Ireland.—May 20.—For erection of an isolation hospital, &c., at Portrane branch of the Richmond District Asylum. (Mr. D. Morris, architect, Dublin.) Deposit £2 2*s*. Messrs. Morris & Kavanagh, quantity surveyors, 68 Harcourt Street, Dublin.

Ireland.—June 4.—For erection of a hotel at Rosses Point, about five miles from Sligo, for the Midland Great Western Railway of Ireland Co. Deposit £2 2*s*.

Itchen Sholing.—May 12.—For erection of a Council school for 752 children, for the Hants County Council. Deposit £2 2*s*. Mr. A. L. Roberts, architect to the Education Committee, The Castle, Winchester.

Ledbury.—May 18.—For the construction of a reinforced concrete open-air swimming bath, with dressing boxes and corrugattd iron fencing, for the Urban District Council. Deposit £1. Mr. R. G. Gurney, surveyor, Ledbury.

Leeds.—May 15.—For erection of a house and premises for the Parks Department at Roundhay, for the Parks Committee. Mr. G. F. Bowman, architect, 5 Greek Street, Leeds.

Liscard.—May 13.—For erection of central fire station, Manor Road, Liscard, for the Wallasey Town Council. Deposit £1 1*s*. The Borough Engineer and Surveyor, 18 Falkland Road, Seacombe, Wallasey.

London.—May 6.—For the following works, for the Metropolitan Asylums Board: (1) erection of milk store at Eastern Fever Hospital, Homerton Grove, Homerton, N.E.; (2) extension of engineer's workshop at South-Western Fever Hospital, Landor Road, Stockwell, S.W. Deposit £1 each contract. Mr. W. T. Hatch, M.I.C.E., M.I.Mech.E., engineer-in-chief, the Office of the Board, Embankment, E.C.

London.—May 7.—For execution of rain-water, drainage works, &c., at the infirmary, East Greenwich, for the Guardians of Greenwich Union. Deposit £2. Mr. A. Roberts, F.R.I.B.A., surveyor, 92 London Street, Greenwich.

London.—May 12.—For building a mortuary at the hospital, South Worple Way, Mortlake, S.W., for the Barnes Urban District Council. Mr. G. B. Tomes, A.M.I.C.E., surveyor, Council House, High Street, Mortlake, S.W.

Ludlow.—May 7.—For the demolition of existing buildings at Upper Galdeford, and for erection of new printing works, shops, and offices, for Mr. W. F. Marks. Deposit £1 1*s*. Mr. W. Geo. Lane, Town Hall, Ludlow.

Mexborough.—For the various trades required in erection of a ward and enlargement to the kitchen block at the Montagu Hospital. Messrs. G. Moxon & Son, architects, Central Chambers, 26 Church Street, Barnsley.

Middlesbrough.—May 14.—For the execution of ordinary works and repairs to buildings in their charge in the Middlesbrough district during three years from July 1, for the Commissioners of H.M. Works and Public Buildings. Deposit £1. H.M. Office of Works, &c., Storey's Gate, S.W.

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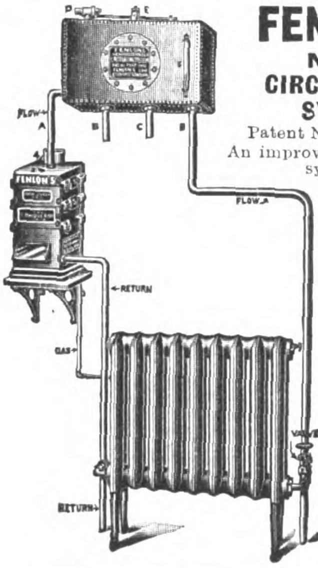

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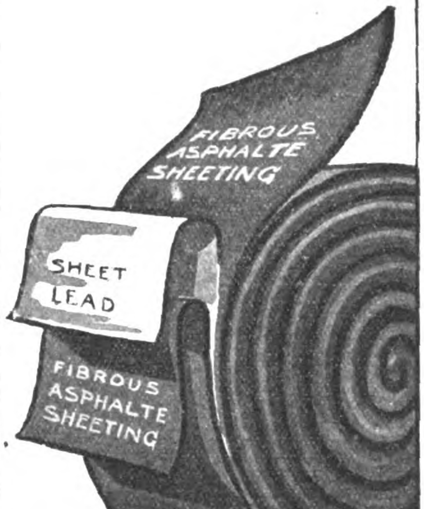

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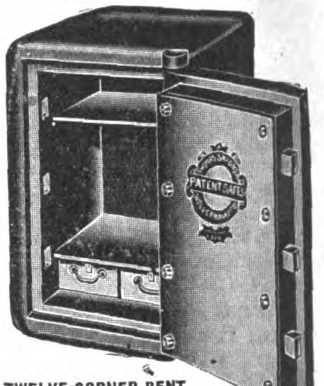

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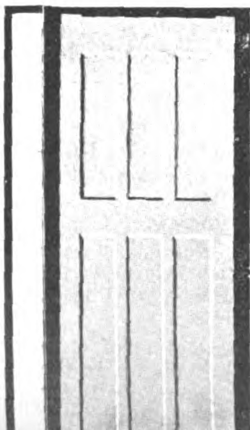

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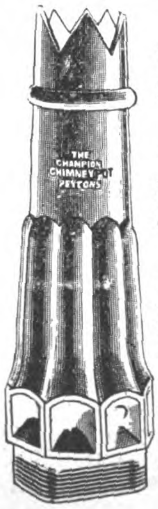
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Milnsbridge.—May 6.—For the various works required in erection of a dwelling-house and shop at Scar Lane. Messrs. Lunn & Kaye, architects and surveyors, Milnsbridge and Huddersfield.

Milton Regis.—May 6.—For the execution of painting and repairs, &c., at the Milton Regis Butts Council school, for the Kent Education Committee. Mr. J. Fitmer correspondent, Albion House, London Road, Sittingbourne, Kent.

Morley.—May 11.—For the various works required in erection of ten through houses in Rooms Lane, for Mr. H. Newell. Mr. T. A. Buttery, Licentiate R.I.B.A., architect and surveyor, Queen Street, Morley, and 1 Basinghall Square, Leeds.

Nanpean.—May 9.—For erecting new offices, boundary walls, and enlargements to playgrounds at the Nanpean Council school, for the Cornwall Education Committee. Mr. B. C. Andrew, architect to the committee, Biddick's Court, St. Austell.

Newbottle.—May 19.—For alterations and additions at the Council school, for the Durham County Council. Mr. W. Rushworth, Shire Hall, Durham.

New Seaham.—May 11.—For erection of twelve houses, for the Durham Aged Mineworkers' Association. Mr. J. W. Claxton, M.S.A., architect, Londonderry Offices, Seaham Harbour.

Oakdale Village.—May 6.—For erection of sixteen or more semi-detached cottages at Oakdale Village, Mon., for the Ivy Building Club. Mr. A. F. Webb, M.S.A., architect and surveyor, Tredegar Chambers, Blackwood, Mon.

Okehampton.—May 25.—For building a police station at Okehampton, for the Standing Joint Committee of the County of Devon. Deposit £3 3*s.* Mr. E. H. Harbottle, county architect, County Chambers, Exeter.

Pengam.—May 9.—For erection of 360 dwelling-houses and the construction of roads and lanes for same at Pengam, for the Powell Duffryn Steam Coal Co., Ltd. Mr. G. Kenshole, M.S.A., Station Road, Bargoed.

Pudsey.—May 6.—For the several works required in erection of a spinning shed and engine house at Crawshaw Mills, for Messrs. Rd. Ingham & Co., Ltd. Forward names by May 6 to Messrs. C. F. L. Horsfall & Son, architects, Lord Street Chambers, Halifax.

Rawtenstall.—May 6.—For the whole of the work dequired in the construction and erection of eight almshouses in Haslingden New Road, for the Richard Whitaker Charity Administration Board. Forward names and £2 2*s.* deposit by May 6 to Mr. J. Johnson, Town Hall, Rawtenstall.

St. Austell.—May 9.—For erection of a handicraft and cookery centre at the Central Council schools, West Hill, for the Cornwall Education Committee. Deposit £1 1*s.* Mr. B. C. Andrew, architect, Biddicks Court, St. Austell.

Salendine Nook (Huddersfield).—May 6.—For erection of two dwelling-houses at Salendine Nook. Messrs. J. Berry & Sons, architects and surveyors, 3 Market Place, Huddersfield.

Scotland.—For the expeditious construction of a large paper warehouse (reinforced concrete), being the first of a series at Stoneywood Works, Bucksburn, Aberdeenshire, for Messrs. Alex. Pirie & Sons, Ltd. Messrs. Jenkins & Marr, civil engineers and architects, 16 Bridge Street, Aberdeen.

Scotland.—May 4.—For the mason, carpenter, slater, plumber, plaster, painter, and glazier works of dwelling-house to be erected at Duguid Street, Buckie, for Mr. George McKenzie. Mr. W. Hendry, architect, 91 West Church Street, Buckie.

Scotland.—May 4.—For mason, carpenter, slater, plumber, plasterer, and painter work of proposed additions and alterations to the Fishermen's Hall, Buckie. Mr. J. Dawson, builder, Buckie.

Scotland.—May 6.—For mason, joiner, plaster, plumber, slater, glazier, smith, asphalt, tile, painter, heating and ventilating work of proposed infants' school, College Street, Buckhaven, for the Wemyss School Board. Deposit 10*s.* 6*d.* Mr. G. C. Campbell, architect and ord. surveyor, Methil.

Scotland.—May 9.—For the following works in connection with erection of new supplementary class-room for cookery and manual instruction at Breconbeds school, for the Annan School Board—viz.: mason, joiner, plasterer, slater, and plumber. Mr. J. Roddick, writer, Annan.

Scotland.—May 9.—For the several works required in connection with the erection of a caretaker's box and water closets at Albert Street playground, Govan, for the Glasgow Corporation. The Office of Public Works, City Chambers, 64 Cochrane Street, Glasgow.

Scotland.—May 9.—For the following works required in connection with the proposed erection of tenements at Kennyhill—viz.: (1) mason and brick works; (2) joiner work; (3) plumber work; (4) plaster work; (5) slater work; and (6) painter work—for the Glasgow Corporation. The Office of Public Works, Cochrane Street, Glasgow.

Scotland.—May 11.—For mason, carpenter, slater, plasterer, plumber, and painter and glazier work of a house for the brewer, to be erected at Milton Distillery, Keith. Mr. F. D. Robertson, architect, Keith.

Scotland.—May 13.—For erection of Glasgow South Side telephone exchange, for the Commissioners of H.M. Works and Public Buildings. Tenders are required for the whole work and not for separate trades. Deposit £1 1*s.* The Clerk of Works, H.M. Office of Works, G.P.O., Glasgow, and H.M. Office of Works, 3 Parliament Square, Edinburgh.

Shrewsbury.—May 11.—For erection of boundary walls and wrought-iron fences, &c., required in enclosing an extension of the borough cemetery, for the Corporation. Mr. A. W. Ward, A.M.I.C.E., borough surveyor, Shrewsbury.

Sidcup.—May 5.—For erection of Council offices at Sidcup, for the Foots Cray Urban District Council. Deposit £2 2*s.* Mr. W. A. Farnham, A.M.I.C.E.I., F.S.I., surveyor, Council Offices, Sidcup.

Southall.—May 12.—For erection of a goods office at Southall Station, Middlesex, for the Great Western Railway Co. The G.W.R. Engineer, Paddington Station, London.

Stannington.—For the various works required in adaptation of boys' holiday home at Stannington for sanatorium purposes. Mr. D. M. Spence, architect and surveyor, 50 Grainger Street, Newcastle-on-Tyne.

Swanage.—May 4.—For alterations and additions to Herston schools, Swanage, Dorset. Messrs. Clifton & Robinson, architects, Northbrook, Swanage.

Telscombe Cliffs.—For the building of a dwelling-house, with outhouses, as per specifications and drawings, at Telscombe Cliffs, Sussex. Deposit 10*s.* Mr. F. White, Waratah, Monkhams Drive, Woodford, Essex.

Tewkesbury.—May 12.—For rebuilding premises for the Gloucester Co-operative and Industrial Society, Ltd. Deposit £1 1*s.* Mr. T. Malvern, Licentiate R.I.B.A., architect, 21 Winchcombe Street, Cheltenham.

Tudhoe Colliery.—May 19.—For alterations and additions at the Council school, for the Durham County Council. Mr. N. Richley, Shire Hall, Durham.

Wales.—For construction of a goods depôt at Cockett, Glam., for the Great Western Railway Co. The G.W.R. Engineer, Neath Station.

Wales.—May 6.—For levelling the ground and the erection of retaining and boundary walls of a site adjoining Bridgend police station, for the Standing Joint Committee of the Glamorgan Quarter Sessions and County Council. The Bridgend Police Station, and the Glamorgan County Hall, Cardiff.

Wales.—May 6.—For alterations and renovations to the old athletic club, Miskin, Mountain Ash, for Mr. H. S. Berry. Messrs. Johnson & Richards, architects, Merthyr Tydfil.

Wales.—May 6.—For erection of stables, coach-house, &c., at Brynmawr, for Messrs. A. Buchan & Co., Rhymney. The Castle Hotel, Brynmawr, or Mr. T. Roderick, architect, Ashbrook House, Aberdare.

Wales.—May 6.—For the reroofing of a Dutch barn at Angelton Asylum, near Bridgend, Glam., for the Committee of Visitors of the Glamorgan County Asylum. Mr. W. E. R. Allen, clerk to the Committee of Visitors, Glamorgan County Hall, Cathays Park, Cardiff.

Wales.—May 7.—For erection of two shops and dwellings at Llantwit, Llantwit Fardre. Messrs. A. Ll. Thomas & G. S. Morgan, architects and surveyors, 23 Gelliwastad Road, Pontypridd.

Wales.—May 7.—For carrying out certain alterations and repairs, including reseating, &c., of their chapel, for the Trustees of the English Presbyterian Church, Castle Caereinion. Mr. T. Jones, Dolarddyn, Castle Caereinion, Welshpool.

Wales.—May 11.—For erection of thirty houses at Bryncethin, for the Bryncethin Building Club. Mr. J. T. Jenkins, M.S.A., architect and surveyor, Porth, Glam.

Wales.—May 11.—For erection of a billiard room and other additions to the Dunraven Constitutional Club, Field Street, Penygraig. Mr. T. Llewellyn, secretary.

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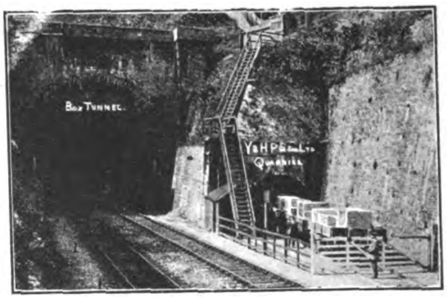

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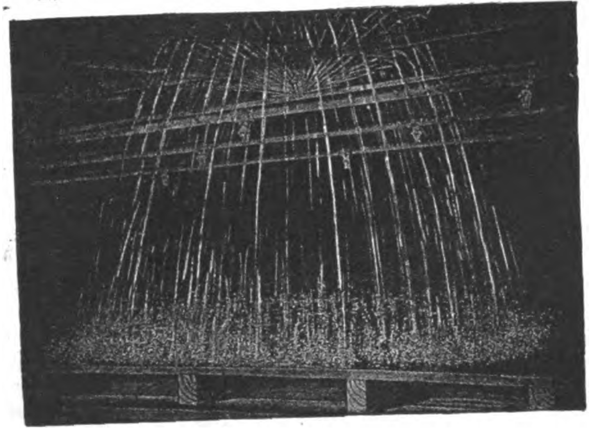

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WALES.—May 14.—For the execution of ordinary works and repairs to buildings in their charge in the Swansea district during three years from July 1, for the Commissioners of H.M. Works and Public Buildings. Deposit £1. H.M. Office of Works, &c., Storey's Gate, S.W.

WHITCHURCH (HANTS).—May 4.—For certain work at their workhouse, involving the conversion, alteration, and provision of a nurses' room and lying-in ward, for the Guardians. Mr. J. T. P. Clarke, clerk, Union Offices, Church Street, Whitchurch.

WORKSOP.—May 8.—For the following works required in alterations to premises, Lowtown Street, Worksop, for the Committee of the Worksop Co-operative Society, Ltd.: (1) excavator, bricklayer, mason, carpenter, and joiner; (2) plumber, glazier, and ironfounder; (3) painter. Deposit 10*s*. Mr. D. B. Thompson, architect, 73 Bridge Street, Worksop.

WREXHAM.—May 6.—For erection of a residence at Kings Mills. Mr. F. A. Bevan, architect, Queen Street, Wrexham.

TENDERS.

BATH.

For carrying out the Monkton Combe sewerage scheme, for the Bath Rural District Council.

FIRTH & Co., Derby (*accepted*)	£19,172	0	0

BROMLEY.

For drainage work at the Workhouse, for the Guardians.

Prestige & Co.	£2,990	0	0
Lown & Co.	2,980	0	0
Lawrence & Son	2,884	0	0
Elliman	2,871	0	0
Marsland & Sons	2,770	0	0
Graham & Co.	2,653	0	0
J. L. WOODHAMS & SONS, Bromley (*accepted*)	2,197	0	0

CORBY.

For the erection of a house at Corby, near Grantham. Mr. R. WADSLEY, architect, Billingborough.

Colishaw Bros.	£734	0	0
Porter	730	0	0
Parks & Son	710	0	0
Howes	695	10	0
HARWOOD, Corby (*accepted*)	670	0	0
Read	649	0	0

COVENTRY.

For installing electric light in the old infirmary block, balconies and verandahs.

	Scheme No. 1.			Scheme No. 2.		
Burbury & Co.	£144	0	0	£350	17	6
Reynolds & Co.	120	0	0	316	0	0
LEE, BEESLEY & Co.	148	6	6	*252	10	0
Brown & Co.	96	11	0	223	18	0

* *Accepted.*

DURHAM.

For carrying out the Ludworth sewerage and sewage disposal works, for the Durham Rural District Council.

Carrick	£2,385	4	2
R. OLIVER, Gilesgate Moor (*accepted*)	1,789	8	9

FELIXSTOWE.

For alterations and extensions to the electric lighting station, Highfield Road, for the Felixstowe and Walton Urban District Council. Mr. H. CLEGG, A.M.I.C.E., surveyor, Felixstowe.

Andrews	£395	0	0
H. J. LINZELL, Felixstowe (*accepted*)	369	0	0

GRASSMOOR.

For the erection of Primitive Methodist schools at Grassmoor, near Chesterfield. Mr. T. WILCOCKSON, architect, Chesterfield. Quantities by the Architect.

N. GRAINGER, Chesterfield (*accepted*)	£1,478	0	0

SHERBURN.

For alterations and additions to the master's house, for the Governors of Sherburn Hospital. Messrs. J. POTTS & SON, architects, Newcastle.

Kerrison	£830	12	6
Gradon & Son	806	3	0
Coates, jun.	786	19	0
Whittingham & Son	757	0	0
BEEVERS & CLARK, Durham (*accepted*)	650	5	6

TRIMDON GRANGE.

For the erection of ten cottages at Trimdon Grange Colliery, for the Durham Aged Mineworkers' Homes Association.

Sourby	£1,800	0	0
Bell	1,790	0	0
Thompson	1,723	0	0
Oliver	1,550	0	0
REGAN BROS., Old Trimdon (*accepted*)	1,450	0	0
Fisk	1,386	0	0
Wilkinson	1,370	0	0

WHEATLEY HILL.

For alterations and additions to the Templars' Hall, Wheatley Hill, county Durham. Mr. J. WILSON HAYS, architect, Wingate, county Durham.

Moore	£1,185	0	0
Clerey & Charlton	1,180	0	0
Pearson & Co.	1,142	0	0
Sowerby	1,120	0	0
Potter	1,100	0	0
Morris	1,085	4	6
T. SCULLY (*provisionally accepted*)	879	10	0

WOLVERHAMPTON.

For extensions to buildings at Commercial Road Station, for the Corporation.

T. & S. HAM, Wolverhampton (*accepted*)	£2,595	0	0

For supply of steelwork and bunkers for boiler-house extension at electric generating station, for the Corporation.

W. HAYWARD & SONS, Wolverhampton (*accepted*)	£1,012	0	0

WOLVERTON.

For enlargement of Wolverton County Secondary School so as to provide rooms for manual instruction, cookery, physical exercises, staff, &c., for the Bucks Education Committee.

Hawkin	£1,885	0	0
Green	1,856	0	0
Henson & Son	1,855	0	0
Hickman & Sons	1,835	0	0
Webster & Cannon	1,798	0	0
E. ARCHER & SONS, Ltd., Northampton (*accepted*)	1,685	0	0

WREXHAM.

For the construction of the base and erection of bandstand at the Parciau, for the Corporation. Mr. J. ENGLAND, borough engineer, Wrexham.

Base of Bandstand.

Wooley	£175	10	0
H. A. JONES, Wrexham (*accepted*)	157	10	0

Erection of Bandstand.

HILL & SMITH, Brierley Hill (*accepted*)	£182	15	0

THE LONDON AND LANCASHIRE FIRE INSURANCE COMPANY, LTD.

THE fifty-second ordinary general meeting of the above Company was held at Liverpool on Wednesday, April 29. The following are the principal points in the annual report:—

The fire premiums are £1,713,442, being an increase of £68,185 over 1912; the surplus is £261,205, and, after providing 40 per cent. for the increased liability, the profit is £233,930. The accident premiums are £683,398, being an increase of £103,829 over 1912; the surplus is £111,530, and, after providing 40 per cent. for the increased liability, the profit is £69,997. The marine premiums are £218,370, being an increase of £7,493 over 1912; the surplus is £50,271, and, after providing 40 per cent. for the increased liability, the profit is £47,374. Interest on investments has further yielded £113,670, as against £107,216 in 1912.

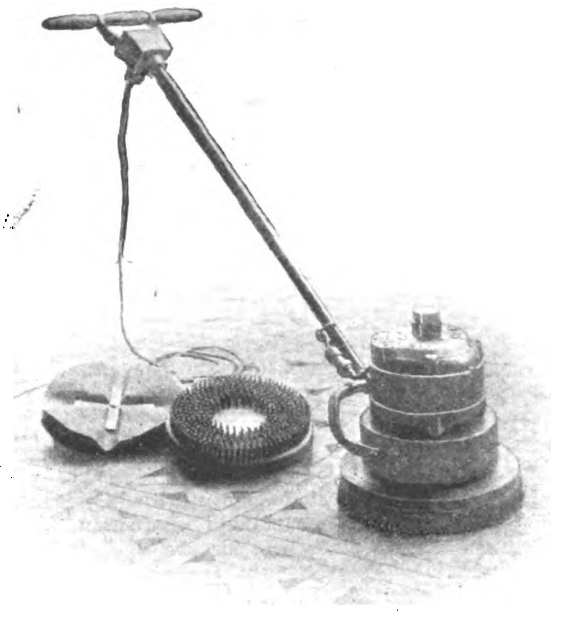
After (*a*) providing £43,500 for the cost of businesses acquired; (*b*) writing off the sum of £86,000 from the Company's investments; (*c*) transferring £10,000 to the Staff Pension Fund; and (*d*) providing for the increased dividend for the year of 27*s*. per share, less income-tax, as against 25*s*. last year, there is a net addition to the funds of the Company of £268,743. The reserve funds, beyond capital, now amount to £3,286,043.

THE Durham Aged Mineworkers' Association propose the erection of 217 additional homes in different parts of the county.

FLOOR FINISHING BY ELECTRIC MACHINE.

THE illustration shown is one of the new models of the electric Rotary floor machine, a portable machine for every description of floor work—surfacing, preparing and finishing, polishing, grinding, &c., to wood, composition, or stone floors, or the re-finishing of old parquetry.

The machine is self-contained with small motor, and is operated by connecting to the ordinary electric-lighting installation. There are several different attachments, including various brushes, polishing pads, sand-paper discs, carborundum stones, &c. These can be instantly fixed to the revolving base.



This appliance has been used with very considerable success for a variety of purposes.

It is important to note that Surfacing Machinery, Ltd., the makers of the electric Rotary floor machine, 118 City Road, London, E.C., are prepared to submit estimates for every description of floor work, and experienced men can be sent to any part of the country at short notice. In addition to the entire finishing or re-finishing in connection with new or old flooring, contracts can be made for the periodical polishing or cleaning in hospitals, public buildings, ball-rooms, and other institutions where there are large floor areas.

VARIETIES.

MR. ERNEST G. THEAKSTON, F.R.I.B.A., has removed to Wendover, Bucks. His London address will be as before, 36 King Street, E.C.

BERWICK Town Council have instructed Messrs. Leslie & Reid, engineers, of Edinburgh, to prepare a report as to the augmentation of the water supply at a fee of 100 guineas.

A LOCAL GOVERNMENT BOARD inquiry was held at Liverpool this week into the Corporation's application for sanction to borrow £34,500 in connection with their housing policy.

THE Castlederg (Ireland) Rural District Council have accepted the tender of Mr. John J. Laughlin, Castlederg, for the erection of twelve labourers' cottages, at prices ranging from £127 to £129 each.

IN response to the appeal of the Dean and Chapter of Chester Cathedral for £14,000 to complete the work of restoring the cloister building and refectory, sums amounting to £4,861 have now been promised. The Duke of Westminster has subscribed £250.

THE Barnstaple Town Council on Monday last agreed to ask the Devon County Council to allow their architect, Mr. P. Morris, A.R.I.B.A., to prepare plans for the Science and Art Schools proposed to be erected at a cost of £10,000.

MR. F. E. L. HARRIS, architect to the Co-operative Wholesale Society, Ltd., of Manchester, has submitted plans to the Reading Town Council of their proposed jam factory on land near to the Coley branch railway. The probable cost of the buildings alone will be about £55,000.

THE Paris Chamber of Commerce have opened an important competition among French architects for the reconstruction of their premises at 2 Place de la Bourse, designs for which must be sent in by June 13. The premiums offered are £1,200, £800, £600, £400 and £200.

AT the quarterly Court of the Plumbers' Company at Guildhall the Honorary Freedom of the Company was conferred for merit upon the following plumbers: Arthur Butterworth, teacher of plumbing at the Technical School, Bradford; Henry H. Clay, sanitary inspector to Marylebone Borough Council; and William Jarvis, winner of the special prize for Plumbers' Company indentured apprentices.

THE Chartered Surveyors' Golfing Society will hold, by permission of the Bramshot Golf Club, a one-day competition on that club's course, on Wednesday, May 6. The station is Fleet (L. and S.W. Railway), where cabs may be obtained, about three-quarters of a mile from the course. There is also a halt at the club-house, and the train leaving Waterloo at 9.25 will stop there. In the morning a bogey competition will be played under handicap (optional sweep 2*s.*). In the afternoon a stroke competition under handicap (optional sweep 2*s.*). A prize will be given for the best net return.

THE preliminaries for the erection by the Sutton Bequest trustees of houses for the working classes in Newcastle are now completed, and the scheme will be carried through without delay. The site has a frontage to Barrack Road, and an area of about 2¼ acres. It is proposed to erect about 130 self-contained tenements arranged in nine blocks. The tenements are to be chiefly of two and three rooms, having sculleries, baths, &c. Mr. Charles S. Errington, A.R.I.B.A., of Newcastle, has been appointed architect. The preliminary plans were presented to the Town Improvement Committee in August last, and were approved. Detailed plans are now in course of preparation.

AT Colwyn Bay last week, Mr. H. S. Stewart conducted a Local Government Board inquiry into the District Council's scheme for the provision of workmen's dwellings. Sir G. Everard Cayley, Bart., whose estate is being developed, has agreed to sell to the authority six acres of land at a nominal price. The Council are propounding a self-supporting garden village scheme, which includes twenty-eight houses at a weekly rental of 4*s.* 6*d.*, forty-four at 5*s.* 6*d.*, and sixteen at 6*s.* 6*d.*, the total of eighty-eight costing £18,700. In none of the houses, however, is provision made for a bath. This is due partly to the necessity for economy, and partly to the engineer's experience that in housing schemes the baths are misused.

THE Corporation of London has granted the use of the large building at London Bridge, formerly occupied by the Pearl Life Office, for a display of water fittings and ancient and modern appliances connected with the water supply of London. The building is shortly to be demolished, and the Corporation at the moment has possession. The premises are practically on the site of the "Water House" from which the City was partially supplied down to the time of James I. The Metropolitan Water Board, the Incorporated Joint Committee on Water Regulations, the Plumbers' Company, and the Sanitary Inspectors' Examination Board will take part in the exhibition. In addition, a loan collection from the Continent is to be secured.

LONDON BUILDING DISPUTE.

THE organised building trade workers of London have rejected the proposals of the National Conciliation Board for settling the present dispute by an overwhelming majority, the result of the voting being:—For the proposals, 2,021; against, 23,481; majority against, 21,460.

Following a special meeting of the Management Committees of the trades unions concerned in the building dispute, at St. Bride's Institute, on Wednesday afternoon, the following statement was issued: "At a meeting of the whole of the committees of the Societies affiliated to the London Building Industries Federation the result of the ballot on the questions submitted to the men was made known. It was found that there were 2,021 in favour of accepting the recommendations of the National Conciliation Board and 23,481 against. The result of this ballot will be sent on to the Board, when we shall inform them that we are quite willing to avail ourselves of the good services of the Board, if any further improvement can be effected in the rejected recommendations, and we shall also express to the Board our desire to meet the London Master Builders' Association with a view to settling the dispute."

THE
Architect and Contract Reporter.
FRIDAY, MAY 8, 1914.

EDITORIAL NOTICES.

The Editor will always be pleased to examine drawings or articles with a view to publication, but cannot be responsible for the safety of those sent, though every reasonable care will be taken. Contributors desiring payment should clearly state their wishes. No payment will be made until after publication, and a commission to prepare articles or drawings does not necessarily imply acceptance or approval.

No communication can be inserted unless authenticated by the name and address of the writer—not in every case for publication, but as a guarantee of good faith.

We have upon our staff a very eminent Barrister, who will be glad to answer in the columns of this paper any legal question that may be of interest to our readers. All letters must be addressed "Legal Adviser," Office of "The Architect," Imperial Buildings, Ludgate Circus, London, E.C.

The Editor will be glad to receive from Architects in London and the Provinces results of Competitions and Tenders and other particulars of Works in progress in which they may be interested.

TENDERS, ETC.

⁂ *As great disappointment is frequently expressed at the nonappearance of Contracts Open, Tenders, &c., it is particularly requested that information of this description be forwarded to the Office, Imperial Buildings, Ludgate Circus, London, E.C., not later than 2 P.M. on Thursdays.*

COMPETITIONS OPEN.

CHESTER.—The Corporation invite designs for the erection of houses for the working classes. Premiums of £50, £25, and £10 are offered. Mr. Patrick Abercrombie, M.A., will act as assessor. Deposit £1 1*s*. Mr. J. H. Dickson, town clerk, Town Hall, Chester.

CONWAY.—The Board of Guardians invite schemes, with plans, for the laying out of a plot of land near Conway for the provision of one relieving home and four cottages homes, and for laying out of the remainder of the plot for future cottage homes, recreation grounds, &c. Premiums of £10 and £5. Commission will be paid for work carried out during the first five years from date of acceptance of a scheme. Send applications to Mr. J. W. Post, clerk to the Guardians, Union Offices, Conway.

GLASGOW.—The Tramways Committee of the Corporation of Glasgow invite designs for tramway shelter and convenience. Plan of ground and other particulars may be obtained from Mr. James Dalrymple, General Manager, 46 Bath Street, Glasgow.

GRIMSBY.—June 2.—The Building Committee of the proposed Constitutional Club invite designs for premises to be erected at the corner of Victoria Street and Upper Spring Street, at an estimated cost of £3,000. Premiums of £40, £20, and £10 are offered. Deposit of £2 2s. will be sent back on receipt of designs or on return of the particulars within 10 days. Mr. H. W. V. Sheckell, secretary, Con-

HYTHE.—May 30.—The Town Council invite designs for a concert hall and public shelter, for which premiums of fifty, twenty-five, and ten guineas will be awarded. Deposit £1 1*s*. (returnable). Condition, site plan, &c., may be obtained on application to Mr. Bernard C. Drake, town clerk, Hythe, Kent. (See advertisement.)

LONDON.—Sept. 7.—The London County Council invites designs for new public elementary schools at (1) Linda Street, York Road, Battersea, and (2) Billingsgate Street, Church Street, Greenwich, and has appointed Mr. John W. Simpson, F.R.I.B.A., 3 Verulam Buildings, Gray's Inn, W.C., to act as professional assessor and adviser. Deposit of £1 1*s*., payable to the Education Cashier, will be returned on receipt of a bona-fide design for either or both schools, or on the return of the particulars within one month. The Education Officer, Education Offices, Victoria Embankment, W.C. (See advertisement.)

MANCHESTER.—May 23.—The Sanitary Committee of the Corporation invite competitive plans, specifications and estimates for semi-detached cottages on the Blackley estate. Premiums of £50 and £25 will be paid for the first and second best plans, &c., as selected. Deposit £1 1*s*. The Sanitary Department, Civic Buildings, Mount Street, Manchester. (See advertisement.)

MIDDLETON.—July 16.—The Corporation invite designs for a town hall proposed to be erected in Long Street at a cost of £18,000. Premiums of £100, £50, and £25 are offered. The assessor is Mr. Hastwell Grayson, F.R.I.B.A., M.A. Deposit £1 1*s*., which will be returned on receipt of a design. Mr. F. Entwistle, town clerk, Town Hall, Middleton.

SUNDERLAND.—June 23.—The Borough Council invite designs for a proposed secondary school, Barnes Estate, Durham Road, to accommodate 600 boys. Premiums of £100, £50, and £25 are offered. An assessor nominated by the President of the R.I.B.A. will be appointed. Deposit of £2 2*s*. will be sent back on receipt of a *bonâ-fide* design or on return of the particulars within ten days. Mr. J. W. Moncur, M.I.C.E., borough engineer and surveyor, Town Hall, Sunderland.

YORK.—The Committee of the St. Clement's Working Men's Club offer a prize of £25 for the best plans and specifications submitted in competition for the erection of a new model club. For full particulars and conditions apply to the Secretary, 3 Queen Victoria Street, York.

CONTRACTS OPEN.

ACCRINGTON.—May 16.—For the several works required in the enlargement of the present weaving shed and alterations to the main building, including the provision of a new staircase at the technical school, for the Education Committee. Mr. W. J. Newton, M.S.A., A.M.I.C.E., architect, Town Hall, Accrington.

ANDOVER.—May 23.—For the following works, for the Corporation—viz., repairs to cemetery chapel and lodge, repairs to Corporation property in Winchester Street, and for small pipe and sundry water fittings. Mr. R. W. Knapp, borough surveyor, Town Hall, Andover.

BARNET.—May 13.—For erection of a home for infants at Wellhouse Lane, Barnet, for the Guardians. Deposit £1 1*s*. Messrs. Williams & Cox, architects, 34 Henrietta Street, Covent Garden, W.C.

(*Continued on page* 15.)

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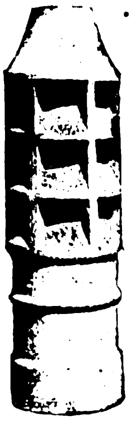

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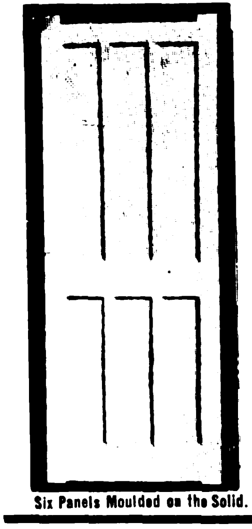

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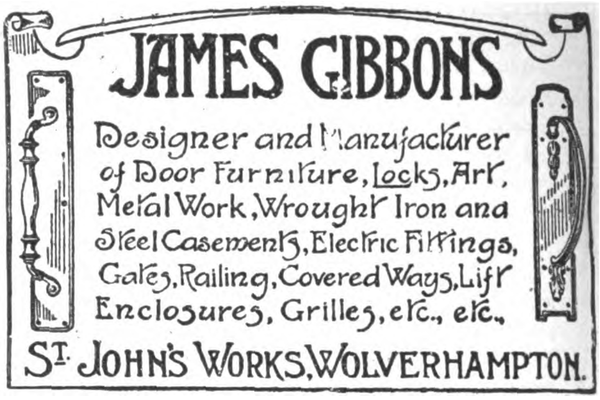

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Bedlington.—May 16.—For erection of additional classrooms at Cambois Council School. Send applications by May 16 to Mr. C. Williams, secretary to the Northumberland Education Committee, the Moothall, Newcastle-on-Tyne.

Bedwas.—May 11.—For rebuilding the White Hart Inn, Bedwas, for Messrs. Lloyd & Yorath, Ltd. Deposit £2 2*s*. Mr. H. J. Griggs, A.R.I.B.A., architect, Metropolitan Bank Chambers, Newport, Mon.

Brighton.—May 18.—For erection of a department for infants at the Coombe Road Council School. The Education Committee Offices, 64 Old Steine, Brighton.

Bury.—May 20.—For supply of floor girders, stanchions, staircase, and chequered plates at the electricity generating station, Chamber Hall, for the Electricity Committee. The Borough Engineer, Bank Street, Bury, Lancs.

Castleford.—May 9.—For two villas in Smawthorne Lane, for Mr. F. Dewsbury. Forward names by May 9 to Messrs. Holt and Shephard, architects, 91 Carlton Street, Castleford.

Chartham Downs (near Canterbury).—May 14.—For the erection of a new bakery, new workrooms, additions to farm buildings, and other works in connection therewith at the Kent County Lunatic Asylum. Deposit £10. Mr. W. J. Jennings, architect, 4 St. Margaret's Street, Canterbury. (See advertisement.)

Chelmorton.—For erection of cottages at Chelmorton, Buxton, for the Misses Simpson. Mr. G. E. Garlick, architect and surveyor, Quadrant Chambers, Buxton.

Cheltenham.—May 9.—For building alterations at Nos. 22-26 Promenade, to convert the same into municipal offices, for the Corporation. Send applications and £2 2*s*. deposit by May 9 to the Town Clerk, Municipal Offices, Cheltenham. Messrs. Healing & Overbury, architects, Lloyds Bank Chambers, Cheltenham.

Chester.—May 16.—For alterations and additions to Bache Hall as a nurses' home, for the Visitors of the Upton Asylum. Deposit £1. Mr. H. Beswick, F.R.I.B.A., county architect, Newgate Street, Chester.

Chorley.—May 11.—For alterations and renovation at the new Council chamber and offices in High Street, for the Rural District Council. Mr. A. Jolly, surveyor, High Street, Chorley.

Chorley.—May 14.—For erection of a house in Windsor Road, for Mr. S. H. Sagar. Deposit 10*s*. 6*d*. Mr. W. H. Dinsley, architect, 12 Cleveland Street, Chorley.

Clacton-on-Sea.—For erection and completion of a bungalow, for Mr. J. A. W. Josselyn. Mr. J. W. Start, F.S.I., architect and surveyor, Colchester.

Coventry.—For alterations and additions to premises, 14 Bishop Street, for Messrs. H. W. Barford & Co. Mr. H. W. Chattaway, architect, Trinity Churchyard, Coventry.

Cudworth.—For various works required in erection of the Cudworth Hotel, Pontefract Road, Cudworth, near Barnsley, for Messrs. Whitworth, Son & Nephew, Ltd. Messrs. Crawshaw & Wilkinson, architects, 13 Regent Street, Barnsley.

Earby.—May 16.—The West Riding Standing Joint Committee invite whole or separate tenders for the following works in proposed police station and constables' houses at Earby, near Skipton—viz.: Builder, carpenter and joiner, slater, plumber, plasterer, painter, asphalter. Mr. P. O. Platts, West Riding Architect, County Hall, Wakefield. Send £1 deposit to the West Riding Treasurer, County Hall, Wakefield.

Eastbourne.—May 14.—For erection of a nurses' home, maternity wards, &c., in the grounds of the workhouse at Eastbourne, for the Guardians. Deposit £1 1*s*. Mr. F. G. Cooke, A.M.I.C.E., architect to the Board, 2 Hyde Gardens, Eastbourne.

East Preston.—May 18.—For erection of a new boiler house and chimney shaft, additional water-storage tanks, and other works, at the workhouse, East Preston, near Worthing, for the Guardians of East Preston Union. Deposit £1 1*s*. Mr. A. Shelley, clerk, Town Offices, Littlehampton.

Fishtoft.—May 13.—For erection of five houses, four sets of farm buildings, and alterations and additions to existing house and buildings at Marsh Farm, Fishtoft, four miles from Boston, for the Small Holdings Committee of the Holland (Lincolnshire) County Council. Mr. B. J. A. Christie, county land agent, Sessions House, Boston.

Gateshead.—May 19.—For erection of offices for yardmaster at Gateshead, for the North-Eastern Railway (whole tenders only). Mr. W. Bell, architect, Irving House, Westgate Road, Newcastle-on-Tyne.

Huddersfield.—May 11.—For any of the various works required in the erection of dwelling-house, Mount, in Coal Pit Lane. Send application by May 11 to Messrs. J. H. Hall & Son, architects, Exchange, Huddersfield.

Huddersfield.—May 14.—For the whole or any of the work required in rebuilding Paddock Wesleyan Church. Mr. W. Cooper, F.R.I.B.A., architect, 4 Kirkgate Buildings, Huddersfield.

Hungerford.—May 18.—For erection of eight artisans' dwellings, for the Rural District Council. Mr. W. Stephenson Raine, M.I.M.C.E., surveyor, Hungerford.

Ireland.—For the erection of a hall and cinematograph theatre at Port Erin. Messrs. Rigby & Heslop, architects, Port St. Mary.

Ireland.—May 14.—For erection of a dwelling-house, for Mr. T. Fox, Ballyhea, Charleville, County Cork. Mr. S. F. Hynes, F.R.I.B.A., architect, South Mall, Cork.

Ireland.—May 15.—For erection of a convenience at Laganbank Road, and improvements to sanitary accommodation in shops, Oxford Street, for the Belfast Market Committee. The City Surveyor, Belfast.

Ireland.—May 18.—For (1) reconstruction of part of the Old Bridewell technical school, Baltinglass, and additions to same, and (2) building of technical schools at Arklow, for the County Wicklow Joint Technical Instruction Committee. Deposit £1 1*s*. in each case. Mr. R. Wake, architect, The Mall, Wicklow.

Ireland.—May 18.—For alterations and additions to their stationmaster's house at Bundoran Junction, for the Great Northern Railway Company (Ireland). Deposit 10*s*. The Engineer's Offices at Dublin and Belfast.

Ireland.—May 25.—For erection of (*a*) 113 three-room two-storey cottages at the "Oblate Site," Inchicore; (*b*) four blocks of flats, two storeys high, containing in all sixteen two-room dwellings, facing a proposed extension of St. Paul Street; (*c*) eight four-room houses, two storeys high, facing Blackhall Place, and forming a continuation of the present Corporation dwellings in Blackhall Place, for the Housing Committee of the Dublin Corporation. Separate tenders must be submitted for the buildings on the two sites—namely, (1) (*a*) Dwellings at Inchicore; (2) (*b* and *c*) Dwellings in St. Paul Street and Blackhall Place. Deposit £2. The City Architect, Municipal Buildings, Cork Hill, Dublin.

Irlam.—May 27.—For the building of 154 houses on three sites as follows: Eighty-four houses on site No. 1; fifty-two on site No. 2; and eighteen on site No. 3, for the Urban District Council. The contractor must quote for the whole of the houses on any one or more of the sites. Send applications and £5 5*s*. deposit by May 16 to Mr. R. H. Winterbottom, surveyor, Council Offices, Irlam.

Itchen Sholing.—May 12.—For erection of a Council school for 752 children, for the Hants County Council. Deposit £2 2*s*. Mr. A. L. Roberts, architect to the Education Committee, The Castle, Winchester.

Ledbury.—May 18.—For the construction of a reinforced concrete open-air swimming bath, with dressing boxes and corrugattd iron fencing, for the Urban District Council. Deposit £1. Mr. R. G. Gurney, surveyor, Ledbury.

Lindley.—May 14.—For the various works required in erection of a school building, for the Lindley Adult School Committee. Mr. N. Culley, A.R.I.B.A., architect, 13 John William Street, Huddersfield.

Liverpool.—For the work of erecting a general hall at the Highfield Infirmary, Knotty Ash, for the Select Vestry. Mr. G. W. Coster, clerk to the Select Vestry, Parish Offices, Brownlow Hill, Liverpool.

London.—May 13.—For alterations to Orange Street Waterworks, for the Commissioners of H.M. Works and Public Buildings. Deposit £1 1*s*. H.M. Office of Works, &c., Storey's Gate, S.W.

London.—May 14.—For erecting the necessary hoardings and pulling down the houses No. 2 to 16 (inclusive) Plough Road, and Nos. 1 to 53 (inclusive) Chilton Street, Rotherhithe, S.E., and blocks of stabling, clearing away materials and débris, and leaving the whole of the site ready for the erection of blocks of model dwellings, also for the provision and erection of the requisite shoring to support the adjoining buildings, for the Trustees of the Sutton Estate. Mr. E. C. P. Monson, F.R.I.B.A., architect, Finsbury Pavement House, E.C.

Lyminge.—May 14.—For (1) alterations to the old men's wards, (2) repairs to ceilings, at the workhouse, Lyminge, for the Guardians of Eltham Union. Mr. E. Lovick, clerk, 29 Bouverie Square, Folkestone.

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Manchester.—For erection of a proposed picture palace, Oxford Road, All Saints', Manchester. Deposit £2 2*s*. Mr. P. Hothersall, architect and surveyor, 426 Bury New Road, Prestwich.

Manchester.—May 20.—For works, &c., required in the erection of an electric power station at Clifton Junction, near Manchester, for the Lancashire and Yorkshire Railway Company. The Engineer's Office, Hunt's Bank, Manchester.

Mexborough.—May 15.—For erection of public baths, for the Urban District Council. Deposit £2 2*s*. Mr. H. Burgess, architect, Queen Anne's Chambers, Westminster, London, or Mr. H. R. Collins, surveyor, Regent Street, Barnsley.

Midhurst.—May 26.—For alterations and additions to the Grammar School, for the West Sussex and Chichester Joint Education Committee. Send applications and £1 1*s*. deposit by May 15 to Mr. H. P. Roberts, F.R.I.B.A., county education architect, Thurloe House, High Street, Worthing.

Morley.—May 14.—For the various works required in erection of ten through houses in Rooms Lane, for Mr. H. Newell. Mr. T. A. Buttery, Licentiate R.I.B.A., architect and surveyor, Queen Street, Morley, and 1 Basinghall Square, Leeds.

Morley.—May 14.—For erection of a brick chimney, 80 feet high, firebrick lined, at the gasworks, for the Corporation. The Gas Office, Town Hall, Morley.

Newcastle-upon-Tyne.—May 20.—For the enlargement of the laundry and new mortuary at the City Hospital, Walker Gate. The City Estate and Property Surveyor's Office, Town Hall, Newcastle-upon-Tyne.

Newcastle-upon-Tyne.—May 11.—For the conversion of existing premises into cottage baths, in Churchill Street and Blandford Street, for the Baths and Wash-houses Committee. City Estate and Property Surveyor's Office, Town Hall, Newcastle-upon-Tyne.

Normanton.—For erection and completion of five shops and offices in High Street, for Mr. E. Beedle. Mr. J. P. Padgett, architect, Carlton Chambers, Castleford.

Otterbourne.—May 18.—For erection of four cottages at their waterworks pumping station at Otterbourne, for the Southampton Corporation. Deposit £1 1*s*. The Waterworks' Engineer's Office, 33 and 35 French Street, Southampton.

Outwood (Yorks).—May 8.—For the various works required in the erection of two houses near Rook's Nest Road, Outwood. Mr. H. Dobson, architect and surveyor, City Chambers, Wakefield.

Oxenhope.—For the work required in alterations to Pinhill End Farm, Marsh, Oxenhope, Yorks. Messrs. Moore & Crabtree, architects, York Chambers, Keighley.

Pickering.—May 12.—For the whole of the work required in the construction of a new drill hall at Pickering, for the North Riding Territorial Force Association. Send in names by May 12 to Major R. F. Ruck Keene, secretary, North Riding Territorial Force Association, South Parade, Northallerton.

Pontefract.—For erection and completion of residence, The Mount. Messrs. Garside & Pennington, architects and surveyors, Pontefract and Castleford.

Pudsey.—May 12.—For whole or separate trades in new mission church and school, St. James'. The Vicarage, Pudsey, or Messrs. Austin & Paley, architects, Lancaster.

Rotherham.—May 18.—For supply and fixing complete of about 5,600 square feet of patent roof glazing to the extensions of the car sheds, Rawmarsh Road, Rotherham, for the Corporation. Mr. E. B. Martin, M.I.C.E., borough engineer, Town Hall, Rotherham.

Salford.—May 18.—For erection of a sub-station in Robert Hall Street, for the Corporation. Messrs. C. S. Allott & Sons, 46 Brown Street, Manchester.

Saltaire.—For the various works required in erection of detached house, Nab Lane, Saltaire, Yorks. Messrs. A. Sharp & Son, Pearl Assurance Buildings, 10 Market Street, Bradford.

Scotland.—May 20.—For erection of hostels, laundry lodges, laying out grounds, forming roads, tennis courts, &c., at East Craigmillar Park, for the Edinburgh Association for the Provision of Hostels for Women Students. Schedules and forms of tender for the following trades can be obtained: Excavator, mason, and brick work; joiner work; plumber work; plaster and cement work; slater work; steel and smith work; tilelayer work; glazier work; heating engineer work; electric lighting, power, telephone, and bell work. Mr. A. K. Robertson, architect, 29 Hanover Street, Edinburgh.

Shaw.—For erection of eighteen semi-detached cottages, for the Crompton Co-operative Provident Society, Ltd. (Messrs. Heywood & Ogden, architects and surveyors, Oldham.) Send names at once to the Secretary of the Society, Park Street, Shaw, Lancs.

Sheffield.—May 18.—For works of all trades required in erection of a special school, Northfield Road, Crookes. The City Architect, Town Hall, Sheffield.

Shoreham-by-Sea.—May 26.—For additions and improvements at the Council School, for the West Sussex and Chichester Joint Education Committee. Mr. H. P. Roberts, F.R.I.B.A., county education architect, "Thurloe House," High Street, Worthing.

Shotley.—For erection of a pair of cottages at Shotley, Suffolk, for Mr. W. Wrinch. Mr. H. R. Hooper, A.R.I.B.A., architect, 21 Queen Street, Ipswich.

Sileby.—May 23.—For the enlargement of the Sileby County School, for the Leicestershire County Council (Education Committee). Deposit £10 10*s*. The Architect, 33 Bowling Green Street, Leicester.

Stretford.—May 18.—For erection of St. Peter's Church, Gorse Hill, Stretford, Manchester. Deposit £2 2*s*. Messrs. Woodhouse & Howard, architects, 88 Mosley Street, Manchester.

Sunderland.—May 21.—For the execution of ordinary works and repairs to buildings in their charge in the Sunderland district during three years from July 1, for the Commissioners of H.M. Works and Public Buildings. Deposit £1. H.M. Office of Works, &c., Storey's Gate, S.W.

Tewkesbury.—May 12.—For pulling down and rebuilding premises, also erection of bakery and warehouse, branch No. 9, 114 High Street, and Warder's Alley, Tewkesbury, for the Gloucester Co-operative and Industrial Society, Ltd. Deposit £1 1*s*. The Society's Offices, Brunswick Road, Gloucester, or Mr. T. Malvern, Licentiate R.I.B.A., architect, 21 Winchcombe Street, Cheltenham.

Tynemouth.—May 16.—For construction of retaining walls, reinforced concrete platforms, &c., upon the sea banks at Tynemouth. Deposit £2 2*s*. Mr. J. F. Smillie, borough surveyor, Tynemouth.

Wakefield.—May 11.—For building a boundary wall in Jacob's Well Lane, for the Corporation. The City Surveyor, Town Hall, Wakefield.

Wales.—For alterations and repairs to the Glynarthen Council School, for the Cardigan County Education Committee. The Head Teacher at the School, or Mr. G. D. Lewis, county architect, Aberystwyth.

Wales.—For erection of three houses at Crynant, for Messrs. Joseph Jenkins and Arthur Davies, Crynant. Mr. J. C. Rees, M.S.A., Parade Chambers, Neath.

Wales.—May 11.—For erection of an electric theatre at Ystrad, Rhondda Valley, for the Gelly Pictorium Company, Ltd. Mr. J. Phillips, 9 Gelly Road, Ystrad, Rhondda Valley.

Wales.—May 11. —For rebuilding of portion of the Hendrewen Hotel, Blaencwm, Rhondda Valley, for Messrs. Dd. John & Co., Ltd. Send applications and £2 2*s*. to Mr. W. D. Morgan, M.S.A., architect, 194 Ystrad Road, Pentre, Rhondda.

Wales.—May 12.—For the construction of a goods depôt at Cockett, Glamorgan, for the Great Western Railway Company. The Engineer at Neath Station.

Wales.—May 12.—For rebuilding the Llandilo intermediate school, for the Governors. Mr. W. D. Jenkins, F.S.I., A.R.I.B.A., architect and surveyor, Llandilo.

Wales.—May 12.—For erection of a minister's house at Five Roads, Llanelly, for the Trustees of Horeb Baptist Church. Mr. J. M. Jones, Derlwyn, Five Roads, Llanelly.

Wales.—May 14.—For making certain alterations and additions to the Hengoed Junction Hotel, Hengoed, for Mr. W. H. Tossell. Mr. G. E. Kenshole, M.S.A., architect, Station Road, Bargoed.

Wales.—May 14.—For additions and alterations to vestry, &c., of the Rhydlydan C.M. chapel, Pentre Voelas. Mr. R. J. Hughes, A.R.I.B.A., architect, Llanfairfechan.

Wales.—May 15.—For erection of forty houses at Maesymarchog, Onllwyn, for the Maesymarchog Building Club. Mr. J. G. Rees, M.S.A., Parade Chambers, Neath.

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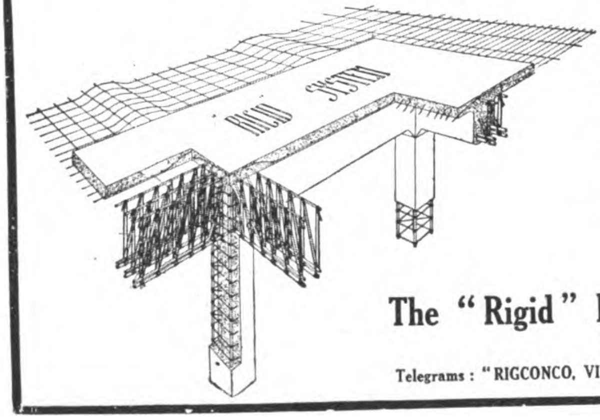

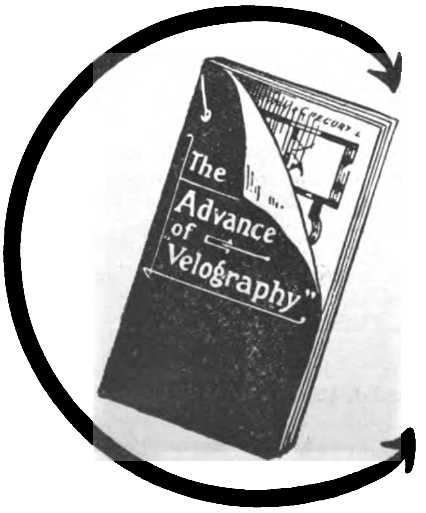

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WALES.—May 16.—For repairs to chimney stacks at the Cardiff Workhouse, for the Guardians. Mr. A. J. Harris, clerk, Union Offices, Queen's Chambers, Cardiff.

WARRINGTON.—May 12.—For erection and completion of a dispensary behind the Health Offices, Sankey Street, for the Health Committee. The Borough Surveyor, Town Hall, Warrington.

WORKSOP.—May 15.—For the following works required in erection of two houses at the Co-operative Garden City, Kilton Road, for the Worksop Co-operative Society, Ltd.: (1) Excavator, bricklayer, mason, carpenter, and joiner; (2) plumber, glazier, and ironfounder; (3) painter. Mr. B. D. Thompson, architect, 73 Bridge Street, Worksop.

TENDERS.

CARLISLE.

For the erection of an infants' school and caretaker's house at Newtown, for the Carlisle Education Committee. Messrs. OLIVER & DODGSHUN, FF.R.I.B.A., architects, Carlisle.

J. & R. BELL, Carlisle (*accepted*)	£5,918	0	0

CROWTHORNE.

For extensions at the cookery and laundry centre, for the Berkshire Education Committee.

SMALLBONE & SON, Streatley (*accepted*)	£437	0	0

HUDDERSFIELD.

For the erection of workmen's dwellings, for the Corporation. Mr. K. F. CAMPBELL, M.I.C.E., borough engineer and surveyor, Huddersfield.

Accepted tenders.

Twenty-five Houses at Bradley (in stone).

Mason, Mark Brook, Huddersfield.
Joiner, J. B. Brooke, Huddersfield.
Plumber, J. H. Taylor & Co., Huddersfield.
Plasterer, Robinson & Shaw, Marsh.
Slater, G. H. Day & Sons, Milnsbridge.
Painter, A. Raistrick & Son, Deighton.

Twenty-four Houses at Salendine Nook (in stone).

Mason, Wm. Beaumont, Milnsbridge.
Joiner, Hampshire & Co., Huddersfield.
Plumber, Garton & Son, Huddersfield.
Plasterer, Robinson & Shaw, Marsh.
Slater, G. H. Day & Sons, Milnsbridge.
Painter, J. W. W. Gee, Longwood.

For the erection of various buildings, roads and drainage work in connection with a hospital for tuberculosis at Bradley, for the Corporation. Mr. K. F. CAMPBELL, borough engineer and surveyor, Huddersfield.

Accepted tenders.

Scheme Three (in stone).

A. Graham & Sons, roads and drainage, Huddersfield.
Abraham Graham, mason, Huddersfield.
John Cooke, concrete, Huddersfield.
Hampshire & Co., Ltd., joiner, Huddersfield.
J. H. Taylor & Co., Ltd., plumber, Huddersfield.
H. & W. Riley, plasterer, Huddersfield.
Alfred Bower, slater, Crosland Moor.
A. Beevers & Sons, painter, Huddersfield.

HULL.

For the extension of the cattle market, for the Corporation.

A. J. DARNLEY & SON, Hull (*accepted*)	£4,235	0	0

HOUGHTON-LE-SPRING.

For the erection of a block of two children's homes, for the Guardians. Messrs. J. G. & E. COWE, architects, Chester-le-Street.

Draper & Sons	£1,280	15	0
Oates & Sons	1,273	15	0
Bolam	1,262	12	0
Cooper	1,239	0	0
Groves	1,236	0	7
T. Pearson, Ltd.	1,227	0	0
Brown	1,219	0	0
Wilson	1,214	7	0
Norman	1,192	16	8
Harrison	1,161	0	0
J. BERRYMAN, Fence Houses (*accepted*)	1,077	18	0
Architect's estimate	1,113	0	0

IRELAND.

For the erection of buildings at the rear of the technical school, 18 Rutland Square, Dublin, for the Technical Education Committee of the Corporation of Dublin. Mr. C. J. MACCARTHY, city architect, Dublin.

Farmer Bros.	£6,172	0	0
Hull & Co.	5,895	0	0
Pemberton & Co.	5,869	0	0
A. FRASER & Co., Dublin (*recommended*)	5,794	0	0

LEWISHAM.

For enlarging the Holbeach Road school, for the London County Council.

Downs	£7,056	0	0
Appleby & Sons	6,988	0	0
Akers & Co.	6,633	0	0
Mills & Sons	6,559	0	0
Blay	6,465	0	0
Wallis & Sons	6,446	0	0
W. Smith & Sons	6,337	0	0
J. Smith & Sons	6,278	0	0
J. & C. Bowyer	6,264	0	0
Thomas & Edge	6,149	0	0
Moss & Sons	6,083	0	0
Holloway	5,964	0	0
T. D. LENG, Deptford (*accepted*)	5,947	0	0

LONDON.

For installing heating apparatus at the Wilson Street L.C.C. school, Islington.

Brightside Foundry and Engineering Co.	£1,476	0	0
Arding & Dyne	1,346	0	0
Wilson & Smith	1,259	0	0
Knight & Sons	1,149	0	0
Yetton & Brockett	1,123	0	0
Frier	1,099	10	0
J. & F. May	1,079	0	0
Deane & Beal	1,070	0	0
Cannon & Sons	1,050	0	0
PALOWKAR & SONS, Queen Street (*accepted*)	997	0	0

For cleaning, painting, and repairs at the South-Eastern Hospital, for the Metropolitan Asylums Board. Mr. W. T. HATCH, M.I.C.E., M.I.M.E., engineer-in-chief, the Office of the Board, Embankment, E.C.

Bailey	£2,090	0	0
Fenn	1,976	6	11
Reason	1,879	0	0
Johns Bros.	1,786	13	8
Mills	1,765	0	0
Inns	1,531	0	0
Hussey	1,409	0	0
POLLARD & Co., 29 Clerkenwell Road, E.C. (*accepted*)	1,408	0	0
Engineer-in-Chief's estimate	1,590	0	0

For enlarging the Queen's Head Street school, for the London County Council.

Ashby & Horner	£9,942	0	0
Perry & Co. (Bow), Ltd.	9,695	0	0
W. F. Blay, Ltd.	9,592	0	0
Wallis & Sons	9,351	5	1
Chessum & Sons	9,168	0	0
Lawrence & Son	8,954	0	0
Brand, Pettit & Co.	8,690	0	0
Roberts & Co.	8,683	0	0
McCormick & Sons	8,398	0	0
Rowley Bros.	8,325	0	0
L. H. & R. Roberts	8,279	0	0
J. WILLMOTT & SONS, Hornsey (*accepted*)	7,877	0	0

SCOTLAND.

For the erection of a car shed on the site of the old Militia Barracks, King Street, for the Aberdeen Town Council.

Recommended tenders.

G. Lyell, jun., carpenter	£1,369	4	0
Main & Son, masons	1,177	0	0
Allen, Sheffield, trackwork	1,063	0	0
A. M'Robb, plumber	230	0	0
Maitland & Son, slaters	152	19	6
Rodger & Baxter, asphalting	37	15	0

WALLASEY.

For the erection of a town hall on the North Mead site, Brighton Street, Seacombe. Messrs. BRIGGS, WOLSTENHOLME & THORNELY, architects, Liverpool.

W. MOSS & SONS, LTD., Loughborough (*accepted*)	£82,140	0	0

WALES.

For the erection of a workmen's model lodging-house near the Beech Tree Hotel, Ystrad Mynach, for the Ystrad Mynach Model Lodging House Co., Ltd. Mr. H. G. JONES, architect, Hengoed.

G. & D. JONES, Ystrad Mynach (*accepted*)	£1,822 0 0

For the erection of a fire station in Westgate Street and Quay Street, Cardiff, for the Cardiff City Council. Messrs. E. V. HARRIS & T. A. MOODIE, F.R.I.B.A., architects, 8 New Square, Lincoln's Inn, London, W.C.

Wilkins	£22,794 3 2
Magg & Co.	22,050 0 0
Symonds & Son	21,476 0 0
Wilcox & Co.	20,875 0 0
Allan	19,981 16 9
Davies & Sons	19,400 0 0
Evans Bros.	18,945 10 0
Turner & Sons	18,498 0 0

VARIETIES.

THE Liverpool Markets Committee have requested the city engineer and the Corporation surveyor to prepare a scheme, with an estimate of cost, for the erection of a public abattoir and dead-meat market on the site of the existing premises in Trowbridge Street, and within the limits of Gill Street, Copperas Hill, Brownlow Hill, and Russell Street.

THE Government are appointing a committee "to consider whether any, and if so what, steps might be taken with a view to regularising the total demand for labour from year to year and in different seasons, by adjusting the distribution of public work conducted or given out by Government Departments with reference to the state of employment in the particular trades from time to time."

THE Keighley Town Council will be asked at their next meeting to approve the recommendation of the Waterworks Committee accepting the tender of Morrison & Mason, Ltd., Glasgow, amounting to £150,027, for the construction of the New Lower Laith reservoir in Sladen Valley, near Haworth. The work also includes the construction of fifteen beds, a clear water basin, and other subsidiary works.

A LARGE building, consisting of a block of batchelors' chambers de luxe, is to be erected adjoining the Prince's Club, on the site of Nos. 225-9 Knightsbridge, S.W., eight storeys high. The elevation will be carried in Portland stone, in the French Renaissance, and the plans will embody many novel features of internal convenience. The architects are Messrs. Palgrave & Partners, 23 Bloomsbury Square, W.C.

MR. LESLIE K. VIGERS, who acted as arbitrator in the claim of Messrs. Cater, Platt & Co. upon the Corporation, has given his award. The claimants are mantle makers in Knightrider Street, and their premises are required by the Corporation to make way for the northern approach to the projected St. Paul's Bridge. They claimed £51,165 in respect of their interest in the premises and for consequential damage to their business. The amount actually awarded is £24,018.

MESSRS. W. E. BLAKE, LTD., builders, inform us that owing to the expansion of their business they have been obliged to centralise their works at Stevenage Road, Fulham, London, S.W., to which their Bloomsbury office has been removed. The firm's Plymouth branch is now closed. Their new central works cover over two acres, and have a large riverside wharf. Among the important recent contracts carried out by W. E. Blake, Ltd., was that for the British Museum extensions, which have this week been opened by his Majesty the King.

THE Municipal authorities of Antwerp have come to an agreement with the owners of the "Maison de Rubens" in that city by which the painter's house cannot be sold for a period of twenty-five years. It is understood that several tempting offers for its purchase, with a view to eventual removal to the United States, have been received from Americans. Two special features of the house are its portico and garden summerhouse.

MR. E. H. HARBOTTLE, F.R.I.B.A., as honorary surveyor, has prepared a scheme for the extension of the Royal Devon and Exeter Hospital, Exeter, which has just been approved generally by the Governors. The proposed accommodation will include a sick room and wardrobe room on the ground floor; seven bed-sitting rooms for sisters, with two bathrooms and other accommodation on the first floor; and seventeen bedrooms, two bathrooms, &c., for nurses. The approximate cost is £5,987 12*s*. 11*d*., but this, it was hoped, will be considerably reduced.

THE Council of the Institution of Civil Engineers have made the following awards for papers read and discussed during the session 1913-14: A Telford gold medal to Mr. F. W. Cowie (Montreal); a George Stephenson gold medal to Mr. F. E. Wentworth-Shields (Southampton); Watt gold medals to Mr. Thos. Clarkson (Chelmsford) and Mr. Henry Fowler (Derby); and Telford premiums to Professor E. G. Coker (London), Mr. W. A. Scoble (London), Mr. Wm. Willox (London), and Mr. S. P. W. D'Alte Sellon (London).

THE *Pall Mall Gazette's* annual orange-covered publication, "The Pictures of the Year," was produced with even more than the usual celerity, and it was on sale by the opening day of the Royal Academy. This was not accomplished at the expense of excellence of reproduction or of general interest, for these remain as high as ever. A small innovation is that the Architectural Room is represented by a photograph of "Model of House at Gouy-en-Gosas, France.—Ernest Newton, A.R.A."

THE Clydebank building trade shows signs of reviving after a period of inactivity. At a meeting of the local Dean of Guild Court on Monday last, plans were passed for the erection or extension of various buildings to cost approximately £26,000. The largest item was a scheme by Messrs. John Brown & Co., Ltd., shipbuilders, for building fifteen tenements at a cost of £20,000, and for which the contract has been let to Mr. L. Kirk, Clydebank. Lining was also granted to the Clydebank Picture-House, Ltd., to erect a new picture-house in Glasgow Road. It is to accommodate 1,300—800 in area and 500 in gallery—and is to cost about £4,000.

FOR the purpose of "building, owning, and managing houses for the working classes on Tyneside," Tyneside Tenants, Ltd., has recently been registered as a company under the Industrial and Provident Societies Act of 1893. The first block of houses to be erected will be a series of between thirty and forty, land having been secured at Fisher Hill, Walker-on-Tyne, in close proximity to the Neptune Yard of Messrs. Swan, Hunter & Wigham Richardson, and within the boundary of the city of Newcastle. Plans for these houses have already been passed by the Newcastle Corporation. The designer is Mr. Arnold Mitchell, of Hanover Square, London, and the builders will be Messrs. Cubitt & Co., of Gray's Inn Road, London.

TRADE NOTES.

UNDER the direction of Mr. Robert Lynn, architect, Belfast, the "Boyle" system of ventilation (natural), embracing Boyle's latest patent "Air-Pump" ventilator and air inlets, has been applied to the Dollingstown Memorial Hall, co. Down.

MESSRS. OETZMANN & CO., LTD., have had their telephone transferred from the Mayfair to the new Museum Exchange, and from henceforth their telephone number will be Museum One.

THE London and Midland Insurance Co., Ltd., offer many special attractions in the matter of motor-car insurance, such as an allowance of a cumulative "no claim" bonus amounting in some cases to as much as 25 per cent. Their new commercial motor vehicle prospectus has such important features as "Damage to Goods in Transit," "Compensation for Loss of Use," and "Mechanical Breakdown."

THE Bath-stone quarry at Westwells, Corsham, Wilts, near the Great Western Railway Station, and known as "Moor Park Quarry," having the right of minerals underlying an area of nearly twenty acres, together with the loose and fixed plant and machinery, was submitted to auction on April 29 by Messrs. Tilley, Parry & Culverwell, of Chippenham, at Corsham. The auctioneer pointed out that only one acre had already been quarried, and that he was offering a fully developed quarry, one which had been proved, and the purchaser of which could immediately set to work and begin realising, as the plant was all in position, and the tram lines laid. The stone from this quarry had been used in the district and extensively in London and other cities, and mention was made of well-known buildings in London which had been erected with stone from it; also that the last stack quarried amounted to upwards of 8,000 cubic feet, averaging 16 cubic feet per block. The property was put in at £1,500, but at £2,800 the auctioneer intimated he could not sell at that price. Two blocks of five cottages each were submitted, but they were also undisposed of. The auctioneers will be pleased to negotiate for the sale of the quarry by private treaty.

THE
Architect and Contract Reporter.
FRIDAY, MAY 15, 1914.

EDITORIAL NOTICES.

The Editor will always be pleased to examine drawings or articles with a view to publication, but cannot be responsible for the safety of those sent, though every reasonable care will be taken. Contributors desiring payment should clearly state their wishes. No payment will be made until after publication, and a commission to prepare articles or drawings does not necessarily imply acceptance or approval.

No communication can be inserted unless authenticated by the name and address of the writer—not in every case for publication, but as a guarantee of good faith.

We have upon our staff a very eminent Barrister, who will be glad to answer in the columns of this paper any legal question that may be of interest to our readers. All letters must be addressed "Legal Adviser," Office of "The Architect," Imperial Buildings, Ludgate Circus, London, E.C.

The Editor will be glad to receive from Architects in London and the Provinces results of Competitions and Tenders and other particulars of Works in progress in which they may be interested.

TENDERS, ETC.

⁂ *As great disappointment is frequently expressed at the nonappearance of Contracts Open, Tenders, &c., it is particularly requested that information of this description be forwarded to the Office, Imperial Buildings, Ludgate Circus, London, E.C., not later than 2 P.M. on Thursdays.*

COMPETITIONS OPEN.

CHESTER.—The Corporation invite designs for the erection of houses for the working classes. Premiums of £50, £25, and £10 are offered. Mr. Patrick Abercrombie, M.A., will act as assessor. Deposit £1 1*s*. Mr. J. H. Dickson, town clerk, Town Hall, Chester.

CONWAY.—The Board of Guardians invite schemes, with plans, for the laying out of a plot of land near Conway for the provision of one relieving home and four cottages homes, and for laying out of the remainder of the plot for future cottage homes, recreation grounds, &c. Premiums of £10 and £5. Commission will be paid for work carried out during the first five years from date of acceptance of a scheme. Send applications to Mr. J. W. Post, clerk to the Guardians, Union Offices, Conway.

GLASGOW.—The Tramways Committee of the Corporation of Glasgow invite designs for tramway shelter and convenience. Plan of ground and other particulars may be obtained from Mr. James Dalrymple, General Manager, 46 Bath Street, Glasgow.

GRIMSBY.—June 2.—The Building Committee of the proposed Constitutional Club invite designs for premises to be erected at the corner of Victoria Street and Upper Spring Street, at an estimated cost of £3,000. Premiums of £40, £20, and £10 are offered. Deposit of £2 2*s*. will be sent back on receipt of designs or on return of the particulars within 10 days. Mr. H. W. V. Sheckell, secretary, Constitutional Club, Victoria Street, Grimsby.

HYTHE.—May 30.—The Town Council invite designs for a concert hall and public shelter, for which premiums of fifty, twenty-five, and ten guineas will be awarded. Deposit £1 1*s*. (returnable). Condition, site plan, &c., may be obtained on application to Mr. Bernard C. Drake, town clerk, Hythe, Kent. (See advertisement.)

LONDON.—Sept. 7.—The London County Council invites designs for new public elementary schools at (1) Linda Street, York Road, Battersea, and (2) Billingsgate Street, Church Street, Greenwich, and has appointed Mr. John W. Simpson, F.R.I.B.A., 3 Verulam Buildings, Gray's Inn, W.C., to act as professional assessor and adviser. Deposit of £1 1*s*., payable to the Education Cashier, will be returned on receipt of a bona-fide design for either or both schools, or on the return of the particulars within one month. The Education Officer, Education Offices, Victoria Embankment, W.C. (See advertisement.)

MANCHESTER.—May 23.—The Sanitary Committee of the Corporation invite competitive plans, specifications and estimates for semi-detached cottages on the Blackley estate. Premiums of £50 and £25 will be paid for the first and second best plans, &c., as selected. Deposit £1 1*s*. The Sanitary Department, Civic Buildings, Mount Street, Manchester. (See advertisement.)

MIDDLETON.—July 16.—The Corporation invite designs for a town hall proposed to be erected in Long Street at a cost of £18,000. Premiums of £100, £50, and £25 are offered. The assessor is Mr. Hastwell Grayson, F.R.I.B.A., M.A. Deposit £1 1*s*., which will be returned on receipt of a design. Mr. F. Entwistle, town clerk, Town Hall, Middleton.

SUNDERLAND.—June 23.—The Borough Council invite designs for a proposed secondary school, Barnes Estate, Durham Road, to accommodate 600 boys. Premiums of £100, £50, and £25 are offered. An assessor nominated by the President of the R.I.B.A. will be appointed. Deposit of £2 2*s*. will be sent back on receipt of a *bonâ-fide* design or on return of the particulars within ten days. Mr. J. W. Moncur, M.I.C.E., borough engineer and surveyor, Town Hall, Sunderland.

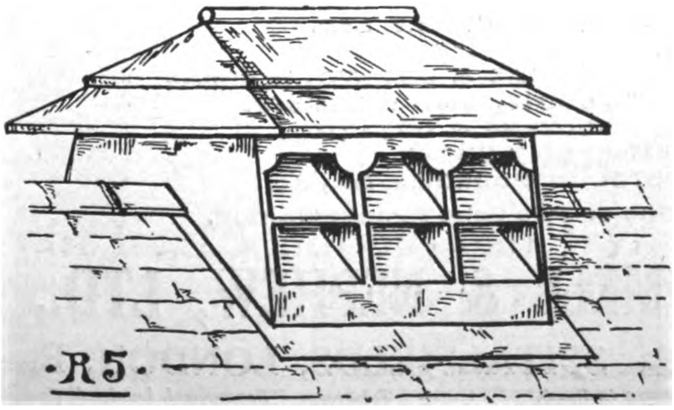
YORK.—The Committee of the St. Clement's Working Men's Club offer a prize of £25 for the best plans and specifications submitted in competition for the erection of a new model club. For full particulars and conditions apply to the Secretary, 3 Queen Victoria Street, York.

CONTRACTS OPEN.

ADWICK-LE-STREET.—May 22.—The West Riding Education Committee invite whole or separate tenders for the following works in connection with new school at Adwick-le-Street, Highfields—viz.: builder, joiner, roof tiler, plumber, plasterer, painter, ironfounder and smith, and asphalter. The Education Architect, County Hall, Wakefield, and the Divisional Clerk's Office, Doncaster. Send £1 deposit in each case by separate letter to the West Riding Treasurer, County Hall, Wakefield.

ANDOVER.—May 23.—For the following works, for the Corporation—viz., repairs to cemetery chapel and lodge, repairs to Corporation property in Winchester Street, and

(*Continued on page* 15.)



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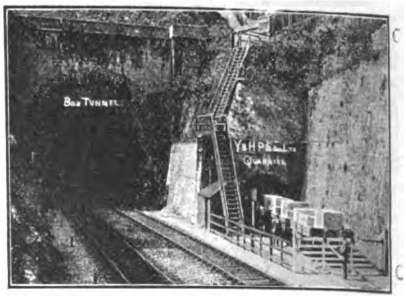

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ARMLEY.—For additions to Whingate Wesleyan Sunday school, Armley (whole tenders). Messrs. F. W. Rhodes & Son, architects, Upper Wortley, Leeds.

ARUNDEL.—June 1.—For erection of ten cottages (two designs), adjoining Wood View, for the Town Council. Mr. A. Holmes, town clerk, Town Clerk's Offices, Arundel.

BENTLEY.—June 3.—For proposed alterations and additions to the Bentley schools, Hants. Deposit £1 11*s*. 6*d*. Mr. A. J. Stedman, architect, South Street, Farnham.

BEESTON.—May 20.—For alterations of Millshaw House, Beeston, into two residences, for Messrs. W. L. Ingle, Ltd. Mr. T. A. Buttery, Licentiate R.I.B.A., architect and surveyor, Queen Street, Morley, and 1 Basinghall Square, Leeds.

BLACKBURN.—May 25.—For the erection of new public halls on Blakey Moor (superstructure section), for the Corporation. Deposit £1 1*s*. Messrs. Briggs, Wolstenholme & Thornley, and Messrs. Stones, Stones & Atkinson, joint architects, 10 Richmond Terrace, Blackburn.

BODMIN.—May 23.—For erection of an eight-room cottage at Temple Clayworks, for Mr. F. Parkyn. Mr. W. J. P. Jenkins, Bodmin.

BOOTLE.—May 20.—For erection and completion of an electricity sub-station at the corner of Atlantic Road and Pacific Road, for the Corporation. Mr. B. J. Wolfenden, A.M.I.C.E., borough engineer, Bootle, Lancs.

BRADFORD.—For mason's, joiner's, plasterer's, and plumber's work in the erection of a picture house at West Bowling. Mr. T. Riley, architect and surveyor, 81 Beckside Road, Lidget Green, Bradford.

BRIGHTON.—May 18.—For erection of a department for infants at the Coombe Road school, for the Education Committee. Deposit £3. Messrs. T. Simpson & Son, surveyors to the committee, 16 Ship Street, Brighton.

BURLEY.—May 25.—For erection of a teacher's house at Burley Council school, for the Hants County Council. Deposit £1 1*s*. Mr. A. L. Roberts, architect to the Education Committee, The Castle, Winchester.

BURNLEY.—May 18.—For various trades in proposed offices, Grimshaw Street, for the Electricity Department. Send applications by May 18 to Mr. G. H. Pickles, M.I.C.E., borough engineer and surveyor, Town Hall, Burnley.

BURY.—May 20.—For supply of floor girders, stanchions, staircase, and chequered plates at the electricity generating station, Chamber Hall, for the Electricity Committee. The Borough Engineer, Bank Street, Bury, Lancs.

CHESHIRE.—June 6.—For the following building and other works, for the Cheshire County Council—viz.: Woolstanwood estate, near Crewe and Nantwich—alterations and repairs to existing farm, dwelling-house, and farm buildings. Worleston estate, near Nantwich—erection of one single dwelling-house and two sets of farm buildings; alterations, additions, and repairs to existing farm, dwelling-house, and farm buildings; conversion of two existing cottages into one dwelling-house. Ledsham estate, near Chester—painting all external wood and ironwork and colour-washing rough cast to some twenty dwelling-houses and sets of farm buildings. The Estate Office, 10 Wellington Road, Nantwich, and Mr. W. H. Lancaster, county land agent, 49 Northgate Street, Chester.

CLEATOR MOOR.—May 16.—For alterations to property in Leconfield Street, for the Whitehaven Hematite Iron and Steel Co., Ltd. Send names by May 16 to Mr. J. S. Stout, architect, 36 Lowther Street, Whitehaven.

COGGESHALL.—June 16.—For erection of a public elementary school for 192 scholars, for the Essex Education Committee. Send names and £2 2*s*. deposit by May 23 to Mr. J. Gleave, clerk to the Braintree District Sub-Committee, Education Offices, County High School, Braintree. Mr. G. Topham Forrest, county architect, 73 Duke Street, Chelmsford.

CRIGGLESTONE.—May 19.—For the erection of two houses in Hollin Hall Lane. Mr. G. W. Moxon, architect, Bretton West, near Wakefield.

CUCKFIELD.—May 26.—For erection of six cottages, office, stables, and stores on land in London Lane, for the Cuckfield Urban District Council. Mr. C. H. Waugh, clerk, Boltro Road, Hayward's Heath.

DERBY.—May 28.—For the execution of ordinary works and repairs to buildings in their charge in the Derby district during three years from July 1, 1914, for the Commissioners of H.M. Works and Public Buildings. Deposit £1. H.M. Office of Works, &c., Storey's Gate, London, S.W.

DORCHESTER.—May 21.—For erection of a shelter in the borough gardens, for the Town Council. The Borough Surveyor, 21 North Square, Dorchester.

EARBY.—May 20.—For the several works required in alterations to the offices, classrooms, &c., at the Earby New Road Council school, for the West Riding County Council Mr. B. Thornton, divisional clerk, Education Offices, Skipton.

FRAMLINGHAM.—For erection of a house at Framlingham. Mr. D. Scase, Market Hill, Framlingham.

GATESHEAD.—May 19.—For erection of offices for yardmaster at Gateshead, for the North-Eastern Railway (whole tenders only). Mr. W. Bell, architect, Irving House, Westgate Road, Newcastle-on-Tyne.

HOVE.—May 20.—For constructing an underground lavatory, altering boundary fencing, and other works at Palmeira Lawn, for the Hove Town Council. Deposit £1 1*s*. Mr. H. H. Scott, borough surveyor, Town Hall, Hove.

IRELAND.—May 25.—For erection of (*a*) 113 three-room two-storey cottages at the "Oblate Site," Inchicore; (*b*) four blocks of flats, two storeys high, containing in all sixteen two-room dwellings, facing a proposed extension of St. Paul Street; (*c*) eight four-room houses, two storeys high, facing Blackhall Place, and forming a continuation of the present Corporation dwellings in Blackhall Place, for the Housing Committee of the Dublin Corporation. Separate tenders must be submitted for the buildings on the two sites—namely, (1) (*a*) Dwellings at Inchicore; (2) (*b* and *c*) Dwellings in St. Paul Street and Blackhall Place. Deposit £2. The City Architect, Municipal Buildings, Cork Hill, Dublin.

IRELAND.—May 23.—For alterations to latrine and additional lavatory accommodation, &c., locomotive works, Broadstone, Dublin, for the Midland Great Western Railway of Ireland Co. Mr. W. P. O'Neill, chief engineer, Broadstone Terminus, Dublin.

IRELAND.—June 4.—For erection of a hotel at Rosses Point, about five miles from Sligo, for the Midland Great Western Railway of Ireland Co. Deposit £2 2*s*. Mr. W. Purcell O'Neill, chief engineer of the company, Broadstone Terminus, Dublin.

IRLAM.—May 27.—For the building of 154 houses on three sites as follows: Eighty-four houses on site No. 1; fifty-two on site No. 2; and eighteen on site No. 3, for the Urban District Council. The contractor must quote for the whole of the houses on any one or more of the sites. Send applications and £5 5*s*. deposit by May 16 to Mr. R. H. Winterbottom, surveyor, Council Offices, Irlam.

ITCHEN WOOLSTON (HANTS).—May 23.—For sundry alterations for improving the lighting and ventilation and providing and fixing a folding partition at the boys' Council school, Alma Road. Deposit £1 1*s*. Mr. A. L. Roberts, architect to the Education Committee, The Castle, Winchester.

LINTHWAITE.—May 20.—For the various works required in erection of dwelling-house, Causeway Side, Linthwaite, Yorks. Messrs. Lunn & Kaye, architects and surveyors, Milnsbridge and Huddersfield.

LONDON.—May 27.—For constructing a brick-built urinal (cubical contents approximately 3,200 cubic feet) at the south-west corner of Shepherd's Bush Green, for the Hammersmith Borough Council. Mr. H. Mair, M.I.C.E., borough surveyor, Town Hall, Hammersmith, W.

LONDON.—May 28.—For the execution of ordinary works and repairs to buildings in their charge in the Tottenham district (including South Tottenham, Edmonton, Wood Green, Hornsey, Crouch End, Muswell Hill, Winchmore Hill, Palmers Green, and Southgate), during three years from July 1, for the Commissioners of H.M. Works and Public Buildings. H.M. Office of Works, &c., Storey's Gate, S.W.

MANCHESTER.—May 20.—For works, &c., required in the erection of an electric power station at Clifton Junction, near Manchester, for the Lancashire and Yorkshire Railway Company. The Engineer's Office, Hunt's Bank, Manchester.

MANCHESTER.—May 29.—For the whole of the work required in the construction of the headquarter buildings at Chorlton, Manchester, for the accommodation of the East Lancashire Division, Transport and Supply Column, for the East Lancashire Association Territorial Force. Deposit £1. The Surveyor, East Lancashire Association T.F., Town Hall Chambers, Ashton-under-Lyne.

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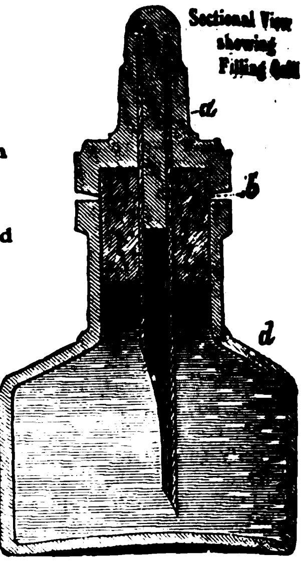

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Newburn-on-Tyne.—May 20.—For alterations and additions to the administration block of the Newburn Isolation Hospital, for the Gosforth, Newburn, and Castle Ward Joint Hospital Committee. Mr. H. F. J. Modlin, clerk to the committee, Council Offices, Newburn-on-Tyne.

Newton Abbot.—May 19.—For erection of a verandah and balcony at the infirmary, for the Guardians. Mr. S. Segar, F.I.A.S., Union Street, Newton Abbot.

Okehampton.—May 25.—For building a police station at Okehampton, for the Standing Joint Committee of the County of Devon. Deposit £3 3*s*. Mr. E. H. Harbottle, county architect, County Chambers, Exeter.

Pontefract.—For erection of a motor garage, for the Pontefract Co-operative Industrial Society, Ltd. Messrs. Garside & Pennington, architects and surveyors, Pontefract and Castleford.

Pontefract.—For erection and completion of general post office buildings (whole tenders only). Deposit £2 2*s*. Messrs. Garside & Pennington, architects and surveyors, Pontefract and Castleford.

Ripon.—For the whole of the various works required in alterations and additions to the Ripon Cottage Hospital, Firby Lane, Ripon. Send names to Messrs. Bown & Crosland, architects, 6 Princes Square, Harrogate.

St. Austell.—May 23.—For erection of a residence at Polkyth Road, for Mrs. A. Mitchell. Deposit £1 1*s*. Mr. B. C. Andrew, M.S.A., architect, Biddicks Court, St. Austell.

Scotland.—May 18.—For the mason, carpenter, slater, plaster, and plumber works of additions to the dwelling-house, and for the mason, carpenter, and slater works of new steading at Aquhythie, Kemnay. Messrs. Jenkins & Marr, C.E. and architects, 16 Bridge Street, Aberdeen.

Scotland.—May 18.—For the mason, carpenter, slater, plasterer, plumber, and painter work of proposed additions and alterations on house and shop, The Square, Ellon. Mr. W. Davidson, architect, Ellon, Aberdeen.

Scotland.—May 19.—For mason, carpenter, slater, plaster, and plumber works of additions and alterations at Methlick Higher Grade Public School. Mr. G. Moir, architect, Glencairn, Methlick.

Scotland.—May 19.—For the mason, joiner, plaster, plumber, and slater works of proposed Baptist church, Buckhaven. Mr. G. C. Campbell, architect and ordained surveyor, Buckhaven.

Scotland.—May 20.—For erection of hostels, laundry lodges, laying out grounds, forming roads, tennis courts, &c., at East Craigmillar Park, for the Edinburgh Association for the Provision of Hostels for Women Students. Schedules and forms of tender for the following trades can be obtained: Excavator, mason, and brick work; joiner work; plumber work; plaster and cement work; slater work; steel and smith work; tilelayer work; glazier work; heating engineer work; electric lighting, power, telephone, and bell work. Mr. A. K. Robertson, architect, 29 Hanover Street, Edinburgh.

Scotland.—May 22.—For the mason, carpenter, and slater works of additions to farm steadings on the following farms—viz.: (1) Mill of Colp, parish of Turriff; (2) Keithen, parish of Monquihitter; (3) Mains of Hatton, parish of Auchterless; (4) Arnhead, parish of Auchterless; (5) Woodtown, parish of Auchterless. Mr. W. L. Duncan, architect, Turriff.

Scotland.—May 23.—For steel frame work for machinery foundations (specification No. 29) at M'Donald Road Station, for the Edinburgh Corporation. Deposit £2 2*s*. Mr. F. A. Newington, engineer, Dewar Place, Edinburgh.

Shoreham-by-Sea.—May 26.—For additions and improvements at the Council School, for the West Sussex and Chichester Joint Education Committee. Mr. H. P. Roberts, F.R.I.B.A., county education architect, "Thurloe House," High Street, Worthing.

Shrewsbury.—May 22.—For the following, for the Small Holdings Committee of the Salop County Council: (1) erection of one cottage; (2) erection of one set of farm buildings; (3) alterations and additions to farmhouse; (4) alterations and additions to cottage, on the Crowmoor scheme, about one mile from Shrewsbury. Deposit £1 1*s*. Mr. W. J. Pulford, county land agent, County Buildings, Shrewsbury.

Sileby.—May 23.—For the enlargement of the Sileby County School, for the Leicestershire County Council (Education Committee). Deposit £10 10*s*. The Architect, 33 Bowling Green Street, Leicester.

South Elmsall.—For erection of branch store and warehouse, for Messrs. Jackson's Stores, Ltd., Leeds. Messrs. Garside & Pennington, architects and surveyors, Pontefract and Castleford.

Stafford.—May 30.—For carrying out alterations and additions to the borough hall, for the Corporation. Deposit £2 2*s*. Mr. W. Plant, A.M.I.C.E., borough engineer and surveyor, Borough Hall, Stafford.

Stockport.—May 19.—For the labour and materials required in providing and fixing seating at Heaton Norris recreation ground and at Alexandra Park, for the Parks Committee. Mr. J. Atkinson, A.M.I.C.E., borough surveyor, Town Hall, Stockport.

Swanage.—May 18.—For alterations and additions to Herston schools. Messrs. Clifton & Robinson, architects, Northbrook, Swanage, Dorset.

Twyford.—May 20.—For erection of three cottages in New Road, off Wargrave Road. Mr. F. Brooks, 4 Church Street, Twyford, Berks.

Wales.—May 21.—For building retaining and boundary walls, also for the renewing of eleven houses at Porth, Rhondda, for Mr. L. D. Nicholl, agent for Colonel A. V. H. Vaughan Lee. Mr. A. E. Trotman, architect, Mount Pleasant, Porth.

Wales.—May 23.—For erection and completion of a house on a site adjoining Parrog Road, Newport, Cardigan, for Captain D. R. Stephens. Mr. J. T. J. Williams, architect, Napier Street, Cardigan.

Wales.—May 23.—For the construction of a bridge over the stream near Dolwen, Aberporth, for the Cardigan Rural District Council. Mr. D. Davies, clerk, Quay Street, Cardigan.

Wales.—May 25.—For additions, alterations, renovations, and painting to the Tylors Hotel, Tylorstown, for Mr. J. Griffiths Jones. Deposit £1 1*s*. Messrs. A. O. Evans, Williams & Evans, architects, Pontypridd.

Wales.—May 30.—For erection of a market hall at Crymmych. Mr. S. Davies, secretary, Station House, Crymmych.

Wales.—May 30.—For erection of four houses at Bethesda Street, Merthyr Tydfil. Mr. T. E. Rees, M.S.A., architect, Bank Chambers, Merthyr Tydfil.

Walkley.—For the whole or any portion of the work required in erection of a picture palace at the corner of South Road and Highton Street, for the Walkley Palladium, Ltd. Mr. J. E. Whitehead, architect, 38 Bank Street, Sheffield.

Walsall.—For erection of school buildings, for the Trustees of the Wesleyan Sunday School, Pleck. Deposit £2 2*s*. Mr. C. W. D. Joynson, Licentiate R.I.B.A., architect, Wednesbury and Darlaston.

Warrington.—May 16.—For erection and completion of new board room, offices, &c., abutting on Winmarleigh and Museum Streets, for the Guardians. Send applications and £2 2*s*. deposit by May 16 to Mr. A. Bottomley, clerk, Union Offices, Bewsey Chambers, Warrington. Messrs. W. & S. Owen, architects, Cairo Street, Warrington.

Wawne.—For erection of farmhouse and buildings. Mr. J. Empson Tindall, architect, Wawne, Hull.

Withernsea.—May 25.—For erection of a reinforced concrete sea wall at South Cliff (total length about 152 yards), for the Urban District Council. Deposit £2 2*s*. Mr. J. B. Kirton, engineer, Council Offices, Withernsea.

York.—For all trades required in erection of large reinforced concrete sauce factory (Swain's system), for Messrs. Fletcher's (Shipley), Ltd. The Concrete Lattice Truss Co., City Chambers, Clifford Street, York.

Gourock Town Council have accepted the tender of Messrs. Millar & Co., Kelso, for the construction of a reservoir in the Daff Valley, near Inverkip. The scheme is expected to cost about £20,000, exclusive of the sum to be paid for the ground. Operations will extend over a period of two years.

The City Improvements Committee of Glasgow Corporation recommend that tenements be erected in the Calton district on ground recently acquired from the Caledonian Railway Co. The plans, prepared by Mr. A. B. M'Donald, city engineer, and Mr. W. C. Menzies, show two balcony tenements of three storeys in height facing Moncur Street, and so planned that the houses may be let either separately, as forty-eight single apartments, or as two-apartment dwellings. The houses are intended for the poorest class, and the caretaker's house of three rooms is so placed as to permit of supervision. The cost is estimated at £5,175, and the yearly revenue at £561.

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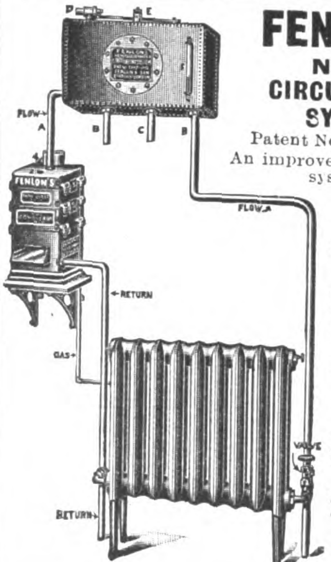

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TENDERS.

AUDLEY.

For alterations and improvements at Raven's Lane Council school, for the Staffordshire Education Committee.

T. GODWIN, Hanley (*accepted*)	£2,215	0	0

For installation of a low-pressure hot-water heating apparatus at above school.

TRUSWELL & SON, Newcastle-under-Lyme (*accepted*)	£296	0	0

BEVERLEY.

For the erection of clerk and steward's house, six cottages, farm bailiff's house, and dairy at the East Riding Lunatic Asylum. Mr. **HY. T. TATE**, architect, County Hall, Beverley. Quantities by Mr. J. **WATSON**, Hull.

Pape & Sons	£3,756	0	0
Potts	3,502	7	0
Birch & Sons	3,321	19	1
Whiting	3,094	7	5
Sawdon	3,045	0	0
J. W. **MAW & SONS**, York (*accepted*)	2,951	18	5

HULL.

For the erection of extensions to the cattle market, for the Corporation. Mr. A. E. **WHITE**, M.I.C.E., city engineer, Hull.

GEO. HOULTON & SON, Hull (*accepted*)	£4,780	0	0
Engineer's estimate	4,478	0	0

N.B.—Messrs. A. J. Darnely & Son, who, as reported by us last week, had received the above contract, obtained leave to withdraw their tender.

For builders' and ferro-concrete work required in the construction of workshops and in extensions and alterations to the existing car shed buildings for the Corporation. Mr. A. E. **WHITE**, M.I.C.E., city engineer, Hull.

A. J. **DARNELY & SON**, Hull (*accepted*)	£9,985	0	0

IRELAND.

For the erection of the Ballinamore Catholic Hall, County Leitrim. Mr. P. J. **BRADY**, C.E., J.P., architect.

Prior	£1,100	0	0
Roche	874	0	0
F. **MCAVINNEY** (*accepted*)	844	0	0

For the erection of a courthouse in Athlone, for the Westmeath County Council.

CULLEN BROS., Dublin (*accepted*)	£2,690	0	0

KEIGHLEY.

For the construction and maintenance for twelve months of a storage reservoir, with an earthen embankment, valve tower, &c.; also of a series of four filter beds, clear-water basin, straining well, and Venturi meter, and recording house, &c., for the Keighley Corporation. Mr. M. R. **BARNETT**, M.I.C.E., engineer.

Muirhead & Co.	£204,669	0	0
Best & Sons	201,399	10	8
Wills & Sons	196,959	7	1
Bushby & Sons	168,156	14	4
MORRISON & MASON, LTD., Glasgow (*accepted*)	150,027	19	7
Inns & Co.	126,697	8	8
Ditto (amended)	139.991	17	3
Engineer's estimate	141,927	12	2

LONDON.

For the erection of a house at Clapham Park, for Major A J. West. Mr. M. **MARSLAND**, architect, 16 Water Lane, Great Tower Street, London, E.C.

Allen	£1,697	0	0
Eaton	1,695	0	0
Garratt & Sons	1,673	0	0
Collinson & Co.	1,665	0	0
G. **HILL**, Streatham (*accepted*)	1,656	13	0

For the execution of rain-water, drainage works, &c., at the infirmary, East Greenwich. Mr. A. **ROBERTS**, F.R.I.B.A., surveyor, Greenwich.

Jennings, Ltd.	£974	0	0
Rapid Drain Repairing and Construction Co.	862	0	0
Mills & Sons	829	0	0
Bailey	745	13	4
Gorham	741	7	0
Martin	602	0	0
Fry Bros.	595	0	0
Mills	590	0	0
Woodham & Sons	583	0	0
A. L. **ETHERIDGE**, 8A Rollins Street, S.E. (*accepted*)	567	9	6

NEWNHAM.

For the erection of a public elementary school, for the Northamptonshire County Council Education Committee. Messrs. **BLACKWELL & RIDDEY**, architects, Kettering.

Franklin, Ltd.	£1,020	0	0
Drever & Son	888	0	0
Kench	849	0	0
Webster	820	0	0
Smith & Bunning	808	0	0
Beardsmore & West	790	0	0
Hickman & Sons	732	0	0
Ratledge	730	18	0
Adams & Son	720	0	0
HOLLAND & MARKS, Daventry (*accepted*)	705	0	0

NORMANTON.

For the erection of seventy-six houses for the working classes near Church Lane, for the Urban District Council. Mr. A. **HARTLEY**, architect and surveyor, Normanton. Quantities by the architect.

Accepted tenders.

G. Bagnall, bricklayer, Stanley, Yorks	£8,400	0	0
G. Bagnall, joiner, Stanley, Yorks	3,900	0	0
J. Woodhead, plumber, Wakefield	1,360	0	0
Dawber, Townsley & Co., slaters, Hull	815	0	0
A. Lee, plasterer, Gomersall	739	10	6
G. Bagnall, painter, Stanley, Yorks	235	0	0

WALES.

For the erection of two semi-detached houses at Ystrad Mynach, for Mr. W. Beynon. Mr. H. **GABE JONES**, architect, Hengoed.

W. **JAMES**, Ystrad Mynach (*accepted*)	£564	0	0

WIVELISCOMBE.

For carrying out scheme under the Housing of the Working Classes Acts, including erection of fourteen cottages, also water supply, drains, and fencing, and the provision of all necessary materials and labour, for the Urban District Council. Mr. F. W. **ROBERTS**, F.R.I.B.A., architect, Taunton.

Bryer	£2,944	0	0
Maddock	2,853	0	0
F. & E. Small	2,820	0	0
Smith	2,812	0	0
Spear	2,762	0	0
Poole	2,756	0	0
Moggridge & Son	2,694	0	0
Coles	2,662	0	0
J. **TWYFORD**, Wellington (*accepted*)	2,391	0	0
Architect's estimate	2,446	0	0

WOOLWICH.

For the erection of an external iron staircase at the Ancona Road School, Woolwich, in order to provide additional means of exit from the boys' department, for the London County Council.

The Safety Tread Syndicate	£586	10	0
Carron Company	553	4	6
The Cadogan Iron Works	409	5	0
Wilmer & Sons	403	0	0
H. & C. Davis & Co.	399	0	0
G. Wright, Ltd.	383	6	9
Hayward Bros. & Eckstein	375	0	0
F. A. **NORRIS & CO.**, 11-12 St. Andrew's Hill (*recommended*)	366	10	0
Architect's estimate	451	0	0

THE Manchester City Council have approved a scheme to provide for the erection of furnished houses in Rochdale Road, a thickly populated working-class district, at a cost of £8,973. It is proposed to build houses with three independent living-rooms, and each room will be let at a nominal rent by the day or the week. Nearly all the furniture will be fixtures. It is further proposed to provide cookery utensils and crockery.

THE Durham County Council invite applications before May 25 for the position of county surveyor and architect, at a commencing salary of £800 per annum, to be increased to £900 and £1,000 a year in 1916 and 1918. Applicants must have special qualifications as to the construction of roads and bridges, and preference will be given to those who are under the age of forty-five and who are corporate members of the Institution of Civil Engineers.

PUBLIC WATER SUPPLY.

In connection with the Chadwick Public Lectures, 1914, a lecture on "Water Supply" was given by Mr. E. P. Hill, M.Inst.C.E. (member of the firm of P. H. Hill & Co., of Manchester and Westminster), at the Royal Sanitary Institute on Thursday, April 30. Sir Maurice Fitzmaurice, C.M.G., Chadwick Trustee, was in the chair.

The lecturer said that water for the supply of towns is derived solely from rainfall, but it may be taken either from the surface of the ground or by pumping, and he dealt only with the surface sources of mountain streams.

After deciding what daily quantity of water is required by the town, a stream must be found to be supplied by sufficient rainfall and to have a site for an impounding reservoir to store the rain falling in wet seasons for use in times of drought. Allowance must also be made for evaporation and for a supply of compensation water.

Mr. Hill showed the nature of good catchment areas by lantern slides, and stated that dams in this country are constructed either of earthwork or of concrete faced with masonry. The formation of an earthwork dam was shown by cartoons. The various stages of its construction, the sinking and the timbering of the trench, its filling with concrete, and the raising of the puddle wall and embankment, with the necessary beaching and pitching and the construction of the waste weir, were all pictured by lantern slides. Masonry dams have been built to great heights abroad. The Shoshone dam in Wyoming, U.S.A., is 328 ft. in height and impounds 125 thousand million gallons. Amongst the types of dam is one of ferro-concrete, but a failure of this type recently occurred in America.

The most notable cases of failures of dams in recent years have occurred in the U.S.A., such as the Austin dam, Texas in 1900, another of the same name in Pennsylvania in 1911, and the great Johnstown disaster in 1889, where upwards of 2,000 lives were lost. All these were remarkably well illustrated by lantern slides. In this country two disasters have occurred—the Bilberry reservoir near Huddersfield in 1852 and the Bradfield reservoir, Sheffield, in 1864; 240 lives were lost in the latter disaster. All these failures, Mr. Hill assured his hearers, were the result of the violation of well-known engineering or geological principles, and could have been avoided.

The description of aqueducts, which convey the water from the source to the place where it is required, was made very interesting by a fine series of views of the ancient aqueducts of the Roman Empire. These admirable structures were made of masonry or brickwork and carried on arcades across ground below the hydraulic elevation. The aqueducts for the supply of Rome were 287 miles in length, of which forty-three miles were above the surface of the ground. Pipes were used to cross valleys in Roman aqueducts at Lyons, but the use of cast-iron pipes only became general 100 years ago. Lantern slides showing various stages in the manufacture and laying of modern cast-iron and steel pipes were then thrown on the screen, and Mr. Hill said many instructive things about the manner in which water is now distributed in our great towns.

The lecture was an epitome of a course of Chadwick Public Lectures delivered at the Birmingham University a year ago, and was repeated particularly to show London audiences the very fine series of illustrations collected by Mr. Hill and most ably explained by him.

VARIETIES.

Mr. Glendinning Moxham, F.R.I.B.A., of Swansea, has been elected president for the forthcoming session of the South Wales Institute of Architects.

Mr. O. C. Baines, of Paignton, has been appointed borough surveyor of Colchester. There were 144 applicants for the post.

Mr. J. A. Crowther, borough engineer, Southampton, has been instructed to prepare finished plans and quantities for a new branch library at Portswood, proposed to be erected at a cost of £2,500.

The Kursaal Committee at Harrogate are about to make application to the Local Government Board for sanction to borrow £6,200 for the enlargement of the Kursaal stage. If the sanction is forthcoming work will begin next October.

The Dublin Municipal Council, at a special meeting on the 11th inst., adopted the reports of their Housing Committee relating to the Ormond Market area, which involves a total outlay of £45,803, and to the Crabbe Lane and Upper Mercer Street areas, which is estimated to cost £39,350.

The Aberdare District Council at their last meeting decided "that in view of the continued dearth of housing accommodation and the urgent duty of the Council to close insanitary dwellings," to erect 200 houses, to be distributed among the various wards of the district.

The congregation of Cults Parish Church, near Aberbeen, on Tuesday last adopted the plans of a proposed larger church, at an estimated cost of £3,900. The plans were prepared by Mr. A. Marshall Mackenzie, architect, Aberdeen. The new building has seating accommodation for 400.

Messrs. Greenall & Cole, A.R.I.B.A., Manchester and London, have been appointed architects by the White City (Birmingham), Ltd., which proposes to erect a permanent exhibition and amusement park at the Aston Reservoir Grounds in Birmingham.

The Bury and District Joint Hospital Board has decided to proceed with a scheme for providing 150 additional beds for adults and 50 beds for children, and for this purpose has decided, subject to the approval of the Local Government Board, to purchase the whole of an estate adjacent to the existing Aitken Sanatorium at Holcombe for several thousand pounds.

An office building of eight storeys, with a frontage of about 100 feet, is to be erected in Vandon Street, Buckingham Gate, S.W., where the street is to be widened. There will be a floor space of 32,000 feet, which will be occupied by a well-known engineering firm. Messrs. P. Palgrave & Partners are the architects.

Mr. Joseph Potts, head of the firm of Messrs. Jos. Potts & Son, architects and surveyors, Newcastle-on-Tyne, has just died at the age of seventy-nine. Mr. Potts was a native of Sunderland, and joined the business with his father; he worked in Newcastle for about twenty-one years. During the last ten or twelve years Mr. Potts has resided in Harrogate.

Messrs. Donnelly & Moore, architects, of Dublin, have prepared plans for the erection of thirty-one houses in Brookfield, Blackrock, together with baths and washhouses, and twenty-four houses in Booterstown. The cost of the scheme is estimated at £20,734. The Blackrock Urban Council unanimously passed the plans and adopted the scheme at their last meeting.

The Walsall Town Council on Monday last adopted a recommendation of the Electricity Committee that plans and estimates prepared by the consulting electrical engineer (Mr. E. M. Lacey) for the provision of a new electricity generating station at Birchills be approved, and that application be made to the Local Government Board for sanction to the borrowing of £74,850 to defray the cost, including the necessary mains and auxiliary apparatus.

Mr. Richard Creed, F.R.I.B.A., of Little Bardfield Hall, Essex, and 5 Verulam Buildings, Gray's Inn, W.C., died on May 8 in his sixty-eighth year. Serving his articles under Mr. Hopkins, of Worcester, Mr. Creed acted as assistant to Messrs. Norman & Nesfield, before going into practice for himself about forty years ago. He was architect inspector to the Board of Agriculture and Fisheries for upwards of twenty-five years; and, in addition, he carried out many important works. Mr. Creed was lord of the manor of Little Bardfield.

Mr. T. H. Holloway, of Holloway Brothers (London), Ltd., contractors, died on Friday last, the 8th inst., at his residence, Cedars Road, Clapham, after a long illness. The firm, which was founded by the deceased's father about 56 years ago, have carried out such important recent London contracts as the new Admiralty Buildings, the new General Post Office, the Central Criminal Court buildings, United University Club, and the Royal Insurance buildings, St. James's. Mr. Holloway in 1905 purchased for £33,000 the manor and most of the village of West Lavington, Wilts, and last year he added 3,500 acres of an adjoining estate.

The Devon Education Committee have adopted the adjourned report of the Buildings Sub-Committee relative to their architect's department. The recommendations were that the staff should be strengthened by the addition of two draughtsmen at £75 per annum each, rising to £100, an additional clerk of the works at £120 per annum rising to £150, and an additional process printer at £19 10s. per annum rising to £25. They also recommended that the salary of the architect (Mr. P. Morris) be increased from £450 to £500, that increases should also be given to other officials, and that other office accommodation should be provided, the total immediate increased cost entailed being £531 10s. per annum, and a possible further increase (if all salaries reach the maximum) of £393.

THE
Architect and Contract Reporter.
FRIDAY, MAY 22, 1914.

EDITORIAL NOTICES.

The Editor will always be pleased to examine drawings or articles with a view to publication, but cannot be responsible for the safety of those sent, though every reasonable care will be taken. Contributors desiring payment should clearly state their wishes. No payment will be made until after publication, and a commission to prepare articles or drawings does not necessarily imply acceptance or approval

No communication can be inserted unless authenticated by the name and address of the writer—not in every case for publication, but as a guarantee of good faith.

We have upon our staff a very eminent Barrister, who will be glad to answer in the columns of this paper any legal question that may be of interest to our readers. All letters must be addressed "Legal Adviser," Office of "The Architect," Imperial Buildings, Ludgate Circus, London, E.C.

The Editor will be glad to receive from Architects in London and the Provinces results of Competitions and Tenders and other particulars of Works in progress in which they may be interested.

TENDERS, ETC.

⁂ *As great disappointment is frequently expressed at the nonappearance of Contracts Open, Tenders, &c., it is particularly requested that information of this description be forwarded to the Office, Imperial Buildings, Ludgate Circus, London, E.C., not later than 2 P.M. on Thursdays.*

COMPETITIONS OPEN.

CHESTER.—The Corporation invite designs for the erection of houses for the working classes. Premiums of £50, £25, and £10 are offered. Mr. Patrick Abercrombie, M.A., will act as assessor. Deposit £1 1*s*. Mr. J. H. Dickson, town clerk, Town Hall, Chester.

CONWAY.—The Board of Guardians invite schemes, with plans, for the laying out of a plot of land near Conway for the provision of one relieving home and four cottages homes, and for laying out of the remainder of the plot for future cottage homes, recreation grounds, &c. Premiums of £10 and £5. Commission will be paid for work carried out during the first five years from date of acceptance of a scheme. Send applications to Mr. J. W. Post, clerk to the Guardians, Union Offices, Conway.

GLASGOW.—The Tramways Committee of the Corporation of Glasgow invite designs for tramway shelter and convenience. Plan of ground and other particulars may be obtained from Mr. James Dalrymple, General Manager, 46 Bath Street, Glasgow.

GRIMSBY.—June 2.—The Building Committee of the proposed Constitutional Club invite designs for premises to be erected at the corner of Victoria Street and Upper Spring Street, at an estimated cost of £3,000. Premiums of £40, £20, and £10 are offered. Deposit of £2 2s. will be sent back on receipt of designs or on return of the particulars within 10 days. Mr. H. W. V. Sheckell, secretary, Constitutional Club, Victoria Street, Grimsby.

HYTHE.—May 30.—The Town Council invite designs for a concert hall and public shelter, for which premiums of fifty, twenty-five, and ten guineas will be awarded. Deposit £1 1*s*. (returnable). Condition, site plan, &c., may be obtained on application to Mr. Bernard C. Drake, town clerk, Hythe, Kent. (See advertisement.)

LONDON.—Sept. 7.—The London County Council invites designs for new public elementary schools at (1) Linda Street, York Road, Battersea, and (2) Billingsgate Street, Church Street, Greenwich, and has appointed Mr. John W. Simpson, F.R.I.B.A., 3 Verulam Buildings, Gray's Inn, W.C., to act as professional assessor and adviser. Deposit of £1 1*s*., payable to the Education Cashier, will be returned on receipt of a bona-fide design for either or both schools, or on the return of the particulars within one month. The Education Officer, Education Offices, Victoria Embankment, W.C. (See advertisement.)

MIDDLETON.—July 16.—The Corporation invite designs for a town hall proposed to be erected in Long Street at a cost of £18,000. Premiums of £100, £50, and £25 are offered. The assessor is Mr. Hastwell Grayson, F.R.I.B.A., M.A. Deposit £1 1*s*., which will be returned on receipt of a design. Mr. F. Entwistle, town clerk, Town Hall, Middleton.

SUNDERLAND.—June 23.—The Borough Council invite designs for a proposed secondary school, Barnes Estate, Durham Road, to accommodate 600 boys. Premiums of £100, £50, and £25 are offered. An assessor nominated by the President of the R.I.B.A. will be appointed. Deposit of £2 2*s*. will be sent back on receipt of a *bonâ-fide* design or on return of the particulars within ten days. Mr. J. W. Moncur, M.I.C.E., borough engineer and surveyor, Town Hall, Sunderland.

YORK.—The Committee of the St. Clement's Working Men's Club offer a prize of £25 for the best plans and specifications submitted in competition for the erection of a new model club. For full particulars and conditions apply to the Secretary, 3 Queen Victoria Street, York.

CONTRACTS OPEN.

ABBEYDORE AND VOWCHURCH.—May 25.—For erection and completion of three detached small farmhouses at Blackmoor Farm, parishes of Abbeydore and Vowchurch, for the Herefordshire County Council. Deposit 5*s*. Mr. B. Dear, county land agent, 132 St. Owen Street, Hereford.

ARUNDEL.—June 1.—For erection of ten cottages (two designs), adjoining Wood View, for the Town Council. Mr. A. Holmes, town clerk, Town Clerk's Offices, Arundel.

BARNSLEY.—May 27.—For all trades (in one complete tender) for erection of a sanatorium pavilion and alterations to existing buildings at Mount Vernon, near Barnsley, for the Town Council. Mr. J. H. Taylor, borough surveyor, Manor House, Barnsley.

BENTLEY.—June 3.—For proposed alterations and additions to the Bentley schools, Hants. Deposit £1 11*s*. 6*d*. Mr. A. J. Stedman, architect, South Street, Farnham.

BIRKENHEAD.—June 4.—For the execution of ordinary works and repairs to buildings in their charge in the Birkenhead district during three years from July 1, for the Commissioners of H.M. Works and Public Buildings. Deposit £1. H.M. Office of Works, &c., Storey's Gate, S.W.

(*Continued on page* 15.)

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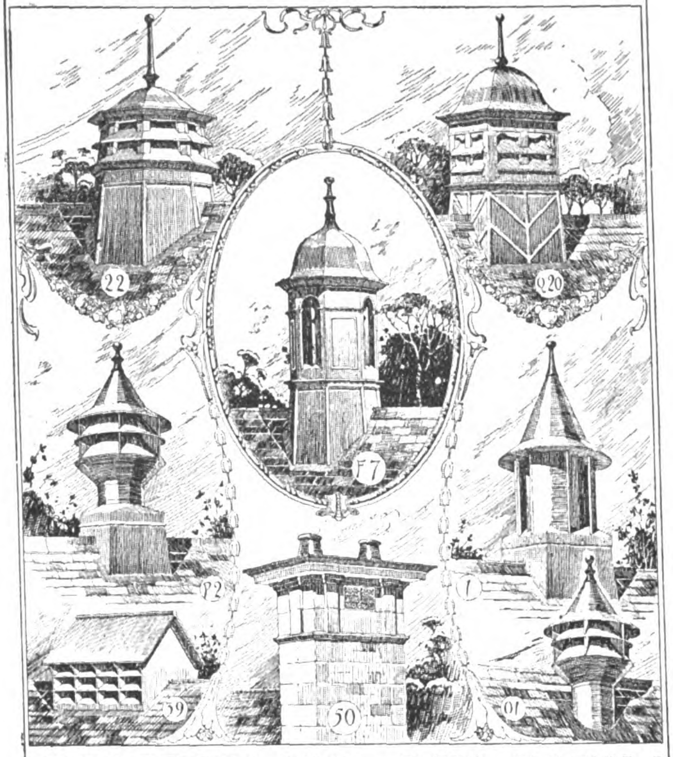

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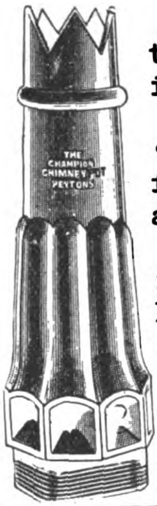

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Birmingham.—May 29.—For extension of Birmingham new parcel office, for the Commissioners of H.M. Works and Public Buildings. Deposit £1 1*s*. Mr. J. Tosh, H.M. Office of Works, &c., 42 Paradise Street, Birmingham, and H.M. Office of Works, &c., Storey's Gate, S.W.

Birmingham.—June 5.—For rebuilding Northfield Library, for the Free Libraries Committee. (Messrs. Bateman & Bateman and Alfred Hale, joint architects, 18 Bennett's Hill, Birmingham.) Send applications and £1 1*s*. deposit by May 22 to Mr. C. Silk, quantity surveyor, 33 Newhall Street, Birmingham.

Blackburn.—May 25.—For the erection of new public halls on Blakey Moor (superstructure section), for the Corporation. Deposit £1 1*s*. Messrs. Briggs, Wolstenholme & Thornley, and Messrs. Stones, Stones & Atkinson, joint architects, 10 Richmond Terrace, Blackburn.

Bodmin.—May 23.—For erection of an eight-roomed cottage at Temple Clayworks, for Mr. Frank Parkyn. Mr. W. J. P. Jenkins, Bodmin.

Bourne.—June 3.—For the various works required in erection of a sixteen-bed isolation hospital, for the Rural District Council. Deposit £1 1*s*. The Surveyor's Office, West Street, Bourne, Lincs.

Bradford.—For the various works required in erection of St. William's Church, Ingleby Road. Mr. W. H. H. Marten, Licentiate R.I.B.A., 3 Cookridge Street, Leeds.

Brentwood.—June 1.—For the construction of underground public conveniences in the High Street, for the Urban District Council. Mr. A. J. Meeson, surveyor, Town Hall, Brentwood.

Brighton.—June 8.—For the extension and completion of the collector's and account clerk's offices at the Corporation electricity works, North Road, for the Town Council. Mr. T. Garrett, Licentiate R.I.B.A., architect, 34 Ship Street, Brighton.

Brigg.—June 2.—For erection of a workhouse infirmary at Brigg, Lincs., for the Guardians of the Glanford Brigg Union. Deposit £2 2*s*. Mr. W. H. Buttrick, P.A.S.I., architect, Home Street, Scunthorpe.

Burleydam.—May 23.—For erection of a chapel at Dodsgreen, near Burleydam. Send names by May 23 to Mr. J. H. Pickard, architect, Whitchurch.

Bury St. Edmunds.—For erection of a pair of houses, York Road. Deposit £1 1*s*. Mr. S. Naish, M.S.A., architect, 7 Hatter Street, Bury St. Edmunds.

Cheadle.—May 30.—For construction of a drill hall, for the Cheshire Territorial Force Association. Deposit £1 1*s*. Messrs. John H. Davies & Sons, architects, 14 Newgate Street, Chester.

Clay Cross.—For erection of a Primitive Methodist church and school at Hepthorne Lane. Messrs. T. E. Davidson & Son, architects, 6 Grainger Street, Newcastle-on-Tyne.

Cockermouth.—June 1.—For the whole or part of the work required in erection of a theatre and two shops at Cockermouth, for the Grand Theatre and Cinema Co., Ltd. Send applications and £1 1*s*. deposit by June 1 to Mr. P. M. Hope, M.I.M.C.E., architect and civil engineer, 11 Main Street, Cockermouth.

Coltishall.—June 3.—For erection of an infants' school at Coltishall, for the Norfolk Education Committee. Send names and £1 1*s*. by May 26 to Messrs. Olley & Haward, architects, 5 Queen Street, Great Yarmouth.

Cuckfield.—May 26.—For erection of six cottages, office, stables, and stores on land in London Lane, for the Cuckfield Urban District Council. Mr. C. H. Waugh, clerk, Boltro Road, Hayward's Heath.

Doncaster.—For erection of a cinema theatre, St. Sepulchre Gate. Mr. J. Blythe Richardson, M.S.A., architect, Doncaster.

Dover.—June 1.—For erection of twelve workmen's cottages, similar to those now being erected, with all drains, boundary walls, &c., for same, to be built on sites in Beach Street, for the Town Council. Mr. W. C. Hawke, A.M.I.C.E., borough engineer, Maison Dieu House, Biggin Street, Dover.

Dunnington.—May 27.—For erection of two cottages at Dunnington, near York, for the Escrick Rural District Council. Mr. F. T. Penty, architect, Lendal Chambers, York.

Feltwell Anchor Fen.—June 3.—For the enlargement of the Feltwell Anchor Fen school and erection of a new range of offices, for the Norfolk Education Committee. Send names and £1 1*s*. deposit by May 26 to Mr. T. A. Cox, secretary, Education Office, Shire Hall, Norwich.

Gravesend.—May 25.—For the construction of switchboard platform extension and high-tension room at the electricity works, for the Town Council. The Borough Surveyor's Office, Gravesend.

Halfway House (Cornwall).—June 2.—For proposed widening in masonry of drawbridge near Halfway House, Liskeard to Bodmin main road, for the Main Roads and Bridges Committee of the Cornwall County Council. Deposit £1 1*s*. Mr. A. E. Brookes, county surveyor, County Hall, Truro.

Halifax.—June 4.—For erection of Congregational church at Highroad Well. Messrs. Glendinning & Hanson, architects, 15 Commercial Street, Halifax.

Hove.—June 3.—For constructing new underground lavatory, altering boundary fencing, and other works at Palmeira Lawn, for the Town Council. Deposit £1 1*s*. Mr. H. H. Scott, borough surveyor, Town Hall, Hove.

Huddersfield.—May 27.—For various works required to be done in erection of forty-eight workmen's dwellings (in eight separate blocks) on the Royds Hall Estate, Paddock, for the Corporation. Alternative tenders are required—(1) in stone; (2) in concrete. Mr. K. F. Campbell, M.I.C.E., borough engineer and surveyor, 1 Peel Street, Huddersfield.

Hull.—May 27.—For supply and erection of the ironwork of pig, sheep and cattle pens and alterations to existing pens. (Weight of new iron and steel about 65 tons.) Deposit £1. Mr. A. E. White, M.I.C.E., city engineer, Guildhall, Hull.

Hull.—May 29.—For partly taking down and partly rebuilding the Burstwick Hall Bridge, for the Keyingham Level Drainage Commissioners. Messrs. Todd & Thorp, civil engineers, Land of Green Ginger, Hull.

Ifton Heath.—May 26.—For the reconstruction of St. Martin's, Ifton Heath, Council school, near Gobowen, and for erection of a teacher's house, for the Salop County Council. Send names and £1 1*s*. deposit by May 26 to Mr. H. E. Wale, secretary, County Buildings, Shrewsbury.

Illogan.—May 28.—For erection and completion of new Sunday school at Illogan Downs, Cornwall. Mr. S. Hill, architect, Green Lane, Redruth.

Ireland.—May 25.—For building and completing a gentleman's residence at Kinsale. Messrs. W. H. Hill & Son, architects, 28 South Mall, Cork.

Ireland.—May 28.—For building and completing residence and business premises at Glenties, county Donegal, for Mr. Thady Campbell. Mr. J. P. M'Grath, M.R.I.A.I., architect, 6 Castle Street, Derry.

Ireland.—June 4.—For erection of a hotel at Rosses Point, about five miles from Sligo, for the Midland Great Western Railway of Ireland Co. Deposit £2 2*s*. Mr. W. Purcell O'Neill, chief engineer of the company, Broadstone Terminus, Dublin.

Ireland.—June 4.—For erection and furnishing of National school buildings at Galdanagh, county Antrim. The Ballymoney R.I.C. Barracks.

Kingston-upon-Thames.—June 6.—For erection of a urinal near the Kingston Hotel, Richmond Road. Mr. R. Hampton Clucas, borough surveyor, Municipal Offices, Kingston-upon-Thames.

Keighley.—For the masons', joiners', and slaters' works required in alterations to Aireworth Mills. Messrs. R. B. Broster & Sons, architects and surveyors, Craven Bank Chambers, Keighley.

Lanchester.—May 27.—For erection and completion of cottage homes, for the Lanchester Board of Guardians. Mr. G. T. Wilson, Licentiate R.I.B.A., architect and surveyor, 22 Durham Road, Blackhill, Durham.

Leytonstone.—May 28.—For erection and completion of an X-ray room at their infirmary, Whipps Cross Road, Leytonstone, for the Guardians of West Ham Union. The Clerk's Office, Board Room, Union Road, Leytonstone, N.E.

London.—June 17.—For repairing and painting internal and external work at their branch school, 26 to 28 Lower Clapton Road, N.E., for the Guardians of St. Leonard, Shoreditch. Mr. F. D. Smith, A.R.I.B.A., architect, Parliament Mansions, Victoria Street, S.W.

Manchester.—May 27.—For additions to administration block at Baguley sanatorium, for the Manchester Sanitary Committee. Deposit £1 1*s*. The City Architect, Town Hall, Manchester.

Manchester.—May 27.—For raising the two boilers at their institution in New Bridge Street, for the Manchester Board of Guardians. Deposit 10*s*. 6*d*. Mr. A. J. Murgatroyd, architect, 23 Strutt Street, Manchester.

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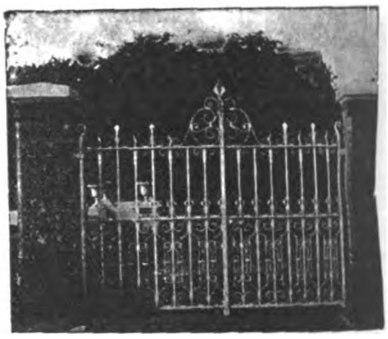

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Manchester.—May 27.—For erection of stables, motor house, &c., at Monsall Hospital. Deposit £1 1*s*. The City Architect, Town Hall, Manchester.

Manchester.—May 29.—For the whole of the work required in the construction of the headquarter buildings at Chorlton, Manchester, for the accommodation of the East Lancashire Division, Transport and Supply Column, for the East Lancashire Association Territorial Force. Deposit £1. The Surveyor, East Lancashire Association T.F., Town Hall Chambers, Ashton-under-Lyne.

Meltham.—May 25.—For any of the various works required in erection of detached house at Meltham. Send names by May 25 to Messrs. James H. Hall & Son, architects, Exchange, Huddersfield.

Middlesbrough.—June 6.—For alterations and additions at the tuberculosis dispensary, Grange Road West, for the Corporation. Mr. S. E. Burgess, M.I.C.E., borough engineer, Municipal Buildings, Middlesbrough.

Mildenhall.—May 26.—For erection of a cottage at West Row, Mildenhall, for the West Suffolk County Council. Mr. A. Ainsworth Hunt, M.S.A., architect, 51 Abbeygate Street, Bury St. Edmunds.

Nottingham.—June 6.—For erection of a six-storey warehouse, for the Trent Navigation Co. Deposit £2. Messrs. Heazell & Sons, architects, Burton Buildings, Parliament Street, Nottingham.

Ormesby.—May 26.—For the conversion of the Council offices, High Street, North Ormesby, into two dwelling-houses, for the Corporation. Mr. S. E. Burgess, M.I.C.E., borough engineer, Municipal Buildings, Middlesbrough.

Plymouth.—May 25.—For sundry alterations and works at the workhouse, for the Guardians. Forward names by May 25 to Messrs. Thornely, Rooke & Barron, architects, 11 The Crescent, Plymouth.

Ponteland.—May 29.—For extensions to the school at the cottage homes, for the Newcastle Guardians. Deposit 10*s*. Mr. G. Walker, clerk, 127 Pilgrim Street, Newcastle-upon-Tyne.

Poulton.—June 6.—For erection and completion of steel-framed buildings for the generating station in Dock Road, for the County Borough of Wallasey. Deposit £2 2*s*. Mr. J. A. Crowther, borough electrical engineer, Seaview Road, Wallasey.

Rotherham.—May 26.—For the whole of the works, including constructional steel and ironwork, required in erection of new shops and other business premises, offices, arcade, &c., in Main Street and Domine Lane, Rotherham, for the Masbro' Equitable Pioneers' Society, Ltd. Forward names and £3 3*s*. deposit by May 26 to Mr. J. Platts, architect, High Street, Rotherham.

Sale (Cheshire).—June 13. For the whole of the works required in erection of Urban Road Council school, for the Sale and Ashton-upon-Mersey District Administrative Sub-Committee for Education. (Messrs. Hoy & Sisley, architects, 199 Deansgate, Manchester.) Deposit £1 1*s*. Messrs. F. Hewitt & Son, quantity surveyors, 33 Brazennose Street, Manchester.

Scotland.—May 27. For additions to the medical superintendent's house at the city hospital, Colinton Mains, for the Edinburgh Town Council. Mr. J. A. Williamson, A.R.I.B.A., architect, Public Works Office, Edinburgh.

Scotland.—June 8.—For executing the brick, joiner, plumber, slater, plaster and tile, and painter works in connection with alterations on and additions to the administrative block at the County Sanatorim, Shotts, for Upper Ward District Committee, Lanarkshire. Mr. Fred Smith, measurer, Motherwell, and Messrs. Alex. Cullen, Lochhead & Brown, architects, Hamilton.

Scotland.—May 30.—For the following works in connection with proposed school at California, for the Grangemouth Parish School Board—viz.: mason and brick, joiner, plumber, slater, plaster, painter, and heating. Mr A. N. Malcolm, I.A., architect, Vicar Chambers, Falkirk.

Seaton Delaval (Northumberland).—May 25.—For alterations to the Council offices. Mr. A. Dorin, surveyor, Seaton Delaval, Northumberland.

Sheffield.—June 4.—For works of all trades required in extension of the town hall, for the Improvement Committee. The City Architect, Town Hall, Sheffield.

Shoreham-by-Sea.—May 26.—For additions and improvements at the Council School, for the West Sussex and Chichester Joint Education Committee. Mr. H. P. Roberts, F.R.I.B.A., county education architect, "Thurloe House," High Street, Worthing.

Southgate.—May 26.—For erection of a cottage at the open-air bath, Barrowell Green, N., for the Southgate Urban District Council. Mr. C. G. Lawson, surveyor, Council Offices, Palmers Green, N.

South Ulverston.—May 28.—For whole or separate trades in erection of church of St. Jude, South Ulverston. Messrs. Austin & Paley, architects, Lancaster.

Stockport.—May 27.—For the labour and materials in the several works required in additions and alterations to Whitehall Hospital, for the Sanatoria Committee. Mr. J. Atkinson, A.M.I.C.E., borough surveyor, Town Hall, Stockport.

Teesmouth.—June 9.—For the construction of a corrugated steel and timber lifeboat house, reinforced concrete (Considère system) launching slipway, and a timber and reinforced concrete approach at Battery Hole, adjoining the South Gare Breakwater, Teesmouth, Yorks., for the Royal National Lifeboat Institution. Deposit £1. Plans and specification may be inspected on application to the local Hon. Secretary, Mr. C. D. Bacon, 40 Albert Road, Middlesbrough, or at the office of the acting engineer and architect, Mr. A. W. Lewis, M.Inst.C.E., 15 Victoria Street, Westminster, S.W.

Tewkesbury.—June 6.—For erection of twelve workmen's dwellings, for the Town Council. Deposit £1 1*s*. Mr. Ridler, surveyor, Station Street, Tewkesbury.

Tintinhull.—May 28.—For erection of, alternatively, four and eight houses for the working classes, in the parish of Tintinhull, together with certain drainage and other work, for the Yeovil Rural District Council. Deposit £1 1*s*. Messrs. Petter & Warren, architects, Church Street, Yeovil.

Torver.—May 30.—For erecting an addition to Torver school. The Rev. R. D. Ellwood, the Rectory, Torver, Lancs.

Wakefield.—June 8.—For erection of conveniences in Warrengate, for the Corporation. Mr. J. P. Wakeford, M.I.C.E., city surveyor, Town Hall, Wakefield.

Wales.—May 25.—For erection of 100 to 200 dwelling-houses and the construction of roads, lanes, and sewers for same at Ystradmynach, for the Brynmynach Building Co., Ltd. The site adjoins Ystradmynach Station. Mr. R. H. Willson, Licentiate R.I.B.A., Aberaman, Aberdare.

Wales.—May 25.—For altering Gwalchmai C.M. chapel, and erection of new schoolroom, chapel house, stable, and coachhouse, &c., at Gwalchmai, Anglesey. Mr. T. Jones, headmaster, Council School, Gwalchmai, Anglesey.

Wales.—May 25.—For the following works, for the Glamorgan County Council: (1) additions to the Tonysguborian school, near Llantrisant; (2) repairs to the Council school, at Pontyclun; (3) removal of temporary building from Bedlinog and re-erection at Deri; (4) levelling playground and building retaining wall at the Council school at Deri; (5) painting the exterior of the temporary building at Tirphil Council school; (6) erection of new school at Fochriw; (7) painting various schools in the western division during the midsummer holidays in August. The Glamorgan County Hall, Cardiff.

Wales.—May 28.—For erection of C.M. chapel at Llanbedr, Merionethshire. Mr. R. Griffith, draper, Llanbedr.

Wales.—May 27.—For building a farmhouse at Rhosfach, Llantood, for Mr. E. F. Morgans, Maesbeddau, Eglwyswrw. Mr. L. Lewis, Licentiate R.I.B.A., architect and surveyor, Market Square, Cardigan.

Wales.—May 30.—For erection of a market hall at Crymmych. Mr. S. Davies, secretary, Station House, Crymmych.

Wales.—May 30.—For erection of four houses at Bethesda Street, Merthyr Tydfil. Mr. T. E. Rees, M.S.A., architect, Bank Chambers, Merthyr Tydfil.

Wales.—June 1.—For erection of thirty houses, in blocks, in the parish of St. Issells, Pembroke, for the Narberth Rural District Council. Twelve of the houses are to be erected at Ridgeway, ten at Kingsmoor, and eight near Kilgetty. Mr. J. P. James, architect and surveyor, Frogmore, Tenby.

Wales.—June 1.—For erection of sixteen or more houses on Penywern Fields, Dowlais, for the Penywern Building Club. Mr. T. E. Rees, M.S.A., architect, Bank Chambers, Merthyr Tydfil.

Whitby.—For villa residence, for Captain J. Wedgwood, on the Mayfield estate. Mr. H. G. Walker, M.S.A., architect and surveyor, Flowergate Chambers, Whitby.

Windsor.—June 6.—For erection of nurses' quarters at the Windsor Union Workhouse, Old Windsor. Messrs. Edgington & Spink, architects, 52 High Street, Windsor.

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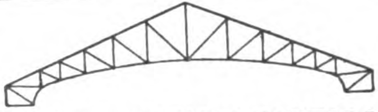

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Wilnecots.—May 26.—For erection of working-men's club and house at Hockley Road. Mr. W. H. Bettles, secretary, Hockley Road, Wilnecots.

Wolverhampton.—May 23.—For erection of an infant department (to accommodate 340 children) at the Walsall Street Council school, and alterations to the existing buildings, for the Education Committee. Send names and £1 1s. deposit by May 23 to the Accountant Clerk, Education Offices, Town Hall, Wolverhampton. Messrs. T. H. Fleeming & Son, architects, 10 Queen Square, Wolverhampton.

TENDERS.

ASPATRIA.

For the various works required in the erection of twenty workmen's dwellings at Outgang, for the Urban District Council.

Accepted tenders.

Building, Hill, Carlisle	£2,831	0	0
Joinery, Milburn, Keswick	1,256	14	8
Plumbing, Baty, Carlisle	649	5	6
Plastering, Nicholson, Wigton	518	5	0
Slating, Hewitson, Carlisle	311	14	6
Painting, Carrick, Wigton	117	8	9

BRISTOL.

For the erection of additions to the official block of the infirmary buildings at Southmead, for the Guardians. Mr. W. S. Skinner, F.R.I.B.A., architect, Bristol. Quantities by Messrs. W. L. Bernard & Son.

Hy. Pittard & Son, Bristol and Langport (*provisionally accepted*)	£1,900	0	0

BURTON-ON-TRENT.

For the extension of their refuse destructor at Bond End, for the Town Council. Mr. G. T. Lynam, borough engineer and surveyor, Burton-on-Trent.

Manlove, Alliott & Co., Nottingham.

GLOSSOP.

For the erection of a nave and aisles at All Saints parish church. Messrs. C. & C. M. Hadfield, architects, Sheffield. Quantities by Mr. L. A. Francis, 8 John Street, Adelphi, W.C.

Rathbone & Sons	£4,961	10	0
Moss & Sons	4,840	0	0
Pask & Thorpe	4,779	0	0
Howard & Son	4,731	0	0
Middleton Bros.	4,716	6	9
Goddard	4,680	16	0
Nicholson & Son, Ltd.	4,500	0	0
Dawson & Jones	4,475	0	0
Eshelby & Son	4,430	0	0
J. Fidler, Ltd.	4,310	0	0
Robinson & Sons	4,232	0	0
Bridgman & Sons, Lichfield (*accepted*)	3,927	0	0

GRIMSBY.

For the construction of a 2-foot diameter sewer in Laceby Road. Mr. H. Gilbert Whyatt, M.Inst.C.E., borough engineer and surveyor, Grimsby.

Hewins & Goodhand	£495	10	0
Wilkinson & Houghton	480	0	0
Thompson & Sons	444	0	0
Swaby & Walsham	374	10	0
Kirton	366	8	9
Yewdall	362	16	5
Holmes & Co.	350	15	3
Taylor & Richardson, Grimsby (*accepted*)	344	8	0

LONDON.

For rebuilding part of Clerkenwell fire station, for the London County Council.

Garrett & Son	£18,400	0	0
Monk	18,135	0	0
Roberts & Co.	17,836	0	0
Brand, Pettit & Co.	17,593	0	0
Akers & Co.	17,497	0	0
Holloway	16,359	0	0
W. E. Blake, Ltd., Stevenage Road, Fulham, S.W. (*recommended*)	16,352	0	0
Architect's estimate	16,400	0	0

LONDON—*continued.*

For reconstruction of the police station at Hornsey. Mr. J. Dixon Butler, F.R.I.B.A., New Scotland Yard, S.W.

Sheffield Bros.	£5,990	0	0
Godson & Sons	5,960	0	0
Stevens & Sons	5,921	0	0
Monk	5,854	0	0
Jarvis & Sons	5,820	0	0
Cotrell, Ltd.	5,780	0	0
Willmott & Sons	5,743	0	0
Fairhead & Son	5,555	0	0
Dove Bros.	5,473	0	0
Perry & Co.	5,458	0	0
Wall, Ltd.	5,345	0	0
Rowley	5,307	0	0
Sabey & Son	5,276	0	0

For erection of a police section-house at Ixworth Place, Chelsea. Mr. J. Dixon Butler, F.R.I.B.A., New Scotland Yard, S.W.

D. W. Barker & Co.	£16,134	0	0
Sheffield Bros.	15,900	0	0
Jarvis & Sons	15,850	0	0
Lorden & Sons	15,840	0	0
Willett	15,814	0	0
Sabey & Sons	15,782	0	0
Lawrence & Sons	15,692	0	0
Willmott & Sons	15,675	0	0
Godson & Sons	15,526	0	0
Perry & Co.	15,490	0	0
F. & H. Higgs	15,340	0	0
Roome & Co.	15,284	0	0
J. Garlick, Ltd.	15,282	0	0
Holiday & Greenwood	15,189	0	0
Taylor & Co.	15,100	0	0
Adamson & Sons	15,041	0	0
Patman & Fotheringham	14,971	0	0
Dickens	14,937	0	0
Higgs & Hill	14,884	0	0
Monk	14,795	0	0

NANTYGLO.

For extensive alterations and additions to the Blaina and District Cottage Hospital, near Nantyglo. Mr. E. A. Johnson, F.R.I.B.A., architect, Abergavenny.

Jones	£6,300	0	0
Broad	5,180	0	0
Thomas & Sons	4,939	0	0
Smith	4,899	0	0
W. T. Nicholls, Gloucester (*accepted*)	4,689	0	0

NEWCASTLE-UNDER-LYME.

For the erection of three blocks of workmen's dwellings in Lower Green, Castle Hill Road, and Stamer Street, numbering twenty-nine houses in all, for the Town Council.

G. Rowe & Son, Newcastle-under-Lyme (*accepted*)	£4,355	0	0

TEWKESBURY.

For rebuilding premises, No. 114 High Street, for the Gloucester Co-operative and Industrial Society, Ltd. Mr. Thomas Malvern, Licentiate R.I.B.A., architect, 21 Winchcombe Street, Cheltenham.

Knox	£1,712	0	0
Collins & Godfrey	1,659	0	0
Jones	1,544	0	0
Coutts & Howell	1,540	18	0
A. Wilson & Son, Cheltenham (*accepted*)	1,537	0	0

WETHERBY.

For the various works required in erection of business premises, Crossley Street, for the Wetherby and District Co-operative Society. Mr. J. Houfe, architect and surveyor, Harrogate.

Accepted tenders.

Building, G. Illingworth, Wetherby.
Joinery, C. E. Crow, Wetherby.
Plumbing, J. Hodgson, Wetherby.
Slating, Luty, Harrogate.
Plastering, A. Calverley, Harrogate.
Painting, J. Hoffman, Wetherby.
Ironwork, Leeds Steel Works.
The total cost will be over £1,600.

MARBLE DECORATION AT THERMAL BATHS, BUXTON.

In the extensive alterations to the thermal baths, Buxton, now nearing completion, it may be noted that the marbles in the entrance hall and vestibules are entirely of British production, with the exception of the skirting or plinth course. The wall above is alternately of Derbyshire Chellaston marble and rich green Connemara marble. Chellaston marble is rich and varied, being vivid splashes of purples, reds, and greens on a pale creamy ground.

The pavement is in a panelled treatment in black and white marbles, with green insets.

The Roman baths are faced with white marble, and the floors of all the bath and massage rooms, corridors, &c., are laid in "Patteson's white marble adamant terrazzo" with dove margins.

The divisions to the dressing-rooms, &c., are in the firm's "Special Marble Granito Slabs" with reinforced centres, and finished on the surfaces with a sprinkling of crushed pearl.

The contract has been excellently executed by the well-known firm of marble, granite, and mosaic workers, Messrs. J. & H. Patteson, of Manchester. This firm also carried out the marble and mosaic decorations at the new pump room, which was recently opened.

WHITSUNTIDE HOLIDAYS.

For spending Whitsuntide on the Continent the Great Eastern Railway Co.'s Hook of Holland route offers exceptional facilities. Passengers leaving London in the evening arrive at Amsterdam, The Hague, &c., the following morning. From the Hook of Holland through carriages and restaurant cars run in the North and South German express trains. Reduced fares will be issued by the Harwich-Antwerp route for Brussels. Tickets dated in advance can be obtained at the Liverpool Street Station Continental inquiry or booking office. The Danish Royal Mail steamers of the Forenede Line of Copenhagen will leave Harwich for Esbjerg on Friday, May 29, and May 30. The Swedish Royal Mail steamer of the Thule line of Gothenburg will leave Harwich for Gothenburg on Saturday, May 30. The General Steam Navigation Co.'s steamers will leave Harwich for Hamburg on Wednesday, May 27, and May 30.

The cheap tickets to the Continent which are issued by the South Eastern and Chatham Railway Co. during Whitsuntide have proved in former years a great attraction to those who desire a short holiday in France, Belgium, and Holland, and doubtless this year a still larger number will avail themselves of the special facilities. Full details of these Whitsuntide tours will be found in the Continental holiday programme, to be obtained at Charing Cross and Victoria (S.E. and C.R.) inquiry offices.

For those who prefer this side of the Channel, an accelerated service of trains has been arranged by the S.E. and C.R. for Saturday, May 30, and the following Sunday and Monday. Special week-end return tickets will be issued. Particulars of the home excursions, extensions of time for certain return tickets, alterations in train services, &c., are given in the special holiday programme and bills, also train service supplement, to be obtained at any of the Company's agencies or stations.

VARIETIES.

The will of Mr. Joseph Earnshaw, of Carlton House, Bridlington, architect and surveyor, has been proved at £35,257.

The Newcastle Education Committee have accepted a recommendation for the erection of two schools in the east end of the city viz., a junior day technical school for 150 boys and a secondary school for boys.

Aberdeen City District Lunacy Board has approved of a plan for additional accommodation at Kingseat Asylum by the erection of a combined hospital villa for both sexes. The estimated cost is £12,250, exclusive of furnishings.

Mr. George Kett, of Cambridge, head of the well-known firm of builders, Rattoe & Kett, died recently. A very considerable amount of important work was entrusted to him.

Messrs. Freeman & Hodgson, architects, have prepared a design for the new laboratories which it is proposed to erect at the Rothamstead Agricultural Experimental Station, Harpenden, at a cost of £12,000.

The West Stanley (Durham) Urban Council have adopted a scheme for the erection of 156 houses—68 to be let at 6*s*. per week and 88 at 7*s*. per week—on the Pea Farm, Oxhill. The total cost, including land, sewerage, &c., is estimated at £40,500.

The County Council of Lanarkshire have approved a scheme for the erection of fifty houses of different types, under the Housing of the Working Classes Acts, at an estimated cost of £10,729 at Cleland, and 100 houses of different types at Harthill at an estimated cost of £20,854.

An important order for strong rooms and a large safe deposit in Argentina has been obtained by Lips, Ltd., Kingsway House, Kingsway, London, W.C., bankers' engineers. Those who are interested in fire and burglar proof safes, and in high-class locks, will find a good collection in Messrs. Lips' showroom in Kingsway. Their patent motor lock will put a stop to joy rides and thefts of motor-cars.

The Woking Urban District Council last week finally approved Mr. Midgley Taylor's No. 2 scheme—partial bacterial and subsequent land treatment—for improving the means of purification at the sewage farm, and decided to apply to the Local Government Board for permission to borrow £18.600 for this purpose.

Messrs. Henry Holloway Brothers, Ltd., Westminster, have received from the Cumberland County Council the contract for the erection of a new bridge at Floriston, to substitute the old "Metal Bridge." The tender was for £17,286 14*s*. 6*d*., being £15.829 14*s*. 9*d*. for new ferro-concrete bridge, and £1,456 19*s*. 9*d*. for road works and approaches.

The Kingstown (Ireland) Urban Council at a meeting on Monday last decided to advertise for an architect to prepare all plans and specifications in relation to their artisans' dwellings building scheme at Glasthule, Monkstown, and Byrne's Field at Sallynoggin, at a fee of 2½ per cent. on the accepted contract, and for a quantity surveyor to prepare approximate estimates, &c., of the various dwellings at a fee of 20*s*. per cent.

The Finance Committee of the Brighton Town Council have reported on the proposal of the Education Committee to erect a school at Patcham at a cost of £22.606. The plans provide for a single-storey building, class-rooms for forty to forty-eight scholars instead of sixty, swimming and shower baths, and domestic centre. The committee question whether these advantages over old methods are sufficient to justify the extra cost, £22.606, as compared with £15.254, or £31 16*s*. per head, instead of £21 9*s*. 8*d*., and urge the Town Council to give the matter their careful consideration.

The Liverpool City Council invite applications before May 29 for the post of land steward and surveyor to the Corporation. The gentleman to be appointed must be experienced in his profession, and have a knowledge of architecture and building construction. He must not be more than forty-five years of age. He will be required to devote his whole time and attention to the duties of the office, and be prohibited from engaging in any other business or employment whatever. The salary will be £1.200 per annum, and suitable offices, with assistants, clerks, stationery, &c., will be provided.

TRADE NOTES.

Messrs. S. P. Bidder & Co., Blackfriars Street, Manchester, have secured the contract to take down a chimney at the Regent Road gasworks, Salford.

The Brightside Foundry and Engineering Co., Ltd., of Sheffield, carried out the whole of the heating and ventilating installation at the new King Edward VII. Galleries at the British Museum, which were formally opened by the King.

Messrs. George Mills & Co., Radcliffe, near Manchester, have received the following account of the behaviour of their "Titan" Sprinkler at a recent fire at the Scot Mill, Oldham: "A fire broke out at our Scot Mill on Monday last (the 11th inst.), about eleven o'clock A.M., in the cotton opener, caused by some hard substance coming in contact with beater. I am glad to say the sprinklers which you erected in our mill some time ago acted very quickly, and extinguished the fire before much damage was done. This is the second fire we have had put out with the sprinklers."

THE
Architect and Contract Reporter.
FRIDAY, MAY 29, 1914.

EDITORIAL NOTICES.

The Editor will always be pleased to examine drawings or articles with a view to publication, but cannot be responsible for the safety of those sent, though every reasonable care will be taken. Contributors desiring payment should clearly state their wishes. No payment will be made until after publication, and a commission to prepare articles or drawings does not necessarily imply acceptance or approval

No communication can be inserted unless authenticated by the name and address of the writer—not in every case for publication, but as a guarantee of good faith.

We have upon our staff a very eminent Barrister, who will be glad to answer in the columns of this paper any legal question that may be of interest to our readers. All letters must be addressed "Legal Adviser," Office of "The Architect," Imperial Buildings, Ludgate Circus, London, E.C.

The Editor will be glad to receive from Architects in London and the Provinces results of Competitions and Tenders and other particulars of Works in progress in which they may be interested.

TENDERS, ETC.

⁂ *As great disappointment is frequently expressed at the nonappearance of Contracts Open, Tenders, &c., it is particularly requested that information of this description be forwarded to the Office, Imperial Buildings, Ludgate Circus, London, E.C., not later than* 2 P.M. *on Thursdays.*

COMPETITIONS OPEN.

CHESTER.—The Corporation invite designs for the erection of houses for the working classes. Premiums of £50, £25, and £10 are offered. Mr. Patrick Abercrombie, M.A., will act as assessor. Deposit £1 1*s*. Mr. J. H. Dickson, town clerk, Town Hall, Chester.

CONWAY.—The Board of Guardians invite schemes, with plans, for the laying out of a plot of land near Conway for the provision of one relieving home and four cottages homes, and for laying out of the remainder of the plot for future cottage homes, recreation grounds, &c. Premiums of £10 and £5. Commission will be paid for work carried out during the first five years from date of acceptance of a scheme. Send applications to Mr. J. W. Post, clerk to the Guardians, Union Offices, Conway.

GLASGOW.—The Tramways Committee of the Corporation of Glasgow invite designs for tramway shelter and convenience. Plan of ground and other particulars may be obtained from Mr. James Dalrymple, General Manager, 46 Bath Street, Glasgow.

LONDON.—Sept. 7.—The London County Council invites designs for new public elementary schools at (1) Linda Street, York Road, Battersea, and (2) Billingsgate Street, Church Street, Greenwich, and has appointed Mr. John W. Simpson, F.R.I.B.A., 3 Verulam Buildings, Gray's Inn, W.C., to act as professional assessor and adviser. Deposit of £1 1*s*., payable to the Education Cashier, will be returned on receipt of a bona-fide design for either or both schools, or on the return of the particulars within one month. The Education Officer, Education Offices, Victoria Embankment, W.C. (See advertisement.)

MIDDLETON.—July 16.—The Corporation invite designs for a town hall proposed to be erected in Long Street at a cost of £18,000. Premiums of £100, £50, and £25 are offered. The assessor is Mr. Hastwell Grayson, F.R.I.B.A., M.A. Deposit £1 1*s*., which will be returned on receipt of a design. Mr. F. Entwistle, town clerk, Town Hall, Middleton.

SUNDERLAND.—June 23.—The Borough Council invite designs for a proposed secondary school, Barnes Estate, Durham Road, to accommodate 600 boys. Premiums of £100, £50, and £25 are offered. An assessor nominated by the President of the R.I.B.A. will be appointed. Deposit of £2 2*s*. will be sent back on receipt of a *bonâ-fide* design or on return of the particulars within ten days. Mr. J. W. Moncur, M.I.C.E., borough engineer and surveyor, Town Hall, Sunderland.

YORK.—The Committee of the St. Clement's Working Men's Club offer a prize of £25 for the best plans and specifications submitted in competition for the erection of a new model club. For full particulars and conditions apply to the Secretary, 3 Queen Victoria Street, York.

CONTRACTS OPEN.

ABERDARE.—June 9.—For erection of platform coverings at Aberdare Station, Mon., for the Great Western Railway Co. The Engineer, Newport Station, Mon.

BARGOED.—June 6.—For erection of sixteen or more semi-detached dwelling-houses at Bargoed, for the Gilfach-Fargoed Garden Suburb, Ltd. Mr. G. Kenshole, M.S.A., Station Road, Bargoed.

BARNOLDSWICK.—June 2.—For erection and completion of a new building, sanitary conveniences, and slipper bath connected with the Ivory Hall Club. The Steward, Ivory Hall Club, Barnoldswick.

BASINGSTOKE.—June 8.—For erection of twenty-eight cottages in Cranbourne Lane. Deposit £1 1*s*. Mr. F. R. Phipps, A.M.I.C.E., F.S.I., borough engineer, Basingstoke.

BECKERMET.—June 2.—For the various trades (with the exception of carpenter, joiner, and painter) required in erection and completion of a pair of semi-detached houses at Beckermet, Cumberland, for Mr. J. Storey. Mr. I. J. Postlethwaite, Fern Lea, Seascale.

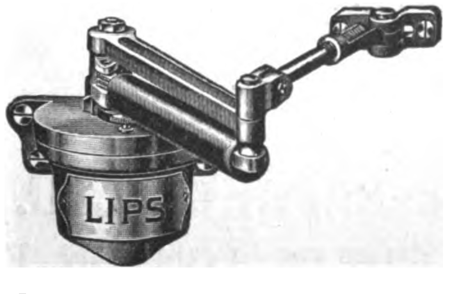
BEDWELTY.—June 8.—For the building of concrete and brick foundations for two additional ward blocks at the Council's isolation hospital, for the Urban District Council. Mr. D. H. Price, surveyor to the Council, Aberbargoed.

BIRKENHEAD.—June 4.—For the execution of ordinary works and repairs to buildings in their charge in the Birkenhead district during three years from July 1, for the Commissioners of H.M. Works and Public Buildings. Deposit £1. H.M. Office of Works, &c., Storey's Gate, S.W.

BLAENAVON.—June 23.—For erection of fifty houses, with appurtenant works, including the erection of boundary walls, the formation and ballasting of roads, and the construction of sewers, &c., for the Blaenavon Urban District Council. Deposit £2 2*s*. Mr. E. W. Edwards, surveyor, Council Offices, Blaenavon.

(*Continued on page* 15.)

THE "ALL-IN-ONE"



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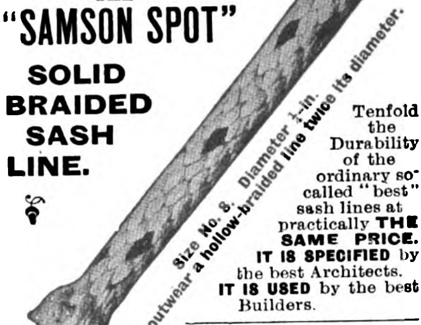
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Blaina.—June 4.—For erection of a school hall, classrooms, &c., at Blaina, Mon. Mr. R. Smith, secretary, "Arfron," New Bennett Street, Blaina, Mon., or Mr. W. B. Rees, architect, 3 Dumfries Place, Cardiff.

Bolton.—June 11.—For the execution of ordinary works and repairs to buildings in their charge in the Bolton district during three years from July 1, for the Commissioners of his Majesty's Works and Public Buildings. Deposit £1. H.M. Office of Works, &c., Storey's Gate, S.W.

Bourne.—June 3.—For the various works required in erection of a sixteen-bed isolation hospital, for the Rural District Council. Deposit £1 1*s.* The Surveyor's Office, West Street, Bourne, Lincs.

Bradford.—June 8.—For the excavator, mason, and bricklayer's work required in the formation of a new entrance, &c., at St. James's Market, for the Corporation. The City Architect, Town Hall, Bradford.

Bridlington.—June 4.—For (1) bricklayers' work; (2) joiners' work; or (3) plumbing work in connection with the erection of two houses, south side St. John's Avenue, East, for Mr. J. V. Mainprize, J.P. Mr. J. E. Earnshaw, architect, Carlton House, Wellington Road, Bridlington.

Brighton.—June 8.—For the extension and completion of the collector's and account clerk's offices at the Corporation electricity works, North Road, for the Town Council. Mr. T. Garrett, Licentiate R.I.B.A., architect, 34 Ship Street, Brighton.

Canterbury.—June 3.—For erection of a theatre and works in connection therewith, for the St. George's Canterbury Theatre Co., Ltd. Deposit £2 2*s.* Messrs. Jennings & Gray, architects, 4 St. Margaret's Street, Canterbury.

Chartham Downs (near Canterbury).—June 18.—For erection of a new bakery, new workrooms, additions to farm buildings, and other works in connection therewith at the Kent County Lunatic Asylum (Contract No. 2). Deposit £10. Mr. W. J. Jennings, architect, 4 St. Margaret's Street, Canterbury. (See advertisement.)

Cheadle Hulme.—June 2.—For branch premises, Mellor Street, Cheadle Hulme, for the Stockport Industrial and Equitable Co-operative Society, Ltd. Deposit £1 1*s.* Messrs. Wrathmell & Blackshaw, Licentiates R.I.B.A., FF.M.S.A., architects, St. Peter's Square, Stockport.

Cheshire.—June 6.—For the following building and other works, for the Cheshire County Council—viz.: Woolstanwood estate, near Crewe and Nantwich—alterations and repairs to existing farm, dwelling-house, and farm buildings. Worleston estate, near Nantwich—erection of one single dwelling-house and two sets of farm buildings; alterations, additions, and repairs to existing farm, dwelling-house, and farm buildings; conversion of two existing cottages into one dwelling-house. Ledsham estate, near Chester—painting all external wood and ironwork and colour-washing rough cast to some twenty dwelling-houses and sets of farm buildings. The Estate Office, 10 Wellington Road, Nantwich, and Mr. W. H. Lancaster, county land agent, 49 Northgate Street, Chester.

Chester-le-Street.—May 30.—For extension of the administrative block at the isolation hospital. Send application and £2 2*s.* deposit by May 30 to Mr. J. H. Mole, 9 Ivanhoe Terrace, Chester-le-Street.

Cattistock.—June 4.—For erection of stables and a cottage at Cattistock, near Maiden Newton, for the Committee of the Cattistock Hunt, Dorset. Mr. F. T. Maltby, A.M.I.C.E., architect and surveyor, South Street, Dorchester, Dorset.

Coates-in-Whittlesey.—June 4.—For erection of twelve cottages near Coates-in-Whittlesey, for the Whittlesey Rural District Council. Mr. A. W. Ruddle, architect, 6 Long Causeway, Peterborough.

Copmanthorpe.—June 12.—The West Riding Education Committee invite whole or separate tenders for the following works at Copmanthorpe Council school—viz.: additions and alterations (builder, joiner, plumber, plasterer and painter). The Education Architect, County Hall, Wakefield. Send £1 deposit by separate letter to the West Riding Treasurer, County Hall, Wakefield.

Costessey (Norfolk).—June 8.—For building three pairs of cottages at Costessey, for the Forehoe Rural District Council. Deposit £2 2*s.* Mr. J. O. Bond, architect, 29 Castle Meadow, Norwich.

Cross Hands.—For the rebuilding and enlarging of the Farmers' Arms Hotel, Cross Hands, Mon., for Messrs. the Felinfoel Brewery Co., Ltd. Deposit £1 1*s.* Messrs. W. Griffiths, F.S.I., & Son, architects, Llanelly.

Downham Market.—June 18.—For erection and maintenance of a pumping station adjoining the existing station at Southery Downham Market, for the Feltwell New Fen Drainage Commission. Deposit £5. Mr. E. J. Silcock, M.I.C.E., Sanctuary House, 33 Tothill Street, Westminster, S.W., and 10 Park Row, Leeds.

Exeter.—June 10.—For building a manual instruction centre at the Newtown boys' school, for the Exeter Education Committee. Mr. J. Jerman, F.R.I.B.A., architect, 1 Bedford Circus, Exeter.

Farnham.—June 15.—For erection of new workshops and alterations to dining hall at the workhouse, for the Guardians. Send applications and £1 1*s.* deposit by June 3 to Messrs. Kingham & Kingham, architects, Bank House, Grosvenor Road, Aldershot.

Gloucester.—June 10.—For the execution of ordinary works and repairs to buildings in their charge in the Gloucester district during three years from July 1, for the Commissioners of His Majesty's Works and Public Buildings. H.M. Office of Works, &c., Storey's Gate, S.W.

Glyncorrwg.—May 30.—For manager's house at Glyncorrwg, for the Blaencorrwg Colliery Co., Ltd. Send names and £1 1*s.* deposit by May 30 to Messrs. Ivor Jones & Percy Thomas, architects, 6 and 7 St. John's Square, Cardiff.

Halifax.—June 4.—For erection of Congregational church at Highroad Well. Messrs. Glendinning & Hanson, architects, 15 Commercial Street, Halifax.

Harrogate.—June 8.—For building a power and exhauster house at the gasworks, Ripon Road, for the Harrogate Gas Co. Deposit £2 2*s.* Mr. F. H. Robinson, A.M.I.C.E., the Gasworks, Harrogate.

Hill End.—June 23.—For erection of additions and alterations to the Hertfordshire County Asylum, Hill End, St. Albans, for the Visiting Committee. Send applications and £5 deposit by June 4 to Messrs. G. T. Hine & Pegg, architects, 35 Parliament Street, Westminster, London, S.W.

Horden.—June 6.—For altering large hall, to convert same into picture palace, also erection of large timber gangway from street to hall, for the Horden Workmen's Social Club, Ltd. Mr. T. Crake, secretary, 41 Thirteenth Street, Horden, Sunderland.

Howgrave.—June 5.—For erection of a Wesleyan chapel at Howgrave, near Masham. Mr. T. Stokes, architect, Thirsk.

Ireland.—June 2.—For erection of thirty-three artisans' dwellings on three different sites, for the Carlow Urban District Council. Tenders will be taken for the erection of houses on each plot separately—viz.: thirteen two-storeyed houses on Granby Row; seven two-storeyed houses on Granby Row; thirteen two-storeyed houses on Staplestown Road. Mr. W. A. Lawler, town clerk, Town Hall, Carlow.

Ireland.—June 4.—For erection of a hotel at Rosses Point, about five miles from Sligo, for the Midland Great Western Railway of Ireland Co. Deposit £2 2*s.* Mr. W. Purcell O'Neill, chief engineer of the company, Broadstone Terminus, Dublin.

Ireland.—June 4.—For erecting a National School at Mucklagh Aughrim, Co. Wicklow. Rev. M. F. Hoey, P.P., Presbytery, Aughrim, Co. Wicklow.

Ireland.—June 6.—For erecting a national school at Kirkhills, Ballymoney. Mr. R. C. Martin, solicitor, Ballymoney.

Ireland.—June 18.—For erection and completion of a technical institute in the city of Galway. Mr. A. Macdonald, architect, Francis Street, Galway.

Littlehampton.—June 3.—For erection complete of a temporary hospital containing two wards of four beds each with usual offices, for the Urban District Council. Tenders to be accompanied by plans and specifications. Mr. A. Shelley, clerk, Town Offices, Littlehampton.

London.—June 10.—For alterations to Woolwich branch post office, for the Commissioners of H.M. Works and Public Buildings. Deposit £1 1*s.* Mr. A. R. Myers, H.M. Office of Works, 16 Queen Anne's Gate, S.W.

London.—June 15.—For cleansing, painting, and repairing various schools during the summer vacation, for the West Ham Education Committee. Send applications and £1 deposit by June 8 to Mr. W. Jacques, A.R.I.B.A., architect, 2 Fen Court, Fenchurch Street, E.C.

London.—June 17.—For repairing and painting internal and external work at their branch school, 26 to 28 Lower Clapton Road, N.E., for the Guardians of St. Leonard, Shoreditch. Mr. F. D. Smith, A.R.I.B.A., architect, Parliament Mansions, Victoria Street, S.W.

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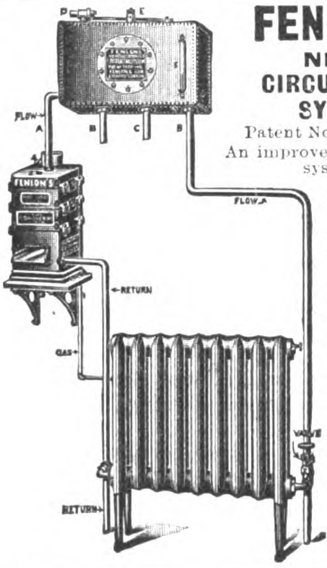

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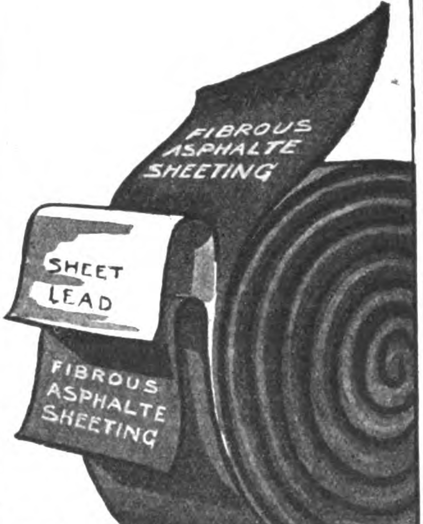

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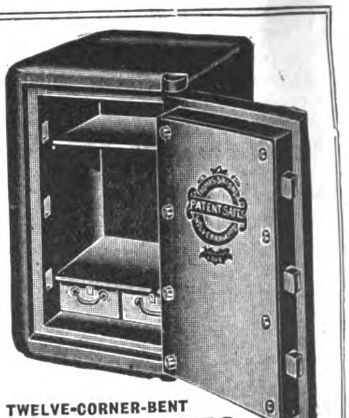

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MANCHESTER.—June 4.—For the demolition of existing shop and office premises and the execution of foundation contract for the extension of the Royal Exchange, for the Directors of the Manchester Royal Exchange, Ltd. Send applications and £1 1*s.* deposit by June 4 to Messrs. Bradshaw, Gass & Hope, architects, 19 Silverwell Street, Bolton.

MANCHESTER.—June 10.—For the works required in extension of education offices, Deansgate, for the Education Committee, each section to be let separately as follows: (1) excavator, drainer, concretor, and bricklayer; (2) asphalter; (3) stonemason; (4) slater; (5) carpenter, joiner, and iron and steel fixer; (6) cast ironwork (no fixing); (7) wrought ironwork (no fixing); (8) plumber and glazier; (9) plasterer and painter; (10) supply of red terra cotta. Deposit £1 1*s.* Education Offices, Deansgate, Manchester.

MIDDLETON.—June 6.—For plasterer's work in connection with erection of sanatorium at Middleton, near Ilkley, for the West Riding Public Health and Housing Committee. The West Riding Architect, County Hall, Wakefield. Send £1 deposit to the West Riding Treasurer, County Hall, Wakefield.

PENZANCE.—June 9.—For erection of a road motor depôt at Leskinnick Street, for the Great Western Railway Co. The Engineer, North Road Station, Plymouth.

PORTSMOUTH.—June 23.—For erection of a public elementary school in Wimborne Road, Southsea, for the Portsmouth Education Committee. Deposit £3 3*s.* Mr. C. C. Vernon-Inkpen, F.S.I., architect, 40 Commercial Road, Portsmouth.

POULTON.—June 6.—For erection and completion of steel-framed buildings for the generating station in Dock Road, for the County Borough of Wallasey. Deposit £2 2*s.* Mr. J. A. Crowther, borough electrical engineer, Seaview Road, Wallasey.

RAMSBURY.—June 1.—For erection of two or three pairs of semi-detached dwellings in Ramsbury village, Hungerford. Mr. W. Strickland, surveyor, Hungerford.

ST. MEWAN.—June 6.—For the remodelling of offices at the St. Mewan Council school, for the Cornwall Education Committee. Mr. B. C. Andrew, architect to the committee, Biddick's Court, St. Austell.

SALE (CHESHIRE).—June 13.—For the whole of the works required in erection of Urban Road Council school, for the Sale and Ashton-upon-Mersey District Administrative Sub-Committee for Education. (Messrs. Hoy & Sisley, architects, 199 Deansgate, Manchester.) Deposit £1 1*s.* Messrs. F. Hewitt & Son, quantity surveyors, 33 Brazennose Street, Manchester.

SCOTLAND.—June 3.—For mason, joiner, plumber, and plaster works in connection with additions to farm steading, Bangour, for the Edinburgh District Board of Control. Mr. J. Kyd, clerk and treasurer, Chambers, Castle Terrace, Edinburgh.

SCOTLAND.—June 8.—For the several works required in additions and alterations at the Western Police Buildings, Cranston Hill, for the Glasgow Corporation. The Office of Public Works, City Chambers, 64 Cochrane Street, Glasgow.

SCOTLAND.—June 8.—For executing the brick, joiner, plumber, slater, plaster and tile, and painter works in connection with alterations on and additions to the administrative block at the County Sanatorim, Shotts, for Upper Ward District Committee, Lanarkshire. Mr. Fred Smith, measurer, Motherwell, and Messrs. Alex. Cullen, Lochhead & Brown, architects, Hamilton.

SCOTLAND.—June 13.—For the following works required in connection with the construction of a public convenience in Greendyke Street, Glasgow—viz.: mason, brick, joiner, &c., works; and (2) sanitary fittings—for the Corporation. The Office of Public Works, City Chambers, 64 Cochrane Street, Glasgow.

SHEFFIELD.—May 31.—For erection of a children's hospital at the workhouse, for the Guardians of Eccleshall Bierlow Union. Deposit £1 1*s.* by May 31 to Mr. A. W. Kenyon, architect, 8A George Street, Sheffield.

SHEFFIELD.—June 4.—For supply of materials and works required in connection with the erection of a transformer sub-station at the junction of Clarke House Road and Glossop Road, for the Electric Supply Committee. Deposit £1 1*s.* Mr. S. E. Fedden, general manager and engineer, the Offices, Commercial Street, Sheffield.

SHEFFIELD.—June 4.—For the supply and erection of a steel structure to carry a coke telpher and coal hoppers at their Grimesthorpe station, for the Sheffield United Gaslight Co. Mr. J. W. Morrison, M.I.C.E., Commercial Street, Sheffield.

SHEFFIELD.—June 4.—For works of all trades required in extension of the town hall, for the Improvement Committee. The City Architect, Town Hall, Sheffield.

SOUTHAMPTON.—June 10.—For the execution of ordinary works and repairs to buildings in their charge in the Southampton district during three years from July 1, for the Commissioners of his Majesty's Works and Public Buildings. Deposit £1. H.M. Office of Works, &c., Storey's Gate, S.W.

SOUTHWELL.—June 4.—For erection of additional wards at the workhouse infirmary, Upton Road. Messrs. Sands & Walker, engineers, Milton Chambers, Nottingham.

TEESMOUTH.—June 9.—For the construction of a corrugated steel and timber lifeboat house, reinforced concrete (Considère system) launching slipway, and a timber and reinforced concrete approach at Battery Hole, adjoining the South Gare Breakwater, Teesmouth, Yorks., for the Royal National Lifeboat Institution. Deposit £1. Plans and specification may be inspected on application to the local Hon. Secretary, Mr. C. D. Bacon, 40 Albert Road, Middlesbrough, or at the office of the acting engineer and architect, Mr. A. W. Lewis, M.Inst.C.E., 15 Victoria Street, Westminster, S.W.

WAKEFIELD.—June 8.—For erection of conveniences in Warrengate, for the Corporation. Mr. J. P. Wakeford, M.I.C.E., city surveyor, Town Hall, Wakefield.

WALES.—For the erection of 400 houses near Cardiff. Builders may tender for a part or the whole of the 400. Builders who wish to tender are asked to communicate immediately, giving full particulars of work they have previously carried out, with Mr. W. Beddoe Rees, architect, 3 Dumfries Place, Cardiff.

WALES.—May 30.—For erection of offices and printing works at Welshpool, for *The County Times.* Send applications by May 30 to Messrs. Shayler & Ridge, architects, Oswestry.

WALES.—June 3.—For stripping and re-roofing the four stone cottages adjoining the gasworks, Abergavenny, for the Town Council. The Borough Surveyor, Town Hall, Abergavenny.

WALES.—June 4.—For alterations and improvements at the county intermediate school, Machynlleth, for the Governors. Deposit £1 1*s.* The County Surveyor, Newtown.

WALES.—June 4.—For erection of one single cottage at Llanedarne, near Cardiff, for the Town Council. Mr. W. Harpur, M.I.C.E., city engineer, City Hall, Cardiff.

WALES.—June 9.—For erection of a cottage at Pontnewydd, near Dolgelley, for the Great Western Railway Co. The Engineer, Shrewsbury Station.

WALES.—June 10.—For erection of the Boar's Head Hotel at Tonyrefail. Deposit £2 2*s.* Messrs. A. Ll. Thomas & G. S. Morgan, architects and surveyors, Pontypridd.

WALES.—June 15.—For erection of proposed Empire and cinema theatre at Porth. Send applications and £1 1*s.* deposit by June 8 to Mr. T. E. Richards, A.R.I.B.A., Market Square Chambers, Pontypridd, and 82 Queen Street, Cardiff.

WALES.—June 16.—For erection and completion of a house at Pentood Fach, Cardigan. Mr. J. T. J. Williams, architect, Napier Street, Cardigan.

WALES.—June 16.—For erection of classrooms and additions to vestry of Bethania Baptist chapel, Cardigan. Mr. J. T. J. Williams, architect, Napier Street, Cardigan.

WALES.—June 22.—For erection of the Brynmill infants' school, St. Alban's Road, Swansea, for the Education Committee. Send application and £10 10*s.* deposit by June 2 to Mr. A. W. Holden, clerk, Education Offices, 9 Grove Place, Swansea.

WEST BROMWICH.—June 9.—For erection of goods offices, stables, &c., at West Bromwich Station, for the Great Western Railway Co. The Engineer, Wolverhampton Station.

WHEATLEY HILL (DURHAM).—June 3.—For erection and completion of Sunday school at Wheatley Hill, for the Trustees of the Primitive Methodist Church. Deposit £1 1*s.* Mr. J. Garry, F.R.I.B.A., architect, 47 Church Street, West Hartlepool.

WREXHAM.—June 4.—For the taking up and relaying of the dining-room floor in the headmistress' house at the Wrexham county schools, for the Governors. Mr. W. R. Evans, clerk to the Governors, 56A Hope Street, Wrexham.

WINDSOR.—June 6.—For erection of nurses' quarters at the Windsor Union Workhouse, Old Windsor. Messrs. Edgington & Spink, architects, 52 High Street, Windsor.

THE Court of Common Council, at their meeting last week, passed a scheme prepared by Mr. Sydney Perks, F.R.I.B.A., the city surveyor, for re-building certain offices on the west side of the Council Chamber at the Guildhall at a cost of £30,000. This improvement is part of Mr. Perks' larger scheme estimated to cost £130,000, which was passed in 1911 but never carried out.

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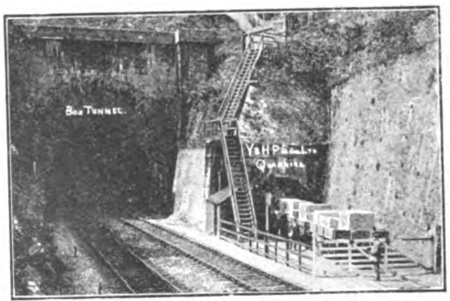

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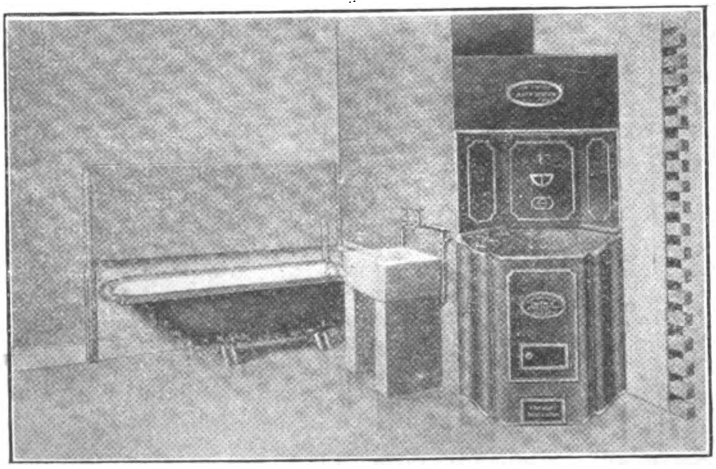

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TENDERS.

BRIGHTON.

For the erection of a department for infants at the Coombe Road school, for the Education Committee. Messrs. T. Simpson & Son, surveyors, Brighton.

Rowland Bros.	£6,699	0	0
Barnes & Sons	6,274	0	0
Martin & Sons	6,225	0	0
Longley & Co.	5,988	0	0
Cook & Sons	5,458	0	0

EAST PRESTON.

For the supply and erection of a new Lancashire steam boiler at the workhouse, East Preston, near Worthing, for the Guardians of East Preston Union.

Phillips & Son	£1,300	0	0
Thompson	1,075	0	0
Smith & Son	985	0	0
Holloway & Sons, Shoreham-by-Sea (*accepted*)	947	0	0
Cannon & Son	915	0	0
Dibben & Sons	807	10	0

For the erection of a boiler house and chimney shaft, additional water-storage tanks, and other works, at the workhouse, for the Guardians of East Preston Union.

Poulton & Timmins	£1,647	0	0
Crane	1,621	11	0
Drake & Co.	1,545	0	0
Cook & Son	1,335	0	0
F. Sandell & Sons, Worthing (*accepted*)	1,285	0	0

LICHFIELD.

For the erection of a drill hall, for the Staffs County Territorial Association.

A. E. Chatfield, Hanley (*accepted*)	£1,750	0	0

LONDON.

For installing heating apparatus, hot-water supplies, and cooking apparatus at the Furzedown training college and hostels, Wandsworth, for the London County Council.

Palowkar & Sons	£4,800	0	0
Christie	4,400	0	0
Brightside Foundry & Engineering Co.	4,199	0	0
G. & E. Bradley	3,825	0	0
Kinnell & Co.	3,775	0	0
Cannon & Hefford	3,698	0	0
J. & F. May	3,659	0	0
Dean & Beal	3,595	0	0
Cannon & Sons	3,498	0	0
Yetton & Brockett	3,470	0	0
Cormack & Sons, Ltd.	3,435	0	0
H. J. Cash & Co., Ltd., Caxton House, Westminster (*recommended*)	3,374	0	0
Architect's estimate	3,450	0	0

For installing heating apparatus in the Bonner Street school, Bethnal Green, for the London County Council.

Palowkar & Sons	£936	0	0
Musgrave & Co.	883	0	0
Christie	801	10	0
Wontner Smith, Gray & Co.	772	10	0
Deane & Beal	760	0	0
Brightside Foundry & Engineering Co.	759	0	0
Hayward Bros. & Eckstein	730	0	0
Yetton & Brockett	720	0	0
J. & F. May	719	0	0
W. Watkin & Son, 313 High Road, Wood Green (*recommended*)	652	0	0
Architect's estimate	783	0	0

For the repair of the carriageways of Blackwall and Rotherhithe tunnels, for the London County Council.

Blackwall Tunnel.

Griffiths & Co.	£1,944	3	9
Mowlem & Co.	1,878	0	0
Wheeler & Co.	1,694	3	0
G. J. Anderson, Poplar (*recommended*)	1,691	3	5

Rotherhithe Tunnel.

Griffiths & Co.	£899	7	1
Mowlem & Co.	867	0	0
Wheeler & Co.	756	15	3
G. J. Anderson (*recommended*)	741	5	5

MARLOW.

For building a house at Woodend, Marlow, for Mr. R. L. Escombe. Mr. J. Gordon Allen, A.R.I.B.A., architect, 13 Holmdale Road, West Hampstead, N.W.

W. & T. Sellman, Marlow (*accepted*)	£860	0	0

Electric-light wiring omitted.

NEWCASTLE-ON-TYNE.

For erection of St. Barnabas' Vicarage, Newcastle-on-Tyne. Mr. A. B. Plummer, F.R.I.B.A., diocesan surveyor, Newcastle.

Elliott Bros.	£1,875	0	0
Miller	1,836	0	0
Horn	1,813	9	6
Weatherley	1,798	0	0
Middlemiss Bros., Newcastle (*accepted*)	1,723	18	11

For erection of St. Paul's Parochial Building, Newcastle-on-Tyne. Mr. A. B. Plummer, F.R.I.B.A., diocesan architect, Newcastle.

Easten	£2,630	0	0
Weir	2,574	4	10
J. & W. Lowry	2,516	0	0
Elliott Bros.	2,440	0	0
Middlemiss Bros.	2,413	0	0
Jackson & Sons	2,398	0	0
Mauchlen (*accepted*)	2,325	0	0

All of Newcastle.

First contract. Borough of Tynemouth. Y.M.C.A., North Shields. Arthur B. Plummer, F.R.I.B.A., F.R.San.I., architect, Tynemouth and Newcastle. H. D. Burton, North Shields, accepted. Lowest amount with additions, £3,241 15s. 2d.

SILLOTH.

For the erection of four workmen's dwellings at Silloth, for Carr's Flour Mills, Ltd. Mr. George Armstrong, architect and surveyor, Carlisle and Silloth.

Accepted tenders.

Hill, builder, Carlisle	£567	10	0
Pattison, joiner, Silloth	307	0	0
Thomson, plasterer, Annan	133	18	0
Bragg, plumber, Silloth	119	17	6
Stronach, slater, Silloth	52	10	0
J. & R. Carrick, painters, Wigton	32	5	0

OAKDALE.

For the erection of a hotel, for the Abertysswg Hotel Company, Ltd. Mr. A. F. Webb, M.S.A., architect and surveyor, Blackwood, Mon. Quantities by architect.

Webb & Son	£5,238	18	0
Green	5,214	14	0
Smith	5,100	0	0
F. & R. Lewis	4,699	14	6
Matthews	4,612	6	11
Hamilton & Millard	4,450	0	0
Walters & Son	4,417	0	0
Jones	4,300	7	0
Davies & Son	4,230	0	0

PORTSMOUTH.

For the erection of chief offices and showrooms in Commercial Road, for the Portsea Island Gas Company.

Morrison & Mason	£21,358	0	0
Wakeham Bros.	19,487	0	0
Holliday & Greenwood	17,889	0	0
Evans	17,300	0	0
Light & Son	16,745	0	0
Crockerell	16,745	0	0
Ward	16,660	0	0
Jones & Son	16,578	0	0
Croad	16,350	0	0
Salter	16,297	0	0
Hunt	16,285	0	0
Sabey & Son, London (*accepted*)	15,663	0	0
Lawrence & Son	15,384	0	0

For erecting three dwelling-houses for Mr. George Foot. Mr. Wm. T. Rogers, architect, Victoria Road, Southsea.

Briggs	£990	0	0
Hughes	940	0	0
Sidney Flowers, Baffins Road (*accepted*)	930	0	0

All of Portsmouth.

SCOTLAND.

For the erection of an infants' school, College Street, Buckhaven, for the Wemyss School Board. Mr. G. C. CAMPBELL, architect and ordinary surveyor, Methil.

Accepted tenders.

	£	s.	d.
Farmer, mason	£2,582	15	0
Dewar, joiner	1,759	8	0
J. & T. Stobie, plasterers	684	19	0
Nicol, plumber	550	0	0
Currie, slater	323	17	0
Nicol, heating	318	0	0
Wardlaw, smith	262	12	0
Limmer Asphalt Co., asphalt	169	9	0
Rolland, painter	155	0	0
Coutts, glaziers	63	6	0

TWICKENHAM.

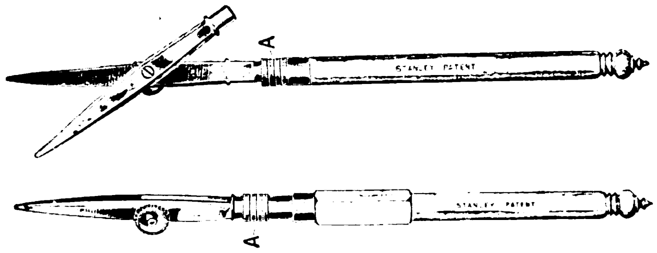
For the erection of a Baptist Church at Twickenham. Messrs. INGALL, BRIDGWATER & PORTER, Licentiate R.I.B.A., architects and surveyors, Birmingham.

	£	s.	d.
Messom	£4,980	0	0
Mather	4,555	0	0
Schooley & Son	4,395	0	0
Speechley & Smith	4,395	0	0
Soole & Son	4,350	0	0
Dorey & Co.	4,346	0	0
GODSON & SONS*	4,243	0	0

* Amended estimate accepted.

W. F. STANLEY'S SWIVEL NIB DRAWING PEN.

MESSRS. STANLEY have just added another valuable weapon to the armoury which every well-equipped man connected with the building trades should possess. As a matter of literal fact, this latest tool must appeal to that very much wider circle of users of drawing pens. As its name indicates, and the accompanying illustrations show, the pen has a swivel nib, or rather the lower nib is swivelled upon a central screw. This allows the pen to be instantly opened out for cleaning purposes by sliding back the ring placed where it runs into the holder. When the nib has been cleaned it can be replaced without the least interference with the original adjustment of the thickness of line. We here illustrate two types of the pen.



THE "STAR" SASHLINE HOLDER.

THE trouble which arises when the sashline of a window breaks is one which is familiar to almost everyone. Usually the remedy is put off from day to day until disaster either actually occurs or seems imminent. Then probably the odd-job man is called in to replace the broken line. And what a to-do he makes. It would sometimes seem as if he were supplying a new frame.

Apparently all this can be rendered a thing of the past, not by the expensive and obvious method of discarding sashline windows, but by utilising the "Star" patent sashline holders and sliding pocket pieces. This cheap and simple invention has just been placed on the market by Messrs. H. M. Clements & Co. Walderslade, Chatham. It is claimed for it—and apparently with perfect truth—that a broken line can be replaced, even in heavy plateglass windows, in about five minutes without the usual pother of removing the sashes and beads, and, what is quite important, without damaging the surface. The new line is fixed to the head of the sash through a short groove ending in a knot socket, which is cut through to the face of the sash. It is attached to the weight through a sliding pocket piece in the frame, which is very easily removed.

This patent, of which full particulars are obtainable from Messrs. Clements & Co., can be fitted to any existing window without changing the existing pocket pieces.

VARIETIES.

THE Welsh National Memorial Association have accepted the tender of Messrs. Harold Arnold & Sons, Doncaster, for the erection of a sanatorium of 304 beds near Talgarth, Breconshire, at £51,050.

THE Kent County Council have sanctioned the erection of county police barracks at Maidstone, at a cost of £30,000, including £3,570 for the site.

THE Huddersfield Town Council have authorised the borough surveyor to prepare rough plans and estimates for two swimming and slipper baths on the Corporation property in Zetland Street.

A LOCAL Government Board inquiry was held on the 20th inst. at Leeds into an application to borrow *inter alia* £200,000 for the extension of the electric generating station in Whitehall Road, inclusive of land, buildings and plant.

THE Hartlepool Corporation are about to undertake the erection of fifty-six artisans' dwellings at an estimated cost of £24,000. The site of about four acres in extent is at present covered with dilapidated buildings.

MR. F. J. H. COUTTS, M.D., conducted an inquiry at the Bradford Town Hall last week with respect to the application of the Bradford Corporation to borrow £30,270 for the erection of a sanatorium at Grassington, near Skipton, for the treatment of tuberculosis cases.

THE Chester-le-Street Urban Council has received permission from the Local Government Board to erect 198 houses. The Council asked that 116 of these should have only two bedrooms, but the Local Government Board objects to this, and requires that 150 shall have three bedrooms, so that it may be possible to separate the sexes where there are families. This will leave only forty-eight houses to be built with two bedrooms.

THE Bentley Urban Council have decided to go forward with a housing scheme, the approximate cost of which will be £23,800. The Council intend to erect ninety-one houses, for which plans have been prepared by their surveyor, and provide four thousand yards of land for allotments. The owners of the Bentley Colliery have sold six acres of land on Askern Road.

THE British Consul-General at Chicago reports that according to returns published by the United States Geological Survey the total quantity of Portland cement manufactured in the United States in 1913 was 92,097,131 barrels (of 380 lbs.), as compared with 82,438,096 barrels in 1912, an increase of 9,659,135 barrels. The stocks of cement on hand are stated to amount to 11,220,328 barrels.

THE Mayor of Hull formally opened the new Building Trades Exchange at the Metropole, Hull, last week, in the presence of a large number of building traders and public men. Before the ceremony the Secretary of the Hull Master Builders' Association (Mr. H. Tiplady) made reference to the history of the movement, and said that the present National Federation owed its origin at a meeting in Hull in 1887, when a number of master builders resolved to form an organisation. Three of those pioneers they had with them to-day. As a result of that organisation they had the "form of contract agreement," which emanated from Hull, and was in vogue all over the country; and they had the National Board of Conciliation.

THE Tynemouth Town Council will consider at their next meeting a report from the Health Committee concerning the proposed development of 5½ acres of the Balkwell Estate recently acquired by the Corporation, with the object of facilitating building in the borough by the placing of cheap sites at the disposal of private builders. The price fixed upon the land is 2*s.* 6*d.* per yard for front sites and 2*s.* for back sites. The purchasers of the sites will not be allowed to re-sell sites at a profit, and will have to build upon them within twelve months of purchase. Other restrictions have been drawn up to prevent the exploitation of the land, in order that the object of the Council—the erection of cheap houses—might be attained.

TRADE NOTES.

BOYLE's latest patent "Air-Pump" Ventilators have been applied to the New Picture Theatre, Princes Parade, Colwyn Bay.

THE Electric Floor Machine Co., Ltd., have recently acquired the patent rights of Surfacing Machinery, Ltd., specialists in floor polishing and finishing, of 118 City Road, London, E.C., at which address the business will still be carried on.

THE
Architect and Contract Reporter.

FRIDAY, JUNE 5, 1914.

EDITORIAL NOTICES.

The Editor will always be pleased to examine drawings or articles with a view to publication, but cannot be responsible for the safety of those sent, though every reasonable care will be taken. Contributors desiring payment should clearly state their wishes. No payment will be made until after publication, and a commission to prepare articles or drawings does not necessarily imply acceptance or approval

No communication can be inserted unless authenticated by the name and address of the writer—not in every case for publication, but as a guarantee of good faith.

We have upon our staff a very eminent Barrister, who will be glad to answer in the columns of this paper any legal question that may be of interest to our readers. All letters must be addressed "Legal Adviser," Office of "The Architect," Imperial Buildings, Ludgate Circus, London, E.C.

The Editor will be glad to receive from Architects in London and the Provinces results of Competitions and Tenders and other particulars of Works in progress in which they may be interested.

TENDERS, ETC.

⁂ *As great disappointment is frequently expressed at the nonappearance of Contracts Open, Tenders, &c., it is particularly requested that information of this description be forwarded to the Office, Imperial Buildings, Ludgate Circus, London, E.C., not later than 2* P.M. *on Thursdays.*

COMPETITIONS OPEN.

CONWAY.—The Board of Guardians invite schemes, with plans, for the laying out of a plot of land near Conway for the provision of one relieving home and four cottages homes, and for laying out of the remainder of the plot for future cottage homes, recreation grounds, &c. Premiums of £10 and £5. Commission will be paid for work carried out during the first five years from date of acceptance of a scheme. Send applications to Mr. J. W. Post, clerk to the Guardians, Union Offices, Conway.

GLASGOW.—The Tramways Committee of the Corporation of Glasgow invite designs for tramway shelter and convenience. Plan of ground and other particulars may be obtained from Mr. James Dalrymple, General Manager, 46 Bath Street, Glasgow.

LONDON.—Sept. 7.—The London County Council invites designs for new public elementary schools at (1) Linda Street, York Road, Battersea, and (2) Billingsgate Street, Church Street, Greenwich, and has appointed Mr. John W. Simpson, F.R.I.B.A., 3 Verulam Buildings, Gray's Inn, W.C., to act as professional assessor and adviser. Deposit of £1 1*s*., payable to the Education Cashier, will be returned on receipt of a bona-fide design for either or both schools, or on the return of the particulars within one month. The Education Officer, Education Offices, Victoria Embankment, W.C. (See advertisement.)

MIDDLETON.—July 16.—The Corporation invite designs for a town hall proposed to be erected in Long Street at a cost of £18,000. Premiums of £100, £50, and £25 are offered. The assessor is Mr. Hastwell Grayson, F.R.I.B.A., M.A. Deposit £1 1*s*., which will be returned on receipt of a design. Mr. F. Entwistle, town clerk, Town Hall, Middleton.

SUNDERLAND.—June 23.—The Borough Council invite designs for a proposed secondary school, Barnes Estate, Durham Road, to accommodate 600 boys. Premiums of £100, £50, and £25 are offered. An assessor nominated by the President of the R.I.B.A. will be appointed. Deposit of £2 2*s*. will be sent back on receipt of a *bonâ-fide* design or on return of the particulars within ten days. Mr. J. W. Moncur, M.I.C.E., borough engineer and surveyor, Town Hall, Sunderland.

YORK.—The Committee of the St. Clement's Working Men's Club offer a prize of £25 for the best plans and specifications submitted in competition for the erection of a new model club. For full particulars and conditions apply to the Secretary, 3 Queen Victoria Street, York.

CONTRACTS OPEN.

ABERDARE.—June 15.—For erection of an infants' school at Cwmbach, Aberdare, for the managers of the Cwmbach Church of England schools. Mr. C. H. Elford, M.S.A., architect, 31 Canon Street or 1 Jeffrey Street, Mountain Ash.

ANDOVER.—June 9.—For execution of structural alterations and additions to premises, for the Co-operative Society. Mr. A. E. Wade, manager, Bridge Street, Andover.

BARROW-IN-FURNESS.—June 18.—For erection of proposed schools, Victoria, Oxford Street, and Ocean Road, Vickerstown, for the Corporation. The Borough Engineer and Surveyor, Town Hall, Barrow-in-Furness.

BENFIELDSIDE.—June 16.—For erection of a cookery centre for the Durham County Council. Mr. W. Rushworth, Shire Hall, Durham.

BIRMINGHAM.—June 19.—For the extension of Birmingham new parcel office, for the Commissioners of H.M. Works and Public Buildings. Deposit £1 1*s*. Mr. J. Tosh, H.M. Office of Works, &c., 42 Paradise Street, Birmingham, and H.M. Office of Works, Storey's Gate, London, S.W.

BLAENAVON.—June 23.—For erection of fifty houses, with appurtenant works, including the erection of boundary walls, the formation and ballasting of roads, and the construction of sewers, &c., for the Blaenavon Urban District Council. Deposit £2 2*s*. Mr. E. W. Edwards, surveyor, Council Offices, Blaenavon.

BOLTON.—June 11.—For the execution of ordinary works and repairs to buildings in their charge in the Bolton district during three years from July 1, for the Commissioners of his Majesty's Works and Public Buildings. Deposit £1. H.M. Office of Works, &c., Storey's Gate, S.W.

BRIGHOUSE.—June 16.—For the excavators', concretors', bricklayers', and masons' work in connection with sewage-works extensions (Contract No. 3), for the Corporation, to be carried out at the Corporation sewage works adjoining the Cooper Bridge railway station, near Huddersfield. Deposit £2 2*s*. Mr. S. S. Haywood, borough engineer, Municipal Offices, Brighouse.

(*Continued on page* 15.)

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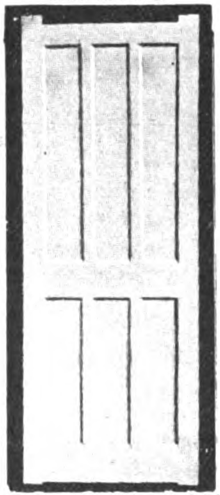

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Carnforth.—For the (1) masonry, (2) slating and plastering, (3) plumbing for house to be built at Crag Bank. Mr. E. Whinray, 5 Market Street, Carnforth.

Chartham Downs (near Canterbury).—June 18.—For erection of a new bakery, new workrooms, additions to farm buildings, and other works in connection therewith at the Kent County Lunatic Asylum (Contract No. 2). Deposit £10. Mr. W. J. Jennings, architect, 4 St. Margaret's Street, Canterbury. (See advertisement.)

Chelmsford.—June 22.—For erection of an engine-house and engine driver's cottage at their waterworks, Galleywood, for the Town Council. The Borough Engineer's Office, Chelmsford.

Chester.—June 20.—For the erection of a tuberculosis ward, adjoining the isolation hospital, Sealand, Chester, for the City Council. Deposit £1. The City Surveyor, Town Hall, Chester.

Chester-le-Street.—June 16.—For erection of a Council school for about 350 scholars. Mr. W. Rushworth, Shire Hall, Durham.

Coleford.—June 8.—For erection of a pair of shops, with outbuildings, and for the execution of certain alterations to existing premises, at Coleford, near Bath, for the Coleford Co-operative and Industrial Society, Ltd. Send applications by June 8 to Mr. W. F. Bird, M.S.A., architect, Midsomer Norton.

Copmanthorpe.—June 12.—The West Riding Education Committee invite whole or separate tenders for the following works at Copmanthorpe Council school—viz.: additions and alterations (builder, joiner, plumber, plasterer and painter). The Education Architect, County Hall, Wakefield. Send £1 deposit by separate letter to the West Riding Treasurer, County Hall, Wakefield.

Dogsthorpe.—June 8.—For construction and completion of an engine-house at Dogsthorpe, for the Peterborough Rural District Council. The Clerk of the Works, Dogsthorpe, and Surveyor's Office, Queen Street, Peterborough.

Dover.—June 22.—For erection of a county school for boys, to accommodate 200 scholars, at Frith Road, for the Kent Education Committee. (Mr. Wilfrid H. Robinson, M.S.A., committee's architect, Maidstone.) Send names and £3 deposit by June 10 to Mr. F. W. Crook, secretary, Sessions House, Maidstone, Kent. (See advertisement.)

Downham Market.—June 18.—For erection and maintenance of a pumping station adjoining the existing station at Southery Downham Market, for the Feltwell New Fen Drainage Commission. Deposit £5. Mr. E. J. Silcock, M.I.C.E., Sanctuary House, 33 Tothill Street, Westminster, S.W., and 10 Park Row, Leeds.

East Looe.—June 8.—For reconstruction of a house in Market Street, for the Looe Urban District Council. Mr. C. Martin, surveyor, East Looe, Cornwall.

Exeter.—June 10.—For building a manual instruction centre at the Newtown boys' school, for the Exeter Education Committee. Mr. J. Jerman, F.R.I.B.A., architect, 1 Bedford Circus, Exeter.

Heckmondwike.—June 12.—The West Riding Education Committee invite whole tenders for the following works at Heckmondwike Battye Street Council schools—viz., alterations to conveniences (builder). The Education Architect, County Hall, Wakefield.

Herne Bay.—June 9.—For the execution of improvements to ventilation at the Herne Bay Council school, for the Kent Education Committee. Mr. G. Jackson, correspondent, 44 Douglas Road, Herne Bay, Kent, and the Committee's Offices, Sessions House, Maidstone.

Hinckley.—June 18.—For constructing an awning over the footpath at the station entrance at Hinckley, and also for building an additional storey on the goods offices on the Midland Railway side of the station, for the London and North-Western Railway Co. Mr. W. B. Farr, divisional engineer, Castle Station, Northampton.

Hoyland.—For erection of ten dwelling-houses in King Street, for the Hoyland Nether Urban District Council. Mr. F. J. Thackray, engineer and surveyor, Town Hall, Hoyland. Yorks.

Hull.—June 16.—For the execution of ordinary work and repairs to buildings in their charge in the Hull district during three years from July 1, for the Commissioners of H.M. Works and Public Buildings. Deposit £1. H.M. Office of Works, &c., Storey's Gate, S.W.

Ireland.—June 8.—For building thirty-two single labourers' cottages and for fencing thirty-two plots, for the Rathdrum Rural District Council. Charge 5*s.* Mr. P. W. Sheehan, clerk, Council Offices, Boardroom, Workhouse, Rathdrum.

Ireland.—June 9.—For construction of public sanitary conveniences at Ballsbridge and Donnybrook, for the Pembroke Urban District Council. Mr. J. C. Manly, clerk, Town Hall, Ballsbridge, Pembroke, co. Dublin.

Ireland.—June 15.—For erection of a recreation room of timber construction in connection with the tuberculosis hospital, Pigeon House Road, Dublin, for the Corporation. The City Architect, Municipal Buildings, Cork Hill, Dublin.

Ireland.—June 18.—For erection and completion of a technical institute in the city of Galway. Mr. A. Macdonald, architect, Francis Street, Galway.

Knottingley.—June 15.—The West Riding Standing Joint Committee invite whole or separate tenders for the following works: Proposed constables' houses at Knottingley (builder, carpenter and joiner, slater, plumber, plasterer, painter). The West Riding Architect, County Hall, Wakefield. Send £1 deposit in each case by separate letter to the West Riding Treasurer, County Hall, Wakefield.

Lees.—June 10.—For erection of a greenhouse at the cemetery, Lees, for the Urban District Council. Contract 1 for the brickwork, joiners' work, glazing, and painting; and Contract 2 for heating of the greenhouse. The Surveyor, Council Offices, Lees, near Oldham.

London.—June 10.—For alterations to Woolwich branch post office, for the Commissioners of H.M. Works and Public Buildings. Deposit £1 1*s.* Mr. A. R. Myers, H.M. Office of Works, 16 Queen Anne's Gate, S.W.

London.—June 13.—For erection of a boiler-house, chimney-shaft, mortuary, &c., at the North-Western Fever Hospital, Lawn Road, Hampstead, N.W., for the Metropolitan Asylums Board. Deposit £1. Mr. W. T. Hatch, M.I.C.E., M.I.M.E., engineer-in-chief, the Office of the Board, Embankment, E.C.

London.—June 17.—For painting and renovating the interior of the nurses' home at the infirmary, 204 Hoxton Street, N., for the Guardians of Saint Leonard, Shoreditch. The Steward's Office at the Infirmary.

London.—June 17.—For repairing and painting internal and external work at their branch school, 26 to 28 Lower Clapton Road, N.E., for the Guardians of St. Leonard, Shoreditch. Mr. F. D. Smith, A.R.I.B.A., architect, Parliament Mansions, Victoria Street, S.W.

London.—June 18.—For construction of a gallery and the provision of book-shelves in the book-store at the Tate Central Library, Brixton Oval, S.W. Mr. Bruce Penny, town clerk, Lambeth Town Hall, Brixton Hill, S.W.

London.—June 22.—For the various works required in the erection of one hundred dwellings on the Woodhouse Estate, North Finchley, for the Finchley Urban District Council. Deposit £5 5*s.* Mr. C. J. Jenkin, M.I.C.E., engineer and surveyor, Council Offices, Church End, Finchley, N.

London.—June 23.—For the construction of an embankment wall in the river Thames in front of the new County Hall site (second section), being an extension of about 240 feet of the wall recently constructed, for the London County Council. Send £10 deposit to the Cashier of the L.C.C. Mr. G. W. Humphreys, chief engineer of the Council, County Hall, Spring Gardens, S.W.

Manchester.—June 10.—For the works required in extension of education offices, Deansgate, for the Education Committee, each section to be let separately as follows: (1) excavator, drainer, concretor, and bricklayer; (2) asphalter; (3) stonemason; (4) slater; (5) carpenter, joiner, and iron and steel fixer; (6) cast ironwork (no fixing); (7) wrought ironwork (no fixing); (8) plumber and glazier; (9) plasterer and painter; (10) supply of red terra cotta. Deposit £1 1*s.* Education Offices, Deansgate, Manchester.

Middle Littleton (Worcs.).—June 22.—For erection of twenty-four cottages at Middle Littleton under the Housing of the Working Classes Acts, for the Evesham Rural District Council (Mr. E. Holloway, surveyor to the Council). Deposit £2 2*s.* Mr. E. H. Wadams, clerk, Union Offices, Evesham.

Northallerton.—June 13.—For supply and erection of a corrugated-iron building for the storage of motor vehicles, &c., for the North Riding of Yorkshire County Council. Mr. W. G. Bryning, county surveyor, County Hall, Northallerton.

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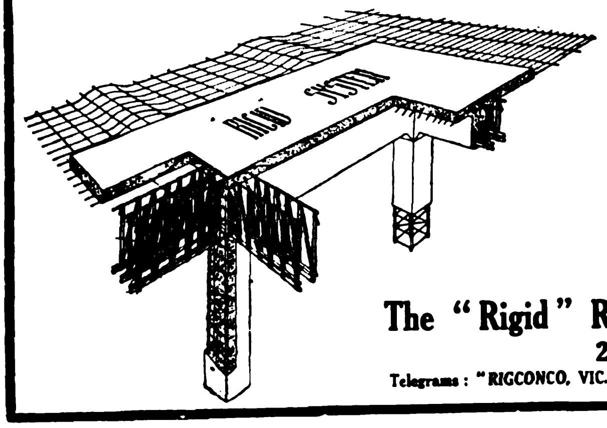

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PORTSMOUTH.—June 23.—For erection of a public elementary school in Wimborne Road, Southsea, for the Portsmouth Education Committee. Deposit £3 3s. Mr. C. C. Vernon-Inkpen, F.S.I., architect, 40 Commercial Road, Portsmouth.

RHYDOWEN.—June 20.—For erection of a farmhouse and for the construction of stables and piggeries at Waunbwll, Rhydowen. Messrs. Morgan & Richardson, solicitors, Cardigan.

ROCHESTER.—June 16.—For alterations and additions to the public convenience at North Street, Strood, for the Corporation. Mr. W. Banks, A.M.I.C.E., city surveyor, Guildhall, Rochester.

SALE (CHESHIRE).—June 13.—For the whole of the works required in erection of Urban Road Council school, for the Sale and Ashton-upon-Mersey District Administrative Sub-Committee for Education. (Messrs. Hoy & Sisley, architects, 199 Deansgate, Manchester.) Deposit £1 1s. Messrs. F. Hewitt & Son, quantity surveyors, 33 Brazennose Street, Manchester.

SCOTLAND.—June 15.—For executing the brick, joiner, plumber, slater, plaster and tile, and painter works in connection with alterations on and additions to the administrative block at the County Sanatorium, Longriggend. Messrs. Alex. Cullen, Lochhead & Brown, architects, Hamilton.

SHIPLEY.—For erection of a spinning-mill at Lowerholme Mills. Messrs. Moore & Crabtree, architects, 4 Exchange Buildings, Bradford.

SHREWSBURY.—For erection of Carno Institute, for Mr. D. Davies, M.P. Deposit £2 2s. Messrs. Dickens-Lewis & Haymes, architects, Pengwerne Chambers, Shrewsbury.

SOUTHAMPTON.—June 10.—For the execution of ordinary works and repairs to buildings in their charge in the Southampton district during three years from July 1, for the Commissioners of his Majesty's Works and Public Buildings. Deposit £1. H.M. Office of Works, &c., Storey's Gate, S.W.

SOUTH SHIELDS.—June 8.—For the construction of offices at the Market Place Ferry landing, South Shields, for the ferry superintendent and the dredging superintendent, for the Tyne Improvement Commissioners. (The building will be of steel, iron, and timber, with slated roof.) Deposit £1. Mr. J. M. Manson, general manager and secretary, Tyne Improvement Commission Offices, Newcastle-upon-Tyne.

TRURO.—June 24.—For erection and completion of the central hall and Barham Memorial gallery, at River Street, Truro, for the Committee of the Royal Institution of Cornwall. Deposit £1 1s. Mr. S. Hill, architect, Green Lane, Redruth.

WALES.—June 10.—For alterations and additions to Rhosmaen, Blaenporth, for Mr. E. Evans. Send names by June 10 to Mr. L. Lewis, Licentiate R.I.B.A., architect and surveyor, Market Square, Cardigan.

WALES.—June 10.—For erection of the Boar's Head Hotel at Tonyrefail. Deposit £2 2s. Messrs. A. Ll. Thomas & G. S. Morgan, architects and surveyors, Pontypridd.

WALES.—June 13.—For erection of twenty-four workmen's dwellings, King's Road, Llandudno, for the Llandudno Urban District Council. Mr. W. T. Ward, deputy engineer and surveyor, Town Hall, Llandudno.

WALES.—June 15.—For erection of proposed Empire and cinema theatre at Porth. Send names and £1 1s. deposit by June 8 to Mr. T. E. Richards, A.R.I.B.A., Market Square Chambers, Pontypridd, and 82 Queen Street, Cardiff.

WALES.—June 15.—For erection of a picture palace and billiard hall at Hirwain, for the Hirwain Picture Palace, Ltd. Mr. T. E. Rees, M.S.A., architect, Bank Chambers, Merthyr Tydfil.

WALES.—June 16.—For erection and completion of a house at Pentood Fach, Cardigan. Mr. J. T. J. Williams, architect, Napier Street, Cardigan.

WALES.—June 16.—For erection of classrooms and additions to vestry of Bethania Baptist chapel, Cardigan. Mr. J. T. J. Williams, architect, Napier Street, Cardigan.

WALES.—June 17.—For erection of a minister's house at Glyncorrwg, for the Building Committee of Carmel C.M. Chapel. (Mr. P. J. Thomas, architect and surveyor, Bridgend.) Mr. Morgan Evans, 12 Dunraven Street, Glyncorrwg, near Port Talbot.

WALES.—June 17.—For all trades in carrying out several alterations to 5 Queen Street, Wrexham, for the Welsh Congregational Church. Mr. F. A. Bevan, architect, Wrexham.

WALES.—June 19.—For the erection of a manual instruction centre at Treherbert, Glamorgan, for the Rhondda Urban District Council. Deposit £1 1s. Mr. J. Rees, architect, Hillside Cottage, Pentre.

WALES.—June 22.—For erection of new town hall and market buildings, including clearing away the existing buildings on the site of same, for the Denbigh Borough Council. Send applications and £1 1s. deposit by June 17 to Messrs. John Brooke & Elcock, FF.R.I.B.A., architects, 18 Exchange Street, Manchester.

WHITBY.—June 15.—For alterations and additions to the cemetery lodge. Mr. E. W. Smales, architect, 48 Baxtergate, Whitby.

WHITSTABLE.—June 19.—For the erection of a building for use in teaching handicrafts, to accommodate twenty scholars, at Oxford Street, and a bathroom in connection with the teacher's dwelling-house, for the Kent Education Committee. Send applications and £1 deposit by June 8 to Mr. F. W. Crook, secretary, Sessions House, Maidstone, Kent.

TENDERS.

BROADSTAIRS.

For the erection of a school at Broadstairs, for the Kent Education Committee. Mr. WILFRID H. ROBINSON, M.S.A., architect, Maidstone.

Friday & Ling	£7.345	0	0
Archer & Son	7.249	0	0
Attwood	7.150	0	0
Skinner & Son	6.995	0	0
Ballard	6.857	0	0
Martin	6.850	0	0
Bowles	6.743	0	0
Dixon	6,627	0	0
Elliott & Son	6.540	0	0
D. GODDEN & SON, Ashford (*provisionally accepted*)	6.524	0	0
May	6.270	0	0

CHASE TOWN.

For work at the Burntwood Council Schools, for the Managers.

J. R. DEACON, Lichfield (*accepted*)	£375	0	0

GATESHEAD.

For the erection of technical rooms and additions at the Secondary School, for the Town Council.

JOHN MILNE, Gateshead (*accepted*)	£5.913	0	0

GOODMAYES.

For the erection, for the Ilford Urban District Council, of (*a*) electricity sub-station and showroom at Green Lane. (*b*) parkkeeper's lodge at Goodmayes recreation ground Mr. H. SHAW, M.I.C.E., engineer and surveyor, Ilford.

Sub-station.

G. & J. W. Fox, 295 Ley Street, Ilford	£1,307	12	0

Lodge.

G. T. Walter, Barkingside, Ilford	£358	2	0

GRAVESEND.

For alterations to premises for use as County School for Girls, for the Kent Education Committee.

A. E. TONG, Gravesend (*accepted*)	£2,027	0	0

GUILDFORD.

For the erection of twenty cottages in the Old Farm Road, for the Town Council. Mr. C. G. MASON, A.M.I.C.E., borough engineer, Guildford.

H. Peppiatt & Cooper	£5,380	0	0
Sherfield Bros.	4,879	0	0
R. Wood & Son	4,872	0	0
Crosby & Co.	4,753	15	0
Bullen & Son (*amended*)	4,518	4	0
Bullen & Son	4,400	0	0

Deferred for consideration.

HOXNE.

For the enlargement by about 150 places of the Cross Street school for the East Suffolk County Education Committee. Mr. J. WEBB, surveyor, Ipswich.

A. J. GIBBONS, Crowfield (*accepted*)	£1.450	18	9

The amounts of the other tenders were as follows: £1,453, £1,484 10s., £1,511 10s., and £1,629 10s.

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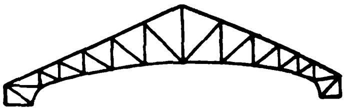

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OXFORD.

For alterations and additions to Messrs. F. Cooper's, Ltd., factory, Oxford. Messrs. HOMER & LUCAS, architects, Evelyn House, 62 Oxford Street, W. Quantities by Mr. G. SILVESTER, 7 Adam Street, Adelphi, W.C.

Knowles & Son	£5,800	0	0
Benfield & Loxley	5,763	0	0
Hutchins & Sons	5,684	0	0
Wooldridge & Simpson	5,287	0	0
KINGERLEE & SONS, Oxford (*accepted*)	5,149	0	0

IRELAND.

For the erection of an isolation hospital, &c., at Portrane branch of the Richmond District Asylum. Mr. D. MORRIS, architect, Dublin.

H. H. HANLEY, Drogheda (*accepted*)	£5,583	2	4
Architect's estimate	5,443	0	0

LEDBURY.

For the construction of a reinforced concrete open-air swimming bath, with dressing boxes and corrugated-iron fencing, for the Urban District Council. Mr. R. S. GURNEY, surveyor, Ledbury.

Rigid Reinforcement and Concrete Eng. Co., 25 Victoria Street	£663	0	0
A. Ford, Birmingham	360	0	0
G. B. R. Pimm, Prince's Street, S.W.	330	0	0
Smith & Son, Ledbury	325	0	0

LONDON.

For strengthening the upper hall floors of the undermentioned schools, for the London County Council.

Islington—The Whittington.

Holliday & Greenwood	£677	0	0
Munday & Sons	625	0	0
Fairhead & Son	624	0	0
Thomas & Edge	612	0	0
Galbraith Bros.	610	0	0
F. & T. Thorne	603	0	0
Patman & Fotheringham	597	0	0
J. & C. Bowyer	597	0	0
Akers & Co.	595	0	0
L. H. & R. Roberts	590	0	0
Lawrence & Son	584	0	0
C. P. Roberts & Co.	574	0	0
Triggs & Co.	563	0	0
Brand, Pettit & Co.	548	0	0
Downs	528	0	0
MCCORMICK & SONS, LTD., Northampton Street, Essex Road (*recommended*)	497	0	0

Poplar—Bromley Hall Road.

Patman & Fotheringham	£1,330	0	0
Lawrence & Son	1,289	0	0
Munday & Sons	1,271	0	0
Fairhead & Son	1,270	0	0
L. H. & R. Roberts	1,263	0	0
Thomas & Edge	1,259	0	0
Galbraith Bros.	1,250	0	0
C. P. Roberts & Co.	1,242	0	0
Triggs & Co.	1,230	0	0
Holliday & Greenwood	1,197	0	0
Brand, Pettit & Co.	1,093	0	0
Akers & Co.	1,025	0	0
J. & C. Bowyer	890	0	0
McCormick & Sons	889	0	0
F. & T. THORNE, Isle of Dogs (*recommended*)	867	0	0

Stepney—Ben Jonson.

Triggs & Co.	£1,840	0	0
Holliday & Greenwood	1,800	0	0
J. & C. Bowyer	1,800	0	0
Patman & Fotheringham	1,790	0	0
L. H. & R. Roberts	1,763	0	0
Lawrence & Son	1,739	0	0
Akers & Co.	1,630	0	0
Munday & Sons	1,568	0	0
Thomas & Edge	1,548	0	0
Galbraith Bros.	1,541	0	0
Brand, Pettit & Co.	1,530	0	0
McCormick & Sons	1,495	0	0
C. P. Roberts & Co.	1,473	0	0
Fairhead & Son	1,445	0	0
F. & T. THORNE, Isle of Dogs (*recommended*)	1,408	0	0

LONDON—*continued.*

Wandsworth—Garratt Lane.

Triggs & Co.	£510	0	0
Holliday & Greenwood	489	0	0
Patman & Fotheringham	476	0	0
Lawrence & Son	452	0	0
L. H. & R. Roberts	439	0	0
Akers & Co.	435	0	0
Fairhead & Son	420	0	0
Munday & Sons	417	0	0
F. & T. Thorne	414	0	0
Thomas & Edge	407	0	0
Galbraith Bros.	405	0	0
C. P. Roberts & Co.	398	0	0
Brand, Pettit & Co.	395	0	0
McCormick & Sons	390	0	0
King & Sons	385	0	0
J. & C. BOWYER, LTD., Upper Norwood (*recommended*)	385	0	0

ROCHESTER.

For the extension of buildings at the Sir Joseph Williamson's Mathematical School, for the Governors. The late Mr. G. E. BOND, architect, Rochester. Quantities by the Architect.

Milton Bros.	£5,075	0	0
Lavington, Ltd.	4,833	0	0
Skinner & Son	4,606	0	0
Seager	4,498	10	0
Gates & Sons	4,498	0	0
Phillips	4,430	0	0
West Bros.	4,139	0	0
W. T. BURROWS, Maidstone (*accepted*)	4,065	0	0

SHOTLEY.

For the erection of a Council school (about 180 children), for the East Suffolk County Education Committee. Mr. J. WEBB, committee's surveyor, Ipswich.

WM. C. READE, Aldeburgh (*accepted*)	£2,879	0	0

The amounts of the other tenders were as follows: £2,916, £2,975, £3,268, £3,269, £3,766, £3,881 16*s.* 9*d.*, and £3,958.

SOUTHALL.

For the erection of a new Council school in Beaconsfield Road, Southall, for the County Council of Middlesex. Mr. H. G. CROTHALL, F.R.I.B.A., architect to the Education Committee.

Fassnidge & Son	£12,654	0	0
Plaistowe	12,232	12	0
Mattock Bros.	11,856	0	0
Lawrence & Son	11,781	0	0
Lacey	11,367	0	0
A. & B. Hanson	11,145	0	0
Fairhead & Son	11,043	0	0
Dickens	10,980	0	0
Neal	10,849	0	0
Monk	10,787	0	0
H. KNIGHT & SON, Tottenham (*recommended*)	10,621	0	0

WALSALL.

For the erection of school buildings, for the Trustees of the Wesleyan Sunday School, Pleck. Mr. C. W. D. JOYNSON, Licentiate R.I.B.A., Wednesbury.

JAMES LEES & SON, Darlaston (*accepted*)	£3,500	0	0

AT a meeting of Risca District Council last week, recommendations were adopted for the erection of 236 houses in connection with the Council's housing scheme. These, together with the houses it had previously been decided to erect, will bring the number up to 500.

THE Incorporated Church Building Society, at its last monthly meeting, made grants of money in aid of the following objects, viz.: Building new churches at Coulsdon, St. James, Surrey, £100 for the first portion; and Sutton-in-Holderness, St. Michael and All Angels, Yorks, £100; rebuilding St. Mary's Church, Sculcoates, Yorks, £80 for the first portion; and towards enlarging or otherwise improving the accommodation in the churches at Cheltenham, St. Peter, Glos., £30; King Square, St. Barnabas, Middx., £50; Milford Haven, St. Catherine, Pembs., £15; St. Pancras Old Church, Middx., £60; Thornton, Christ Church, Lancs., £45; and West Streatham, St. James, Surrey, £25.

PATENT SPECIFICATIONS PUBLISHED, MAY 28, 1914.

Selected by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

No. 10,281. May 1, 1913.—Heinrich Becker, 47 Reuterstr., Neukolln, near Berlin, and Hans Unger, 20 Klopstockstrasse, Berlin. Treating fusible domestic refuse for obtaining paving or building blocks.

11,105. May 10, 1913.—A. Pullen-Burry, Rectory House, Sompting, Worthing.—Hot-water heating systems.

11,635. May 19, 1913.—Donald Donald, Masterton, Wellington, N.Z. Combined door catch and lock.

13,909. June 16, 1913.—G. L. Jennings, 3 Stile Hall Mansions, High Road, Chiswick. Boiler for gas-heated cooking stoves.

14,662. June 25, 1913.—Samuel Turner, Spotland, Rochdale, Lancs. Manufacture of tiles, slabs, and sheets, or other articles from fibrous and cement materials.

16,124. July 12, 1913.—Karl Freund, 32 Goldsmith Road, Acton, and R. R. Kuhn, 27 Glasshouse Street, E.C. Fastening device or lock.

18,388. Aug. 13, 1913.—G. R. Wright, 8 Strand, Southampton, and A. V. A. Wing, 6 Holt Road, Fitzhugh, Southampton. Device for preventing ladders from slipping.

19,717. Sept. 1, 1913.—J. W. Goddard, Station Street, Leicester. Wood-working machinery.

2,446. Jan. 30, 1914.—Frank Iliff, St. Peter's Rectory, Levenshalme, Manchester. Coils for chimneys, stove pipes, ventilating shafts, and the like.

2,717. Feb. 2, 1914.—F. H. Johansson, Herrhagen 153, Karlstad, Sweden. Floor blocks or the like.

2,733. Feb. 2, 1914.—Heinrich Bebie, 8 Mozart Strasse, Altona Bahrenfeld, Germany; Henry Koch, 201 Bahrenfelder Strasse, Altona Ottensen, Germany; and Bruno Becker, 28 Neue Groninger Strasse, Hamburg. Rotary cutters for wood-working machines.

3,059. Feb. 5, 1914.—Albert Selby, M.C.I., 26 Rosslyn Road, Barking. Device for making stirrups or links for concrete reinforcements.

4,113. Feb. 17, 1914. Dated under International Convention Feb. 19, 1913.—Max Brenneisen, 20 Schwarzenburgstr., Bern, Switzerland. Method of producing a weather-proof and rust-preventing paint.

4,134. Feb. 17, 1914. Dated under International Convention Feb. 17, 1913.—Emil Steurs, 26 Rue Van Oost, Schaerbeck, Belgium. Gas and like heating stoves.

5,192. Feb. 28, 1914.—W. J. Stewart and John Woolcock, of J. & W. Stewart, Ormeau Road, Belfast. Reinforcement for concrete work.

7,017. March 19, 1914.—M. H. Hersey, 145 Bethune Road, N. Containers for paint, varnish, and similar fluids.

21,659. Sept. 25, 1913.—Chas. Hoddle and Thorn & Hoddle Acetylene Co., Ltd., 151 Victoria Street, Westminster, S.W. Acetylene stoves or heating appliances.

22,297. Oct. 3, 1913. Dated under International Convention May 10, 1913.—Etienne Douzal, 3 Rue Albert de Lapparent, Paris. Process for the manufacture of artificial marble.

17,970. Aug. 3, 1912.—F. H. Guy, 426 Woodborough Road, Notts. Apparatus for supplying a mixture of gas and air.

5,430. March 4, 1913.—J. E. Slack, 68 Canonbury Park South, and the British Mannesmann Tube Co., Ltd., of Salisbury House, London. Pipe-main connectors.

28,389. Dec. 9, 1913. Dated under International Convention Dec. 11, 1912.—Berlin-Anhaltische Maschinbau A.G., of Reuchlinstr 10/17, Berlin, N.W. 87, Germany. Purifying apparatus for generating gas, water gas, and the like.

28,529. Dec. 10, 1913.—Hubert Zotz and Alois Griessl, Zug, Switzerland. Fastening device for hinged windows, fanlights, and the like.

28,867. Dec. 15, 1913.—Frank Iliff, St. Peter's Rectory, Levenshulme, Manchester. Flushing cisterns for water closets and the like.

42. Jan. 1, 1914.—Thos. Robinson & Son, Ltd., and P. S. Robinson, all of Railway Works, Rochdale, Lancs. Method of and means for longitudinally adjusting the cutter and circular spindles and similar spindles of wood-working machines.

Any of the above specifications may be obtained from J. D. Roots & Co.

VARIETIES.

Mr. John Grover, aged seventy-eight years, of Hindhead, builder, of the firm of Messrs. Grover & Sons, of the Wilton Works, Islington, left £132,244.

The Howden Rural Council have let a tender for the erection of a new isolation hospital to Mr. Ashton, of Barton-on-Humber, for £3,500.

Sir Charles Nicholson, Bart., F.R.I.B.A., of New Square, Lincoln's Inn, London, W.C., has been appointed by the Dean and Chapter consulting architect to Lichfield Cathedral, in succession to the late Mr. J. Oldrid Scott.

The contract for the new County Council school at Highfields, to accommodate 1,000 children, has been let to Messrs. Thornton & Sons, of Rotherham. The building will be on the open-air type.

The Middlesex County Council have approved plans for the erection of a sanatorium at Eastwood at an estimated cost of £53,890. The Government grant towards the capital expenditure will amount to £25,560.

The Burton-on-Trent Town Council have informally resolved completely to duplicate the rising main between the town pumping station and the sewage farm, Etwell, at a cost of £30,000.

East Cowes District Council are considering a scheme for purchase of land from the Office of Woods and Forests for erection of thirty workmen's dwellings, at an average cost of £225 each.

The Municipal Council of Sydney, New South Wales, invite applications before August 4 for the position of city surveyor at a commencing salary of £1,000 per annum, rising to £1,300.

Messrs. Mitchell, Son & Gutteridge, architects, Southampton, have been instructed by the Southampton Endowed Schools Governors to prepare plans for a school for 480 places, with a limit of £45 a place. The proposal that the job be thrown open to public competition was rejected.

The Hull Corporation Bridges Committee recommend the widening of the North Bridge and its immediate approaches as a remedy for the traffic congestion in preference to the provision of a new bridge on a different site. The scheme submitted by Mr. A. E. White, M.I.C.E., the city engineer, involves an outlay of £91,000.

The Hartlepool Town Council have approved an improvement scheme in Durham Street and Brougham Street. It is intended, subject to the prices being satisfactory, to purchase sixteen houses in these streets, and substitute modern dwellings. The cost of the scheme is estimated at £8,210, and the revenue at £259 per annum. The Council at the same meeting declared the Cleveland Street and Ropery Lane area, also in the centre of the town, an unhealthy area within the meaning of the Housing and Town Planning Acts, and resolved that an improvement scheme ought to be made, at an estimated cost of £60,000 to £70,000.

The St. Helens Health Committee have decided to build fifty cottages with one large bedroom each, fifty cottages with two bedrooms, and fifty with three bedrooms. The fifty cottages with one bedroom and fourteen of the three-roomed cottages will at once be commenced on Corporation land near the Hardshaw playground, and the remaining part of the scheme be proceeded with on December 1, 1914, if the borough engineer and the medical officer report a prospective scarcity of houses. Application is to be made to the Local Government Board for £25,000 for the above purposes.

Dundee.—The Dundee School Board at their monthly meeting on the 2nd inst. formally agreed that architects should be invited to compete for a new school at Bellfield district. It was stated that the school would cost £20,000, and that there would be accommodation for 1,100, including supplementary course pupils. Mr. Alex. N. Paterson, M.A., A.R.S.A., of Glasgow, will act as assessor.

Motherwell.—The Town Council this week agreed to accept the plans of Mr. A. Victor Wilson, architect, Motherwell, for the erection of public baths in High Road at an estimated cost of £8,650. The plans were selected upon the recommendation of an assessor. They were the least expensive of the five sets sent in.

Reigate.—The Town Council have adopted a recommendation that competitive designs be invited for a proposed police and fire station, and that premiums of 40, 20, and 10 guineas respectively be offered for the three best designs in order of merit.

THE
Architect and Contract Reporter.
FRIDAY, JUNE 12, 1914.

EDITORIAL NOTICES.

The Editor will always be pleased to examine drawings or articles with a view to publication, but cannot be responsible for the safety of those sent, though every reasonable care will be taken. Contributors desiring payment should clearly state their wishes. No payment will be made until after publication, and a commission to prepare articles or drawings does not necessarily imply acceptance or approval

No communication can be inserted unless authenticated by the name and address of the writer—not in every case for publication, but as a guarantee of good faith.

We have upon our staff a very eminent Barrister, who will be glad to answer in the columns of this paper any legal question that may be of interest to our readers. All letters must be addressed "Legal Adviser," Office of "The Architect," Imperial Buildings, Ludgate Circus, London, E.C.

The Editor will be glad to receive from Architects in London and the Provinces results of Competitions and Tenders and other particulars of Works in progress in which they may be interested.

TENDERS, ETC.

⁂ *As great disappointment is frequently expressed at the nonappearance of Contracts Open, Tenders, &c., it is particularly requested that information of this description be forwarded to the Office, Imperial Buildings, Ludgate Circus, London, E.C., not later than 2* P.M. *on Thursdays.*

COMPETITIONS OPEN.

BIGGLESWADE.—The Rural District Council have agreed to purchase a piece of land at Potton, Beds, and invite plans for the setting out of the site and of the cottages to be built thereon. Particulars can be obtained from Mr. Henry Chaundler, clerk to the Council, Biggleswade, Beds.

GATESHEAD.—The Education Committee invite competitive designs from architects for a new school for 700 scholars in King Edward Street, Sunderland Road, Gateshead. Copies of the conditions and plan of the site may be had on application at the Education Offices, Gateshead. (Mr. R. T. Edington, Secretary.)

GLASGOW.—The Tramways Committee of the Corporation of Glasgow invite designs for tramway shelter and convenience. Plan of ground and other particulars may be obtained from Mr. James Dalrymple, General Manager, 46 Bath Street, Glasgow.

LIVERPOOL.—The Parks and Gardens Committee of the Corporation invite designs from architects, surveyors, and landscape gardeners for the laying out as a public park and recreation grounds the Walton Hall Estate, with an estimate of the cost. Premiums of 100, 50, and 25 guineas respectively will be awarded to the competitors whose designs shall be considered to be respectively first, second, and third in order of merit, such designs to become the absolute property of the Corporation. Conditions and plan of the site may be obtained on deposit of one guinea, which will be returned on receipt of *bona-fide* designs. Mr. Edward R. Pickmere, Town Clerk, Town Clerk's Office, Liverpool.

LONDON.—Sept. 7.—The London County Council invites designs for new public elementary schools at (1) Linda Street, York Road, Battersea, and (2) Billingsgate Street, Church Street, Greenwich, and has appointed Mr. John W. Simpson, F.R.I.B.A., 3 Verulam Buildings, Gray's Inn, W.C., to act as professional assessor and adviser. Deposit of £1 1*s*., payable to the Education Cashier, will be returned on receipt of a bona-fide design for either or both schools, or on the return of the particulars within one month. The Education Officer, Education Offices, Victoria Embankment, W.C. (See advertisement.)

MIDDLETON.—July 16.—The Corporation invite designs for a town hall proposed to be erected in Long Street at a cost of £18,000. Premiums of £100, £50, and £25 are offered. The assessor is Mr. Hastwell Grayson, F.R.I.B.A., M.A. Deposit £1 1*s*., which will be returned on receipt of a design. Mr. F. Entwistle, town clerk, Town Hall, Middleton.

REIGATE.—July 25.—The Borough Council invite competitive designs for a police and fire station to be erected at Redhill. Premiums of 40, 20, and 10 guineas are offered. Mr. Alfred Smith, town clerk, Municipal Buildings, Reigate.

SAMFORD.—June 29.—The Rural District Council invite plans and designs for working-class cottages in country districts. The author of the selected plan will receive £5 and will act as architect for the erection of the first ten cottages. Mr. A. J. Haward, clerk, 34 Princes Street, Ipswich.

SUNDERLAND.—June 23.—The Borough Council invite designs for a proposed secondary school, Barnes Estate, Durham Road, to accommodate 600 boys. Premiums of £100, £50, and £25 are offered. An assessor nominated by the President of the R.I.B.A. will be appointed. Deposit of £2 2*s*. will be sent back on receipt of a *bonâ-fide* design or on return of the particulars within ten days. Mr. J. W. Moncur, M.I.C.E., borough engineer and surveyor, Town Hall, Sunderland.

WHITBY.—The Urban District Council invite plans for the improvement of the Whitby Saloon Theatre and grounds, and the erection therein of a concert hall. Particulars can be obtained from, and conditions of competition seen on application to, Mr. T. K. Scott, surveyor, Council Offices, Flowergate, Whitby.

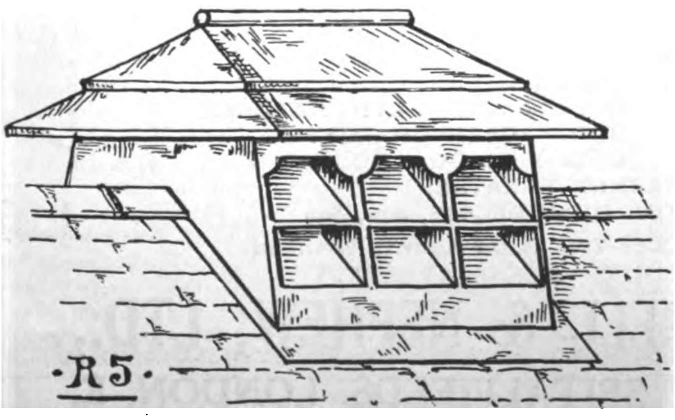
CONTRACTS OPEN.

ABERTILLERY.—July 1.—For alteration and extension of the Queen Street girls' school, for the Abertillery Urban District Council. Deposit £1 1*s*. Mr. W. H. Hiley, architect, Chapel Street, Abertillery.

ANDOVER.—June 22.—For works of repainting and repair to the town hall buildings, for the Town Council. Deposit £2 2*s*. The Surveyor's Office, Andover.

APPLEBY.—June 15.—For the various works required in erection of a miniature rifle range, for the Cumberland and Westmorland Territorial Association. Send names by June 15 to Mr. P. M. Hope, M.I.M.C.E., architect and civil engineer, 11 Main Street, Cockermouth.

(*Continued on page* 15.)



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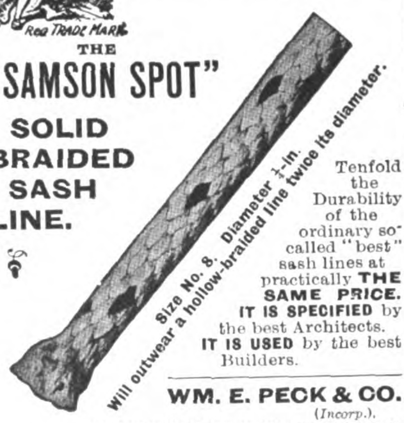
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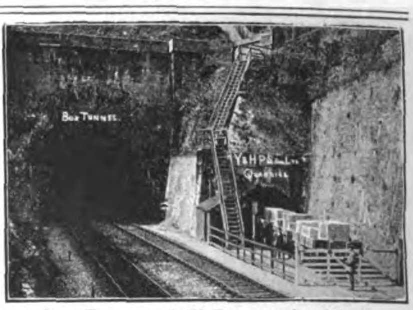

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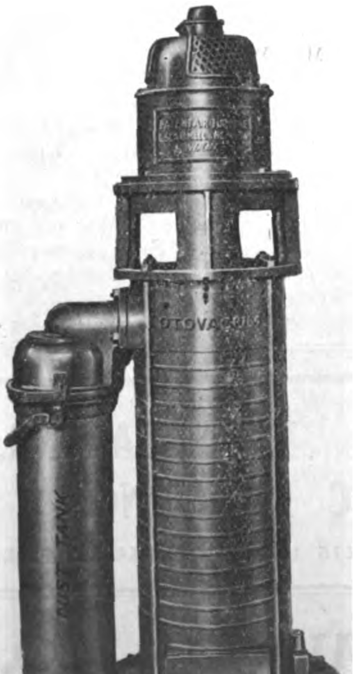

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Barrow-in-Furness.—June 15.—For erection of a chemist's shop at Vickerstown, for the Barrow Co-operative Society, Ltd. Mr. H. T. Fowler, A.R.I.B.A., architect, 6 Cornwallis Street, Barrow-in-Furness.

Barrow-in-Furness.—June 18.—For erection of proposed schools, Victoria, Oxford Street, and Ocean Road, Vickerstown, for the Corporation. The Borough Engineer and Surveyor, Town Hall, Barrow-in-Furness.

Birmingham.—June 19.—For the extension of Birmingham new parcel office, for the Commissioners of H.M. Works and Public Buildings. Deposit £1 1s. Mr. J. Tosh, H.M. Office of Works, &c., 42 Paradise Street, Birmingham, and H.M. Office of Works, Storey's Gate, London, S.W.

Blaenavon.—June 23.—For erection of fifty houses, with appurtenant works, including the erection of boundary walls, the formation and ballasting of roads, and the construction of sewers, &c., for the Blaenavon Urban District Council. Deposit £2 2s. Mr. E. W. Edwards, surveyor, Council Offices, Blaenavon.

Cambridge.—June 16.—For erection of a children's home in Ross Street, for the Guardians. (Mr. S. French, architect.) Mr. J. Congreve, clerk, 55 St. Andrew's Street, Cambridge.

Cannock.—June 18.—For the supply and erection at the workhouse of three iron stairways, for the Cannock Board of Guardians. Mr. H. M. Whitehead, Penkridge, Stafford.

Carlisle.—For proposed work at the Nisi Prius Court house to provide a strong room, for the Cumberland County Council. Mr. G. D. Oliver, F.R.I.B.A., county architect, Carlisle.

Chartham Downs (near Canterbury).—June 18.—For erection of a new bakery, new workrooms, additions to farm buildings, and other works in connection therewith at the Kent County Lunatic Asylum (Contract No. 2). Deposit £10. Mr. W. J. Jennings, architect, 4 St. Margaret's Street, Canterbury. (See advertisement.)

Chasetown.—June 17.—For erection of two pairs of semi-detached villas, for Messrs. I. & T. Lomas. Mr. E. Walker, Edward's Road, Chasetown, near Walsall.

Chelmsford.—June 22.—For erection of an engine-house and engine driver's cottage at their waterworks, Galleywood, for the Town Council. The Borough Engineer's Office, Chelmsford.

Chester.—June 20.—For the erection of a tuberculosis ward, adjoining the isolation hospital, Sealand, Chester, for the City Council. Deposit £1. The City Surveyor, Town Hall, Chester.

Chipping Ongar.—June 17.—For provision of additional bedroom accommodation and additional lavatory at the children's homes at Chipping Ongar, Essex, for the Guardians of Hackney Union. Mr. F. R. Coles, clerk, Homerton, N.E.

Cornwood (Devon).—June 13.—For building a new house and bakery at Cornwood, Devon, for Major W. F. Parker. Plans and specifications may be seen on application to Mr. W. Harvey, Cornwood, to whom sealed endorsed tenders must be delivered by first post on June 13.

Dartford.—June 17.—For alterations and repairs to the Orchard Hospital, Dartford, Kent, for the Metropolitan Asylums Board. Deposit £1. Mr. W. T. Hatch, M.I.C.E., M.I.M.E., engineer-in-chief, the office of the Board, Embankment, E.C.

Derby.—June 16.—For alterations and additions to men's infirmary block at the infirmary buildings at the workhouse, for the Guardians. Mr. F. C. Coulthurst, architect and surveyor, 4 Albert Street, Derby.

Duddo.—June 18.—For work of erecting a teacher's dwelling-house at Duddo, near Berwick-upon-Tweed, for the Northumberland Education Committee. Send applications and £1 1s. deposit by June 18 to Mr. C. Williams, secretary, the Moothall, Newcastle-on-Tyne.

East Ham.—June 16.—For cleansing and whitewashing the latrines and urinals at twenty-two schools as described in form of tender; also for repairing, painting, and sundry work at ten schools, for the East Ham Education Committee. The work must be done during the forthcoming summer vacation. Deposit £5. Mr. F. R. Thompson, secretary, Education Office, East Ham.

Exeter.—June 15.—For rebuilding a wall at the rear of 1 and 2 Lower Summerlands, for the Guardians. Mr. R. M. Challice, architect, 14 Bedford Circus, Exeter.

Exeter.—June 22.—For construction of underground conveniences in Sidwell Street and Magdalen Street, for the Corporation. Deposit £1 1s. Mr. T. Moulding, M.I.C.E., city engineer and surveyor, 7 Southernhay West, Exeter.

Grantham.—June 23.—For taking down and rebuilding the lining of the chimney at the refuse destructor, Belton Lane. The Borough Surveyor, Guildhall, Grantham.

Halifax.—June 15.—For the following works required in extensions to West Grove Mills—viz.: Masons', joiners', slaters' and plasterers', plumbers' and glaziers', iron-founders', and constructional steel contractors', for Messrs. Fleming, Birkby & Goodall, Ltd. Send applications by June 15 to Mr. T. Kershaw, A.R.I.B.A., architect, 26 George Street, Halifax.

Ham Green.—June 26.—For erection of a consumptive sanatorium at Ham Green, for the Bristol Health Committee. Deposit £3 3s. Mr. L. S. McKenzie, A.M.I.C.E., city engineer and surveyor, 63 Queen Square, Bristol.

Hemel Hempstead.—June 27.—For erection of an isolation hospital at Bennett's End, for the Hemel Hempstead Joint Hospital Board. Send applications between June 15 and June 18, together with £5 deposit, to Messrs. Saxon Snell & Spoor, architects, 26 Great James Street, Bedford Row, W.C.

Horbury.—June 13.—For erection of a house at Hartley Bank Colliery, near Horbury, for the Flockton Colliery Co., Ltd. Send names by June 13 to Mr. T. H. Bickley, architect, Horbury.

Hull.—June 16.—For the execution of ordinary work and repairs to buildings in their charge in the Hull district during three years from July 1, for the Commissioners of H.M. Works and Public Buildings. Deposit £1. H.M. Office of Works, &c., Storey's Gate, S.W.

Hull.—June 17.—For construction of Westcott Street extension. Mr. Ernest Whitlock, architect and surveyor, Chancery Buildings, Manor Street, Hull.

Ireland.—June 18.—For the building of eighteen labourers' cottages and the fencing of eighteen plots, for the Clones Rural District Council. Mr. H. Maguire, clerk, Workhouse, Clones.

Keynsham.—June 16.—For the addition of a bedroom and other work at the temporary isolation hospital, for the Keynsham Rural District Council. Mr. H. M. Bennett, surveyor, 36 Corn Street, Bristol.

King's Lynn.—For altering and extending premises (Grosvenor Restaurant) in Norfolk Street and Broad Street. Mr. L. F. Eagleton, architect and surveyor, King Street, King's Lynn.

London.—June 18.—For construction of a gallery and the provision of book-shelves in the book-store at the Tate Central Library, Brixton Oval, S.W. Mr. Bruce Penny, town clerk, Lambeth Town Hall, Brixton Hill, S.W.

London.—June 18.—For new Armadek flooring, plastering, and decorative works, and new stoves in wards Nos. 6 and 10 and the three sanitary pavilions, two bathrooms, two kitchens, and nurses' bedrooms, all adjoining wards, at the Infirmary, Marloes Road, Kensington, for the Kensington Board of Guardians. Mr. W. R. Stephens, clerk, Guardians' Offices, Marloes Road, Kensington, W.

London.—June 22.—For the various works required in the erection of one hundred dwellings on the Woodhouse Estate, North Finchley, for the Finchley Urban District Council. Deposit £5 5s. Mr. C. J. Jenkin, M.I.C.E., engineer and surveyor, Council Offices, Church End, Finchley, N.

London.—June 23.—For the execution of certain work of alterations and painting at their relief station, 55 Stockwell Road, S.W., for the Lambeth Board of Guardians. Deposit £2. The Guardians' Board Room and Offices, Brook Street, Kennington Road, S.E.

London.—June 23.—For the construction of an embankment wall in the river Thames in front of the new County Hall site (second section), being an extension of about 240 feet of the wall recently constructed, for the London County Council. Send £10 deposit to the Cashier of the L.C.C. Mr. G. W. Humphreys, chief engineer of the Council, County Hall, Spring Gardens, S.W.

London.—June 29.—For the execution of certain works at the town hall, Rosebery Avenue, involving structural alterations in the offices and sanitary conveniences, for the Finsbury Borough Council. The Borough Surveyor's Office, Town Hall, Rosebery Avenue, London, E.C.

London.—July 1.—For erection of a boiler-house, chimney shaft, mortuary, &c., at the North-Western Fever Hospital, Lawn Road, Hampstead, N.W., for the Metropolitan Asylums Board. Deposit £1. Mr. W. T. Hatch,

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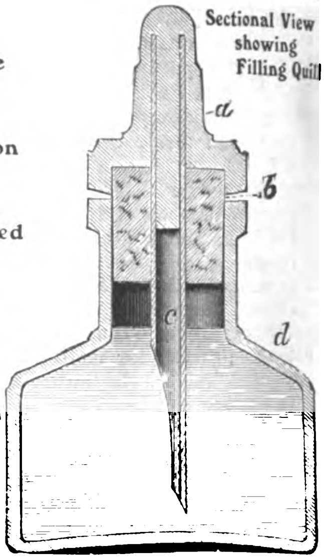

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Longwood.—June 18.—For the various works required in erection of additions to mill premises at Longwood, Yorks. Messrs. Lunn & Kaye, architects and surveyors, Milnsbridge and Huddersfield.

Middle Littleton (Worcs.).—June 22.—For erection of twenty-four cottages at Middle Littleton under the Housing of the Working Classes Acts, for the Evesham Rural District Council (Mr. E. Holloway, surveyor to the Council). Deposit £2 2*s*. Mr. E. H. Wadams, clerk, Union Offices, Evesham.

Morley.—June 16.—For the joiners', plumbers', and slaters' work required in erection of engine house and milling place at Laneside Mills, for Messrs. Charles Scarth & Sons, Ltd. Mr. T. A. Buttery, Licentiate R.I.B.A., architect and surveyor, Queen Street, Morley, and 1 Basinghall Square, Leeds.

New Barnet.—June 15.—For (*a*) making and erection of five tool sheds on their allotments at Cat Hill, and for any further sheds which may be ordered before March 31, 1915; (*b*) provision and erection of two public conveniences in the district, for the East Barnet Valley Urban District Council. Mr. H. York, surveyor, Council Offices, Station Road, New Barnet.

Platt Bridge.—June 29.—For erection of a school off Moss Lane, Platt Bridge, Lancs., to accommodate 450 scholars, for the Hindley Urban District Council (Mr. H. Wade, architect, 27 Birley Street, Blackpool). Deposit £3 3*s*. Mr. O. P. Abbott, surveyor, Hindley.

Portsmouth.—June 23.—For erection of a public elementary school in Wimborne Road, Southsea, for the Portsmouth Education Committee. Deposit £3 3*s*. Mr. C. C. Vernon-Inkpen, F.S.I., architect, 40 Commercial Road, Portsmouth.

Rhydowen.—June 20.—For erection of a farmhouse and for the construction of stables and piggeries at Waunbwll, Rhydowen. Messrs. Morgan & Richardson, solicitors, Cardigan.

Rumney.—June 16.—For extensions and alterations to the Rumney Council school, near Cardiff, for the Monmouthshire Education Committee Deposit £1 1*s*. Mr. J. Bain, F.R.I.B.A., County Council Offices, Newport.

Scotland.—June 16.—For the mason, carpenter, plumber, plaster, slater, and painter and glazier works of a farmhouse to be erected at Hillhead, Easter Carnie, for the Town Council of Aberdeen. Mr. J. Rust, city architect, 224 Union Street, Aberdeen.

Scotland.—June 18.—For executing the digger, brick, and concrete work, joiner and glazier work, asbestos slating work, plumber work, and painter work in connection with the erection of an open-air school at the Hairmyres Sanatorium, East Kilbride. Mr. W. Ross Young, architect, District Offices, Hamilton.

Scotland.—June 22.—For the following works required in connection with the erection of a fire station at Wallace Street and Centre Street, Glasgow—viz.: (1) Excavation, mason, and brick works; (2) steel work; (3) carpenter and joiner works; (4) slater work; (5) plumber work; (6) plaster work; (7) tile work; and (8) painter work—for the Corporation. Deposit £2 2*s*. The Office of Public Works, City Chambers, 64 Cochrane Street, Glasgow.

Scotland.—June 23.—For mason, joiner, plumber, slater, plasterer, and painter work for proposed savings bank in High Street, Selkirk. Mr. Adam Grieve, architect, Selkirk.

Southampton.—June 22.—For the execution of the following works at the Portswood Sewage Farm, for the Southampton Corporation: (1) Erection of refuse destructor and boilers; (2) erection of chimney shaft; (3) erection of tipping platform, shelter, air-compressor house, reinforced concrete foundations, wing walls, &c. Deposit £1 1*s*. The Borough Engineer's Office, Municipal Offices, Southampton.

Southend-on-Sea.—June 16.—For erection of conveniences at Thorpe Bay, for the Corporation. Deposit £1 1*s*. Mr. E. J. Elford, M.I.C.E., Municipal Buildings, Clarence Road, Southend-on-Sea.

Stocksbridge.—June 18.—For erection of a bungalow, for the Stocksbridge and Deepcar Nursing Association. Deposit 10*s*. 6*d*. Mr. S. E. Minns, architect and surveyor, 34 Bank Street, Sheffield.

Sunbury-on-Thames.—For erection of a detached house at Sunbury-on-Thames. Deposit £2 2*s*. Messrs. Leach & Son, architects, 59 and 60 Chancery Lane, London, W.C.

Tattingstone (Suffolk).—June 15.—For carrying out additions and alterations at the Infectious Disease Hospital at Tattingstone, for the Samford Rural District Council. Mr. A. J. Haward, clerk, 34 Princes Street, Ipswich.

Wales. — For erection of twenty-four houses at Ynysdawly, Seven Sisters, for the Blaendulais Building Club. Mr. J. S. Griffiths, architect and surveyor, Seven Sisters.

Wales.—July 15.—For erection of a laundry at the Joint Counties Asylum, Carmarthen. (Messrs. G. Morgan & Son, architects, 24 King Street, Carmarthen.) Send applications and £3 3*s*. deposit by June 27 to Mr. W. J. Wallis-Jones, clerk to the visitors, 34 Quay Street, Carmarthen.

Wales.—June 15.—For the following works, for the Glamorgan County Council: (1) laying out of the grounds of the new training college at Barry; (2) temporary classroom at Banwen Council school, near Brynamman; (3) domestic science centre at the higher elementary school at Pontardawe; (4) alterations and additions to the Pontardawe girls' Council school; (5) alterations to offices at Herbert Road Council school, Melincrythan; (6) painting the following schools in the western division during the midsummer holidays in August: Pontardulais infants', Cwmllynfell, Gwauncaegurwen, Banwen mixed, Alltwen infants', Maesteg secondary (cookery and gymnasium block), Cwmgors. Mr. T. M. Franklen, clerk, Glamorgan County Hall, Cardiff.

Wales.—June 15.—For erection of a cottage to accommodate a police constable at their reservoir works at Pontsticill, for the Corporation of Merthyr Tydfil. The Waterworks Engineer, 101 High Street, Merthyr Tydfil.

Wales.—June 16.—For building extensions to and altering the Trerobart boys' school, Ynysybwl, for the Mountain Ash Education Committee. Mr. W. H. Williams, M.S.A., architect, Town Hall, Mountain Ash.

Wales.—June 16.—For erection of a parish hall at Trelewis, near Treharris, Glam. Rev. W. J. Williams, Sandwich House Trelewis, or Mr. T. Roderick, architect, Ashbrook House, Aberdare.

Wales.—June 17.—For repairs and alterations to house and buildings at Graigwen Farm, Caerphilly, for the Glamorgan County Council. The Glamorgan County Hall, Cardiff.

Wales.—June 17.—For building a house and premises at Dowlais, Wales, for Messrs. the Exors. David Williams, Merthyr Tydfil. Mr. C. M. Davies, M.S.A., 112 High Street, Merthyr Tydfil.

Wales.—June 17.—For all trades in carrying out several alterations to 5 Queen Street, Wrexham, for the Welsh Congregational Church. Mr. F. A. Bevan, architect, Wrexham.

Wales.—June 18.—For erection of twenty-five houses at Penygraig, for the Crawshay Building Club. Mr. E. Ivor Evans, architect and surveyor, 55 Dunraven Street, Tonypandy.

Wales.—June 19.—For the erection of a manual instruction centre at Treherbert, Glamorgan, for the Rhondda Urban District Council. Deposit £1 1*s*. Mr. J. Rees, architect, Hillside Cottage, Pentre.

Wales.—June 19.—For construction of a garage and stock rooms at Park Place, Cardiff, for the Park Hall and Hotel Co., Ltd. Deposit £1 1*s*. Mr. E. W. M. Corbett, architect, Castle Street, Cardiff.

Wales.—June 27.—For building a classroom and carrying out alterations at the Llanion schools, Pembroke Dock, for the Pembroke Education Committee. Mr. K. McAlpin, architect, Pembroke Dock.

Watford.—July 6.—For erection of a pumping station, including engine house, basement, machine shop, boiler house, coal store, filter house, lime store, and softening tank, for the Watford Urban District Council. Deposit £10. Mr. D. Waterhouse, engineer, Council Offices, High Street, Watford.

Wendling (Norfolk).—June 17.—For erection of the Primitive Methodist Church, Wendling. Messrs. A. F. Scott & Son, A.R.I.B.A., architects and surveyors, 24 Castle Meadow, Norwich.

Whitehaven.—For the respective artificers' work required in alterations and additions to the Sun Hotel, for Messrs. Samuel Allsopp & Sons, Ltd., Burton-on-Trent. Mr. E. Martindale, architect, Tangier Buildings, Whitehaven.

Whitehaven.—July 4.—For the erection and completion of seventy-four semi-detached houses and for the construction of roadways, foot-paths, sewers, manholes, &c., required in laying out the site at Arrowthwaite, Whitehaven, for the

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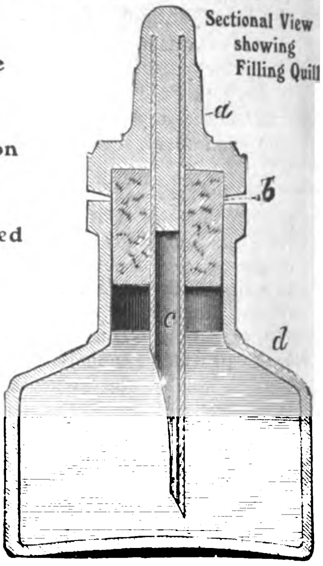

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LONGWOOD.—June 18.—For the various works required in erection of additions to mill premises at Longwood, Yorks. Messrs. Lunn & Kaye, architects and surveyors, Milnsbridge and Huddersfield.

MIDDLE LITTLETON (WORCS.).—June 22.—For erection of twenty-four cottages at Middle Littleton under the Housing of the Working Classes Acts, for the Evesham Rural District Council (Mr. E. Holloway, surveyor to the Council). Deposit £2 2*s*. Mr. E. H. Wadams, clerk, Union Offices, Evesham.

MORLEY.—June 16.—For the joiners', plumbers', and slaters' work required in erection of engine house and milling place at Laneside Mills, for Messrs. Charles Scarth & Sons, Ltd. Mr. T. A. Buttery, Licentiate R.I.B.A., architect and surveyor, Queen Street, Morley, and 1 Basinghall Square, Leeds.

NEW BARNET.—June 15.—For (*a*) making and erection of five tool sheds on their allotments at Cat Hill, and for any further sheds which may be ordered before March 31, 1915; (*b*) provision and erection of two public conveniences in the district, for the East Barnet Valley Urban District Council. Mr. H. York, surveyor, Council Offices, Station Road, New Barnet.

PLATT BRIDGE.—June 29.—For erection of a school off Moss Lane, Platt Bridge, Lancs., to accommodate 450 scholars, for the Hindley Urban District Council (Mr. H. Wade, architect, 27 Birley Street, Blackpool). Deposit £3 3*s*. Mr. O. P. Abbott, surveyor, Hindley.

PORTSMOUTH.—June 23.—For erection of a public elementary school in Wimborne Road, Southsea, for the Portsmouth Education Committee. Deposit £3 3*s*. Mr. C. C. Vernon-Inkpen, F.S.I., architect, 40 Commercial Road, Portsmouth.

RHYDOWEN.—June 20.—For erection of a farmhouse and for the construction of stables and piggeries at Waunbwll, Rhydowen. Messrs. Morgan & Richardson, solicitors, Cardigan.

RUMNEY.—June 16.—For extensions and alterations to the Rumney Council school, near Cardiff, for the Monmouthshire Education Committee. Deposit £1 1*s*. Mr. J. Bain, F.R.I.B.A., County Council Offices, Newport.

SCOTLAND.—June 16.—For the mason, carpenter, plumber, plaster, slater, and painter and glazier works of a farmhouse to be erected at Hillhead, Easter Carnie, for the Town Council of Aberdeen. Mr. J. Rust, city architect, 224 Union Street, Aberdeen.

SCOTLAND.—June 18.—For executing the digger, brick, and concrete work, joiner and glazier work, asbestos slating work, plumber work, and painter work in connection with the erection of an open-air school at the Hairmyres Sanatorium, East Kilbride. Mr. W. Ross Young, architect, District Offices, Hamilton.

SCOTLAND.—June 22.—For the following works required in connection with the erection of a fire station at Wallace Street and Centre Street, Glasgow—viz.: (1) Excavation, mason, and brick works; (2) steel work; (3) carpenter and joiner works; (4) slater work; (5) plumber work; (6) plaster work; (7) tile work; and (8) painter work—for the Corporation. Deposit £2 2*s*. The Office of Public Works, City Chambers, 64 Cochrane Street, Glasgow.

SCOTLAND.—June 23.—For mason, joiner, plumber, slater, plasterer, and painter work for proposed savings bank in High Street, Selkirk. Mr. Adam Grieve, architect, Selkirk.

SOUTHAMPTON.—June 22.—For the execution of the following works at the Portswood Sewage Farm, for the Southampton Corporation: (1) Erection of refuse destructor and boilers; (2) erection of chimney shaft; (3) erection of tipping platform, shelter, air-compressor house, reinforced concrete foundations, wing walls, &c. Deposit £1 1*s*. The Borough Engineer's Office, Municipal Offices, Southampton.

SOUTHEND-ON-SEA.—June 16.—For erection of conveniences at Thorpe Bay, for the Corporation. Deposit £1 1*s*. Mr. E. J. Elford, M.I.C.E., Municipal Buildings, Clarence Road, Southend-on-Sea.

STOCKSBRIDGE.—June 18.—For erection of a bungalow, for the Stocksbridge and Deepcar Nursing Association. Deposit 10*s*. 6*d*. Mr. S. E. Minns, architect and surveyor, 34 Bank Street, Sheffield.

SUNBURY-ON-THAMES.—For erection of a detached house at Sunbury-on-Thames. Deposit £2 2*s*. Messrs. Leach & Son, architects, 59 and 60 Chancery Lane, London, W.C.

TATTINGSTONE (SUFFOLK).—June 15.—For carrying out additions and alterations at the Infectious Disease Hospital at Tattingstone, for the Samford Rural District Council. Mr. A. J. Haward, clerk, 34 Princes Street, Ipswich.

WALES.—For erection of twenty-four houses at Ynysdawly, Seven Sisters, for the Blaendulais Building Club. Mr. J. S. Griffiths, architect and surveyor, Seven Sisters.

WALES.—July 15.—For erection of a laundry at the Joint Counties Asylum, Carmarthen. (Messrs. G. Morgan & Son, architects, 24 King Street, Carmarthen.) Send applications and £3 3*s*. deposit by June 27 to Mr. W. J. Wallis-Jones, clerk to the visitors, 34 Quay Street, Carmarthen.

WALES.—June 15.—For the following works, for the Glamorgan County Council: (1) laying out of the grounds of the new training college at Barry; (2) temporary classroom at Banwen Council school, near Brynamman; (3) domestic science centre at the higher elementary school at Pontardawe; (4) alterations and additions to the Pontardawe girls' Council school; (5) alterations to offices at Herbert Road Council school, Melincrythan; (6) painting the following schools in the western division during the midsummer holidays in August: Pontardulais infants', Cwmllynfell, Gwauncaegurwen, Banwen mixed, Alltwen infants', Maesteg secondary (cookery and gymnasium block), Cwmgors. Mr. T. M. Franklen, clerk, Glamorgan County Hall, Cardiff.

WALES.—June 15.—For erection of a cottage to accommodate a police constable at their reservoir works at Pontsticill, for the Corporation of Merthyr Tydfil. The Waterworks Engineer, 101 High Street, Merthyr Tydfil.

WALES.—June 16.—For building extensions to and altering the Trerobart boys' school, Ynysybwl, for the Mountain Ash Education Committee. Mr. W. H. Williams, M.S.A., architect, Town Hall, Mountain Ash.

WALES.—June 16.—For erection of a parish hall at Trelewis, near Treharris, Glam. Rev. W. J. Williams, Sandwich House Trelewis, or Mr. T. Roderick, architect, Ashbrook House, Aberdare.

WALES.—June 17.—For repairs and alterations to house and buildings at Graigwen Farm, Caerphilly, for the Glamorgan County Council. The Glamorgan County Hall, Cardiff.

WALES.—June 17.—For building a house and premises at Dowlais, Wales, for Messrs. the Exors. David Williams, Merthyr Tydfil. Mr. C. M. Davies, M.S.A., 112 High Street, Merthyr Tydfil.

WALES.—June 17.—For all trades in carrying out several alterations to 5 Queen Street, Wrexham, for the Welsh Congregational Church. Mr. F. A. Bevan, architect, Wrexham.

WALES.—June 18.—For erection of twenty-five houses at Penygraig, for the Crawshay Building Club. Mr. E. Ivor Evans, architect and surveyor, 55 Dunraven Street, Tonypandy.

WALES.—June 19.—For the erection of a manual instruction centre at Treherbert, Glamorgan, for the Rhondda Urban District Council. Deposit £1 1*s*. Mr. J. Rees, architect, Hillside Cottage, Pentre.

WALES.—June 19.—For construction of a garage and stock rooms at Park Place, Cardiff, for the Park Hall and Hotel Co., Ltd. Deposit £1 1*s*. Mr. E. W. M. Corbett, architect, Castle Street, Cardiff.

WALES.—June 27.—For building a classroom and carrying out alterations at the Llanion schools, Pembroke Dock, for the Pembroke Education Committee. Mr. K. McAlpin, architect, Pembroke Dock.

WATFORD.—July 6.—For erection of a pumping station, including engine house, basement, machine shop, boiler house, coal store, filter house, lime store, and softening tank, for the Watford Urban District Council. Deposit £10. Mr. D. Waterhouse, engineer, Council Offices, High Street, Watford.

WENDLING (NORFOLK).—June 17.—For erection of the Primitive Methodist Church, Wendling. Messrs. A. F. Scott & Son, A.R.I.B.A., architects and surveyors, 24 Castle Meadow, Norwich.

WHITEHAVEN.—For the respective artificers' work required in alterations and additions to the Sun Hotel, for Messrs. Samuel Allsopp & Sons, Ltd., Burton-on-Trent. Mr. E. Martindale, architect, Tangier Buildings, Whitehaven.

WHITEHAVEN.—July 4.—For the erection and completion of seventy-four semi-detached houses and for the construction of roadways, foot-paths, sewers, manholes, &c., required in laying out the site at Arrowthwaite, Whitehaven, for the

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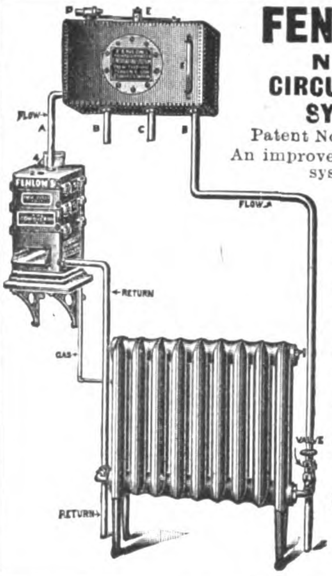

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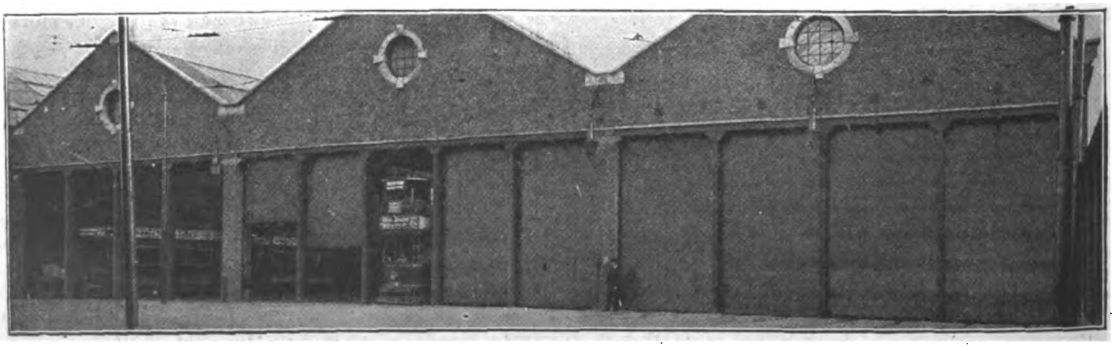

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Whitehaven Colliery Co., Ltd. Deposit £5 5*s*. Mr. J. S. Stout, M.S.A., architect, 36 Lowther Street, Whitehaven.

Wigan.—June 23.—For taking down and removing the existing old buildings and for the erection of new girls' high school, Mab's Cross, for the Education Department. Deposit £1. Messrs. W. C. Ralph & Son, architects, King Street Wigan.

Worksop.—June 19.—For the following works required in erection of two shops and eight houses in Gateford Road, for the Worksop Co-operative Society: (1) Excavator, bricklayer, mason, carpenter, and joiner; (2) plumber, glazier and ironfounder; (3) painter. Mr. J. Haslam, architect, 12 Newcastle Avenue, Worksop.

Wotton-under-Edge. June 17.—For erection of eight working-class dwellings under the provisions of the Housing of the Working Classes Acts, 1890-1900, at Wotton-under-Edge, for the Dursley Rural District Council. (Mr. V. A. Lawson, A.M.I.C.E., Licentiate R.I.B.A., architect.) Send names by June 17 to Mr. J. G. Wenden, clerk, before 12 noon.

TENDERS.

BARNSLEY.

For the erection of a sanatorium pavilion and alterations to existing buildings at Mount Vernon, for the Town Council. Mr. J. H. Taylor, borough surveyor, Barnsley.

Pavilion.

George Haigh, Barnsley (*accepted*)	£1,707	0	0

Alterations.

George Haigh, Barnsley (*accepted*)	£378	0	0

BRENTWOOD.

For the construction of underground public conveniences in the High Street, for the Urban District Council. Mr. A. J. Messon, surveyor, Brentwood.

W. Lingwood, jun.	£548	0	0
Jarvis	355	0	0
French	352	0	0
S. Cronin & Son, Brentwood (*accepted*)	323	0	0

BRIGG (LINCS.).

For the erection of a workhouse infirmary at Brigg, Lincs, for the Guardians of the Glanford Brigg Union. Mr. W. H. Buttrick, P.A.S.I., architect, Scunthorpe.

Quibell	£9,117	4	6
Betts & Newbert	8,170	0	6
Pallister	7,696	7	4
Pattinson & Co.	7,483	0	0
Thompson & Sons	7,330	0	0
H. J. Thompson	7,012	12	7
Taylor & Richardson	6,988	10	0
Thornhill Bros.	6,971	19	2
Barlow & Co.	6,916	2	2
Gilbert & Hall, Nottingham (*provisionally accepted*)	6.862	0	0
Architect's estimate	7,600	0	0

CULVERLEY.

For the erection of a bridge for the New Forest Rural District Council.

Francis, Morton & Co.	£465	19	0
Spriggings	405	0	0
Osman & Co.	373	0	0
Holley	371	7	6
Brading & Son	318	0	0
Douglas	300	0	0
Britten & Son	297	18	2
*Bright & Son, Bartley	244	9	9

* Accepted subject to an addition of £32 10*s*.

GATESHEAD.

For carrying out extensions at the secondary school, Durham Road, for the Education Committee. Mr. W. F. Purser, architect, 10 West Street, Gateshead.

Gresson Bros.	£8,380	18	1
Middlemiss Bros.	7,563	0	0
Nordman	7,393	0	0
J. & W. Lowry	7,242	8	0
Clerey & Charlton	7,126	0	0
C. B. Smith	7,091	12	6
J. Douglass	7.039	16	0
J. Milne (*accepted*)	6.913	0	0

IRELAND.

For the erection of houses in Brookfield and Booterstown, for the Blackrock Urban Council. Messrs. Donnelly & Moore, architects, Dublin.

Louis Monks, Kingstown (*accepted*)	£11,872	0	0

For erection of wash-houses, for the Blackrock Urban Council.

Louis Monks, Kingstown (*accepted*)	£2,040	0	0

WESTWELL.

For alterations and improvements to offices at the Westwell Council School, for the Kent Education Committee. Mr. Wilfrid H. Robinson, M.S.A., architect, Maidstone.

E. J. Miles	£177	0	0
C. J. Howland	138	0	0
*E. J. Bowles, Ashford	128	4	6

* Provisionally accepted.

THE LONDON BUILDING STRIKE.

The following communication was sent to the Press last week by Mr. S B. Depree, Secretary of the London Master Builders' Association, from Koh-i-Noor House, Kingsway:—

The dispute in the building trade of London has now lasted some nineteen weeks, and appears likely to extend to a national dispute. It therefore seems to be a fitting time for placing before the public a few salient points respecting the issues involved.

When the fact is taken into consideration that the public are being asked to contribute to the depleted funds of some of the trade unions involved by means of street collections, charity concerts, and other means, it is time that the generous subscribers should wake up to the true position, for although the builders are being attacked just now, it may soon be the case with manufacturers and all other employers of labour. It takes time to induce the "man in the street" to interest himself in any dispute which does not directly touch his pocket, but he soon calls out whenever there is a strike on the part of railway, tramway, omnibus, or transport workers, which affects his personal comfort or convenience. There are certain principles governing all businesses, and one of the most elementary of such is the adherence to contracts entered into. This is the sole origin of the present trouble in the building trade. Only within the last eighteen months have new codes of working rules been agreed and signed by the London Master Builders' Association and the trade unions concerned, in which an advance of wages averaging 10 per cent. all round was granted. Within a few weeks of these rules being signed jobs were struck all over London without a moment's warning, in absolute defiance of one of the rules, which stated that "for the adjustment of all disputes and to avoid stoppage of work, it is agreed that upon a difference arising between an employer, or upon the works of an employer, and any of his workmen, from any cause whatever, the subject matter of the dispute should be referred to the Board of Conciliation." The reasons given for this action were in nearly all cases that certain workmen did not belong to a Trade Union. The demands made by the Trade Unions now include the following:—

1. The wages of all classes of workmen (both skilled and unskilled) to be advanced a further penny per hour. (It should be noted that this further advance would increase the wages of the unskilled labourer during the past eighteen months from 7*d*. to 9*d*. per hour=30 per cent. advance.)
2. No overtime to be worked unless application is made to the Trade Union, and to be paid for at the rate of time and a half for the first two hours, double time after.
3. Workmen employed outside the London district to receive 2*s*. 6*d*. per day extra, with 15*s*. per week as a maximum, with travelling money, and time occupied in travelling in addition.
4. Rules to be terminated at three months' notice, such notice not to terminate during the winter.
5. Workmen employed at a height of 60 feet to be paid one penny per hour extra.

No conciliation for the settlement of disputes.

My Association has been informed by the Trade Union representatives that it must regard the suggested increase of wages as *moderate*, many of the workmen wishing to demand 1*s*. 3*d*. and 1*s*. 6*d*. per hour. The demands comprised in this new code of rules must be eminently instructive to those London builders who profess to be unable to discern any adequate reason for supporting the London Master Builders' Association. They may also be instructive to the public, who are already complaining of the greatly increased cost of building operations, which arises chiefly from the recent advances in wages, and from other expenses for the benefit of the workmen, such as health and unemployment insurance, and the greatly increased rates for insurance under the Workmen's Compensation Act.

In the present dispute my Association is contending for the honest adherence to trade agreements. It will be observed that incidentally there are other very serious issues now involved. I may add that my Association does not attach much importance to the recent ballots. We are informed that no workman was allowed to vote unless he attended at his lodge for that purpose and voted in the presence of the officials. It is not surprising that the bulk of the workmen would refuse to vote under such circumstances. I note that it is intimated in the Press that the leaders were in favour of a settlement, but this is difficult to believe in face of the recommendations accompanying the ballot paper, which not only confused the issue but in some cases definitely invited the rejection of the peace proposals. In one case the following words actually appear: "We desire to express the opinion that the offer of the London Master Builders' Association represents a distinct defeat so far as we are concerned. . . . We urge you to continue the fight."

In conclusion I would draw attention to one very vital question in dispute, and one to which no honourable employer could possibly consent. The men demand that all those who have remained at work during the dispute shall be discharged, as they are what are called "blacklegs." Comment upon such an outrageous demand is needless.

VARIETIES.

Mr. H. T. Ridge has been appointed surveyor of Romford, where he was serving as acting surveyor. The commencing salary is to be £250 a year.

Sir W. Goscombe John, R.A., has received the commission from the Lord Wolseley Memorial Fund Committee to execute an equestrian statue of that distinguished soldier.

Sir Hubert von Herkomer, R.A., of Lululand, Bushey, Herts, who died on March 31, left £41,319 gross, "so far as can at present be ascertained," with net personalty £24,538.

Breadsall Church, near Derby, which was burned down last week by the frenzied suffragettes, was of very considerable archæological interest. The church was included on the programme of the Royal Archæological Institute's summer meeting, which is to be held next month in Derbyshire.

Mr. P. A. Benn (29), Deputy Borough Surveyor and Waterworks Engineer of Loughborough, has been appointed surveyor and engineer to the Lichfield City Council out of 191 applicants. The salary attached to the appointment is £200 per annum, with house.

The Birmingham City Council have again deferred a recommendation by their Education Committee that the Municipal Technical School should be extended at a cost of £105,000. Consideration of the scheme has been postponed until it is definitely known what relief to the rates may be expected from the Budget proposals.

The Senate of London University are instituting a part-time Chair of Town Planning, tenable at University College, at a salary of £400 a year. The Professor will act in co-operation with the Professor of Architecture and the Chadwick Professor of Municipal Engineering, who deals with the engineering aspects of town planning.

The Winchester Town Council have appointed a subcommittee to draw up a scheme for the erection of not more than twenty-five houses, suitable for the working classes, the recommendation arising from the consideration of the medical officer's report upon the housing conditions in Winchester.

The Wallasey Town Council on Tuesday last adopted the following tenders in connection with the proposed electricity station at Poulton: Messrs. Hughes & Sterling (Liverpool) for £11,437, for the new building; Messrs. Ferranti, Ltd. (London) for £1,304, for transformers; and Mr. L. Prat (London) for £1,084, for three steel chimneys.

The Warrington Town Council on Tuesday decided to send a deputation to London to learn all it could from the Local Government Board as to the Housing and Town-planning Act. It was also decided to give notice that persons erecting houses in excess of twenty to the acre, pending the adoption of a scheme, would do so at their own risk.

At a meeting this week of the Liverpool Cathedral Committee it was reported that, in consequence of the recent advance in the wages to masons and others engaged in the building of the cathedral, the cost would be added to by £5,200 in respect of the portion now being built. This increases the balance required to £37,500. Towards the sum needed an anonymous promise of £1,000 has been received.

H.M. Consul-General at San Francisco (Mr. A. C. Ross, C.B.) reports that, in the course of the eight years which have passed since the great fire there, buildings have been re-erected to the value of about £48,342,000, or about two-thirds of the value of the destroyed buildings. It is probable that the majority of the 27,000 new buildings are larger than those they have replaced, and that, though the total number of new buildings is less than the number destroyed, yet the total amount of habitable accommodation now available is greater than before the fire.

The Birmingham Trades Council, at its last meeting at Queen's College, had again before them the question of a 30*s.* minimum wage for municipal employees. Indignation was expressed that the City Council Wages Committee had declined to recommend the adoption of the minimum wage, and the following resolution, proposed by the Chairman, Mr. E. E. Edwards, was unanimously adopted: "That this Council, being convinced that an ordinary family cannot live in anything like decency on less than 30*s.* per week owing to the continued increase in the cost of the necessaries of life, reiterates its demand that the municipality of Birmingham shall pay to all its workmen a minimum wage of 30*s.*"

The Board of Trade gave notice on May 6 that they proposed to make two Special Orders under Section 103 of the National Insurance Act, extending the provisions of Part II. of the Act (Unemployment Insurance) to workmen employed in the following trades: (1) Repairing works of construction other than roads and the permanent way of railways; (2) saw-milling, including machine woodwork, whether carried on in connection with any other insured trade or not. Objections to the proposed extensions have been received, and the Board have appointed Mr. A. A. Hudson, K.C., to hold inquiries with regard to the proposed orders. The inquiries will be open to the public, and will be held in the Board Room, Central Office for Labour Exchanges and Unemployment Insurance, Queen Anne's Chambers, Westminster. The investigation with regard to the Order relating to repairing works of construction will commence on the afternoon of the 15th inst., that with regard to the Order relating to saw-milling on the morning of the 17th inst. Any objector and any other person who, in the opinion of the person holding the inquiry, is affected by the proposed Order may appear either in person or by counsel or other representative.

At the resumed conference of delegates of the Hearts of Oak Benefit Society at the Society's headquarters in Euston Road, London, W.C., on the 4th inst., Mr. G. Dew, L.C.C., Chairman of the Building Committee, said the unfortunate lock-out in London had practically brought their various building enterprises to a standstill. A delegate revived the question of the compulsory cessation of the Society's building extension operations, and moved that the Executive Council inform Messrs. Foster & Dicksee (the contractors) "that the early erection of the new building is of the utmost importance, and in the event of the firm's refusal to proceed at once with the work, the Executive Council shall be empowered to take such steps as are necessary to make other arrangements for the erection of the building." He suggested that the Society should take note of how Mrs. Besant and the Theosophical Society had overcome their difficulties. He believed that 75 per cent. of the locked-out men were members of the Society, and were applying to the Society for their benefits. In view of these facts, he thought the Council should be empowered to get the building erected. Mr. Dew explained that a clause guarding the contractor against lock-outs was inserted in every agreement, and the motion was defeated by a large majority.

THE
The Architect and Contract Reporter.
FRIDAY, JUNE 19, 1914.

EDITORIAL NOTICES.

The Editor will always be pleased to examine drawings or articles with a view to publication, but cannot be responsible for the safety of those sent, though every reasonable care will be taken. Contributors desiring payment should clearly state their wishes. No payment will be made until after publication, and a commission to prepare articles or drawings does not necessarily imply acceptance or approval

No communication can be inserted unless authenticated by the name and address of the writer—not in every case for publication, but as a guarantee of good faith.

We have upon our staff a very eminent Barrister, who will be glad to answer in the columns of this paper any legal question that may be of interest to our readers. All letters must be addressed "Legal Adviser," Office of "The Architect," Imperial Buildings, Ludgate Circus, London, E.C.

The Editor will be glad to receive from Architects in London and the Provinces results of Competitions and Tenders and other particulars of Works in progress in which they may be interested.

TENDERS, ETC.

⁂ *As great disappointment is frequently expressed at the nonappearance of Contracts Open, Tenders, &c., it is particularly requested that information of this description be forwarded to the Office, Imperial Buildings, Ludgate Circus, London, E.C., not later than 2 P.M. on Thursdays.*

COMPETITIONS OPEN.

BATLEY.—The Education Committee are prepared to receive from architects, resident or practising in the Borough of Batley, and to consider complete schemes (with plans and details) for the proposed Council school at Healey. For particulars apply to Mr. G. R. H. Danby, M.A., Director of Education, Education Offices, Batley.

BIGGLESWADE.—The Rural District Council have agreed to purchase a piece of land at Potton, Beds, and invite plans for the setting out of the site and of the cottages to be built thereon. Particulars can be obtained from Mr. Henry Chaundler, clerk to the Council, Biggleswade, Beds.

CONWAY.—The Board of Guardians invite schemes, with plans, for the laying out of a plot of land near Conway for the provision of one relieving home and four cottages homes, and for laying out of the remainder of the plot for future cottage homes, recreation grounds, &c. Premiums of £10 and £5. Commission will be paid for work carried out during the first five years from date of acceptance of a scheme. Send applications to Mr. J. W. Post, clerk to the Guardians, Union Offices, Conway.

GATESHEAD.—The Education Committee invite competitive designs from architects for a new school for 700 scholars in King Edward Street, Sunderland Road, Gateshead. Copies of the conditions and plan of the site may be had on application at the Education Offices, Gateshead. (Mr. R. T. Edington, Secretary.)

GLASGOW.—The Tramways Committee of the Corporation of Glasgow invite designs for tramway shelter and convenience. Plan of ground and other particulars may be obtained from Mr. James Dalrymple, General Manager, 46 Bath Street, Glasgow.

GLASGOW.—Sept. 18.—The Corporation invite competitive plans of buildings proposed to be erected at the north-west corner of Trongate and High Street. Premiums of £50, £30 and £25 will be awarded. Deposit £1, returnable only on receipt of a set of plans. Mr. J. Lindsay, town clerk, City Chambers, Glasgow.

LIVERPOOL.—The Parks and Gardens Committee of the Corporation invite designs from architects, surveyors, and landscape gardeners for the laying out as a public park and recreation grounds the Walton Hall Estate, with an estimate of the cost. Premiums of 100, 50, and 25 guineas respectively will be awarded to the competitors whose designs shall be considered to be respectively first, second, and third in order of merit, such designs to become the absolute property of the Corporation. Conditions and plan of the site may be obtained on deposit of one guinea, which will be returned on receipt of *bona-fide* designs. Mr. Edward R. Pickmere, Town Clerk, Town Clerk's Office, Liverpool.

LONDON.—Sept. 7.—The London County Council invites designs for new public elementary schools at (1) Linda Street, York Road, Battersea, and (2) Billingsgate Street, Church Street, Greenwich, and has appointed Mr. John W. Simpson, F.R.I.B.A., 3 Verulam Buildings, Gray's Inn, W.C., to act as professional assessor and adviser. Deposit of £1 1*s*., payable to the Education Cashier, will be returned on receipt of a bona-fide design for either or both schools, or on the return of the particulars within one month. The Education Officer, Education Offices, Victoria Embankment, W.C. (See advertisement.)

MIDDLETON.—July 16.—The Corporation invite designs for a town hall proposed to be erected in Long Street at a cost of £18,000. Premiums of £100, £50, and £25 are offered. The assessor is Mr. Hastwell Grayson, F.R.I.B.A., M.A. Deposit £1 1*s*., which will be returned on receipt of a design. Mr. F. Entwistle, town clerk, Town Hall, Middleton.

REIGATE.—July 25.—The Borough Council invite competitive designs for a police and fire station to be erected at Redhill. Premiums of 40, 20, and 10 guineas are offered. Mr. Alfred Smith, town clerk, Municipal Buildings, Reigate.

SAMFORD.—June 29.—The Rural District Council invite plans and designs for working-class cottages in country districts. The author of the selected plan will receive £5 and will act as architect for the erection of the first ten cottages. Mr. A. J. Haward, clerk, 34 Princes Street, Ipswich.

WHITBY.—The Urban District Council invite plans for the improvement of the Whitby Saloon Theatre and grounds, and the erection therein of a concert hall. Particulars can be obtained from, and conditions of competition seen on application to, Mr. T. K. Scott, surveyor, Council Offices, Flowergate, Whitby.

YORK.—The Committee of the St. Clement's Working Men's Club offer a prize of £25 for the best plans and specifications submitted in competition for the erection of a new model club. For full particulars and conditions apply to the Secretary, 3 Queen Victoria Street, York.

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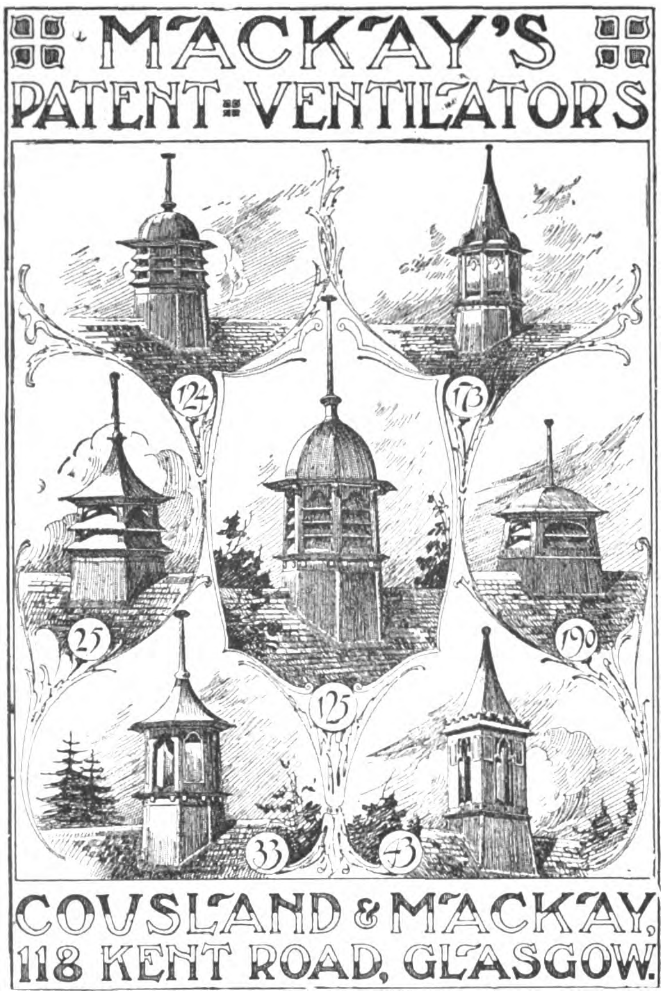

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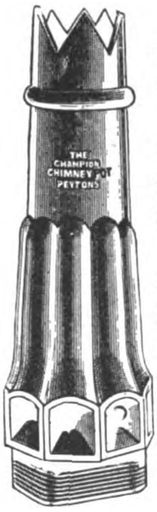
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Dewsbury.—June 24.—For the various works required in erection of a dwelling-house in Dewsbury. Messrs. Kirk, Sons & Ridgway, F.R.I.B.A., architects, surveyors, and valuers, Market Place, Dewsbury.

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Heaton.—For the various works required in erection of a residence at Heaton, Yorks. Mr. J. Ledingham, F.R.I.B.A., architect, District Bank Chambers, Bradford.

Hitchin.—July 13.—For erection of an isolation hospital for sixteen beds, with the necessary administration block, laundry, &c., on a site adjoining the main road from Hitchin to Letchworth, for the Hitchin Rural District Council. (Mr. H. P. Adams, F.R.I.B.A., architect, 28 Woburn Place, Russell Square, W.C.) Deposit £5. Mr. A. E. Passingham, clerk, 5 Bancroft, Hitchin.

Huddersfield.—June 27.—For erection of a new garage, storage shed, retaining wall, and subsidiary works adjoining the tramway power station at Longroyd Bridge, for the Corporation. Mr. K. F. Campbell, M.I.C.E., borough engineer and surveyor, 1 Peel Street, Huddersfield.

Hull.—July 1.—For the necessary work to be performed in erection and drainage of certain buildings, forming part of a tuberculosis hospital, at the Cottingham Castle estate, for the Health Committee. Deposit £2 2*s.* Mr. J. H. Hirst, city architect, Guildhall, Hull.

Ipswich.—June 23.—For erection and completion of a transformer sub-station adjoining Duke Street, for the Corporation. Mr. J. R. Mead, borough engineer and surveyor, Town Hall, Ipswich.

Ireland.—June 23.—For alterations at Dufferin Hospital and operating theatre, erecting new offices, making new ceilings in dormitories, plastering walls, erecting new fire-escape stairs, and handrail works, Class C, for the Guardians of Belfast Union. (Messrs. Young & Mackenzie, architects and engineers, Belfast.) Deposit £1 1*s.* Mr. Acheson Ferguson, surveyor, Scottish Provident Buildings, Belfast.

Kenneggy.—June 22.—For extension, reseating, and general renovation of Kenneggy Wesleyan Chapel, Cornwall. Mr. W. T. H. Hosken, Newtown, Germoe, Marazion.

Kiveton Park.—June 23.—For the whole or any part of the work required in the erection and equipment of a cinema house in Wales Road, for the Kiveton Park Cinema Co., Ltd. Mr. W. Akrill, architect, South Anston, near Sheffield.

Knottingley.—June 20.—For the various works required in the erection and completion of a residence at Knottingley, for Mr. E. L. Poulson, J.P. Forward names by June 20 to Mr. W. J. Tennant, architect and surveyor, Pontefract.

Leyton.—June 30.—For cleansing, painting, and alterations to various schools, and tar-paving playgrounds, Church Road school, and repairs to tar-paving (two schools), during the summer vacation, for the Leyton Urban District Council (Education Committee). Send in application and £1 deposit by June 24 to Mr. W. Jacques, A.R.I.B.A., 2 Fen Court, Fenchurch Street, E.C.

London.—June 23.—For the execution of work in connection with the provision and fixing of new waste and soil pipes and other sanitary fittings at their infirmary, Brook Street, Kennington Road, S.E., for the Lambeth

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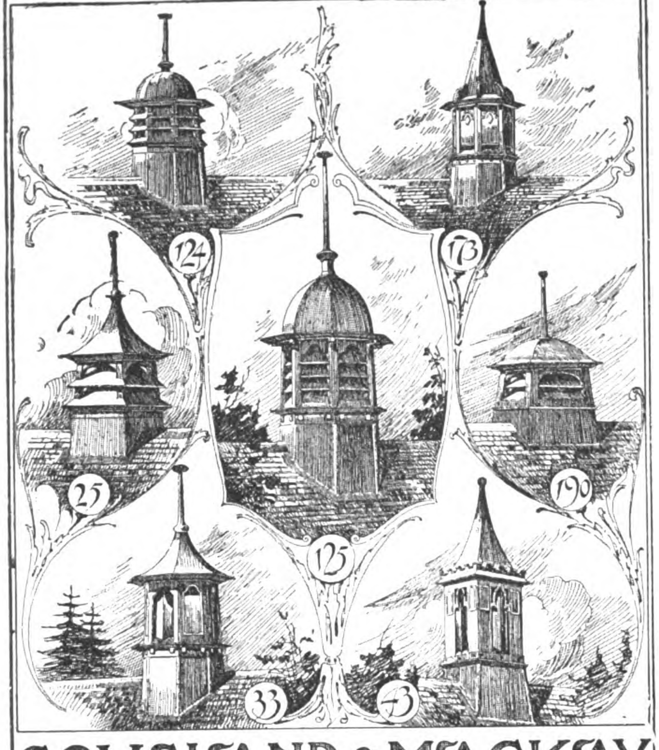

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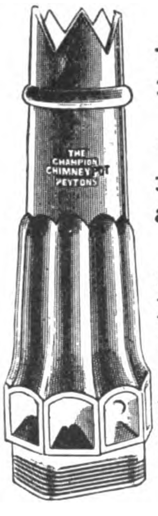

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Halstead.—June 27.—For execution of summer repairs at Halstead Council School, for the Kent Education Committee. (Mr. W. H. Robinson, M.S.A., committee's architect, Maidstone.) Mr. E. Goldsack, correspondent, Ennisdale, Bayham Road, Sevenoaks, and the Sessions House, Maidstone. (See advertisement.)

Heaton.—For the various works required in erection of a residence at Heaton, Yorks. Mr. J. Ledingham, F.R.I.B.A., architect, District Bank Chambers, Bradford.

Hitchin.—July 13.—For erection of an isolation hospital for sixteen beds, with the necessary administration block, laundry, &c., on a site adjoining the main road from Hitchin to Letchworth, for the Hitchin Rural District Council. (Mr. H. P. Adams, F.R.I.B.A., architect, 28 Woburn Place, Russell Square, W.C.) Deposit £5. Mr. A. E. Passingham, clerk, 5 Bancroft, Hitchin.

Huddersfield.—June 27.—For erection of a new garage, storage shed, retaining wall, and subsidiary works adjoining the tramway power station at Longroyd Bridge, for the Corporation. Mr. K. F. Campbell, M.I.C.E., borough engineer and surveyor, 1 Peel Street, Huddersfield.

Hull.—July 1.—For the necessary work to be performed in erection and drainage of certain buildings, forming part of a tuberculosis hospital, at the Cottingham Castle estate, for the Health Committee. Deposit £2 2*s*. Mr. J. H. Hirst, city architect, Guildhall, Hull.

Ipswich.—June 23.—For erection and completion of a transformer sub-station adjoining Duke Street, for the Corporation. Mr. J. R. Mead, borough engineer and surveyor, Town Hall, Ipswich.

Ireland.—June 23.—For alterations at Dufferin Hospital and operating theatre, erecting new offices, making new ceilings in dormitories, plastering walls, erecting new fire-escape stairs, and handrail works, Class C, for the Guardians of Belfast Union. (Messrs. Young & Mackenzie, architects and engineers, Belfast.) Deposit £1 1*s*. Mr. Acheson Ferguson, surveyor, Scottish Provident Buildings, Belfast.

Kenneggy.—June 22.—For extension, reseating, and general renovation of Kenneggy Wesleyan Chapel, Cornwall. Mr. W. T. H. Hosken, Newtown, Germoe, Marazion.

Kiveton Park.—June 23.—For the whole or any part of the work required in the erection and equipment of a cinema house in Wales Road, for the Kiveton Park Cinema Co., Ltd. Mr. W. Akrill, architect, South Anston, near Sheffield.

Knottingley.—June 20.—For the various works required in the erection and completion of a residence at Knottingley, for Mr. E. L. Poulson, J.P. Forward names by June 20 to Mr. W. J. Tennant, architect and surveyor, Pontefract.

Leyton.—June 30.—For cleansing, painting, and alterations to various schools, and tar-paving playgrounds, Church Road school, and repairs to tar-paving (two schools), during the summer vacation, for the Leyton Urban District Council (Education Committee). Send in application and £1 deposit by June 24 to Mr. W. Jacques, A.R.I.B.A., 2 Fen Court, Fenchurch Street, E.C.

London.—June 23.—For the execution of work in connection with the provision and fixing of new waste and soil pipes and other sanitary fittings at their infirmary, Brook Street, Kennington Road, S.E., for the Lambeth

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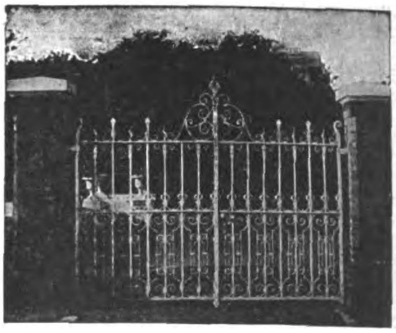
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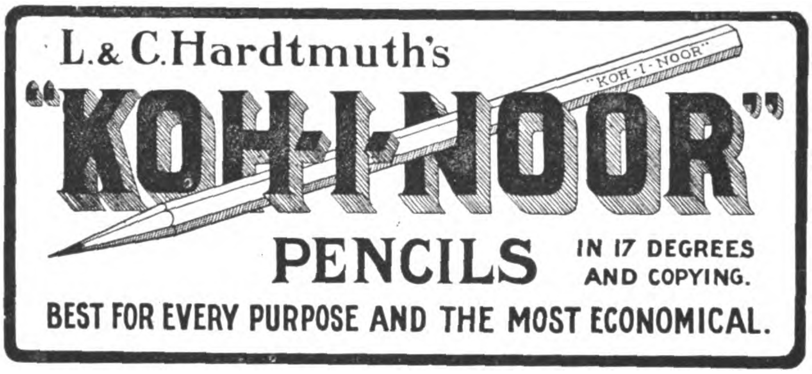
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London.—June 23.—For taking up the old flooring and relaying with new to two wards at their infirmary, Cale Street, S.W., for the Chelsea Board of Guardians. Mr. E. J. Harrison, architect, 9 Gray's Inn Square, W.C.

London.—June 29.—For the execution of certain works at the town hall, Rosebery Avenue, involving structural alterations in the offices and sanitary conveniences, for the Finsbury Borough Council. The Borough Surveyor's Office, Town Hall, Rosebery Avenue, London, E.C.

London.—July 1.—For erection of a boiler-house, chimney shaft, mortuary, &c., at the North-Western Fever Hospital, Lawn Road, Hampstead, N.W., for the Metropolitan Asylums Board. Deposit £1. Mr. W. T. Hatch, M.I.C.E., M.I.M.E., engineer-in-chief, the Office of the Board, Embankment, E.C.

London.—July 3.—For erection of a temporary building on the Board's property facing Rosebery Avenue, E.C., and incidental works in connection therewith, for the Metropolitan Water Board. The Board's Surveyor, Savoy Court, Strand, W.C. Send £2 deposit to the Accountant at Savoy Court, Strand.

London.—July 20.—For extension of the Tooting Bec Asylum, Tooting Bec Road, Tooting, S.W., for the Metropolitan Asylums Board. Deposit £5 5*s*. Mr. T. W. Aldwinckle, F.R.I.B.A., 20 Denman Street, London Bridge, S.E.

Manchester.—June 25.—For erection of a bowl-house and two sets of conveniences at New Moston Recreation Ground, for the Corporation. Deposit £1 1*s*. The City Architect, Town Hall, Manchester.

Margate.—July 20.—For reconstruction and extension of the Children's Hospital, East Cliff Home, for the Metropolitan Asylums Board. Deposit £5 5*s*. Mr. T. W. Aldwinckle, F.R.I.B.A., architect, 20 Denman Street, London Bridge, S.E.

Mickleby.—June 23.—For erection of a Congregational manse at Mickleby, Hinderwell, Yorks. The Manse, Mickleby, and Mr. H. Moore, architect and surveyor, 123 Albert Road, Middlesbrough.

Middlesbrough.—June 24.—For internal alterations and additions, including the provision of sanitary conveniences in the departments of the medical officer of health and borough accountant at the municipal buildings, for the Corporation. Mr. S. E. Burgess, M.I.C.E., Municipal Buildings, Middlesbrough.

Newton Abbot.—July 11.—For general repairs, painting, &c., to tower, church, school, &c., for the Trustees of the Newton Abbot Wesleyan Church. Mr. A. E. Dodge, 87 Queen Street, Newton Abbot.

Norwich.—June 23.—For repairs and additions to the premises formerly known as the Eye Infirmary, Pottergate Street, for the Corporation. Mr. A. E. Collins, M.I.C.E., city engineer, &c., Guildhall, Norwich.

Plymouth.—June 22.—For alterations and repairs to 6 Moon Lane and 14 North Street. Mr. J. Paton, borough engineer and surveyor, Municipal Offices, Plymouth.

Poringland (Norfolk).—June 29.—For building a children's home at Poringland, for the Henstead Board of Guardians. Deposit £1 1*s*. Mr. J. B. Panks, architect, Framingham Pigot, Norwich.

Rayne.—July 4.—For alterations, additions, and painting at the Felstead, Rayne Council school, near Rayne Railway Station, for the Essex Education Committee. Mr. G. Topham Forrest, county architect, 73 Duke Street, Chelmsford.

Saltaire.—For the various works required in the erection of a pair of houses at Saltaire. Mr. T. H. Gamble, architect, 9 Bond Street, Bradford.

Scotland.—June 20.—For the mason, carpenter, slater, plumber, and plaster works of new dwelling-house to be erected at Parkfoot, Mulben. Mr. D. T. Samson, factor, Keith.

Scotland.—June 22.—For the mason, carpenter, slater, plumber, plaster, painter, and glazier works of picture house to be erected at East Church Street, Buckie. Mr. W. Hendry, architect, 91 West Church Street, Buckie.

Scotland.—June 22.—For the mason, carpenter, slater, plumber, and plaster works of additions to Lyne of Skene public school. Messrs. Jenkins & Marr, C.E. and architects, 16 Bridge Street, Aberdeen.

Scotland.—June 25.—For the extension of Dundee Post Office, for the Commissioners of H.M. Works and Public Buildings. Tenders are required for the whole work, and not for separate trades. Deposit £1 1*s*. The Postmaster, Dundee Post Office, and H.M. Office of Works, 3 Parliament Square, Edinburgh.

Seaham Harbour.—June 30.—For erection and completion of forty-five houses, together with all road, sewer, and fencing works in connection therewith, for the Urban District Council. Deposit £1 1*s*. Mr. W. R. Robinson, assistant surveyor, Council Offices, Seaham Harbour, Durham.

Stockport.—June 22.—For erection of a new pavilion and additional verandahs to existing pavilions at the Stepping Hill Hospital, for the Guardians of Stockport Union. Send application and £2 2*s*. deposit by June 22 to Messrs. Peirce & Son, architects, 30 St. Peter's Gate, Stockport.

Stratton.—June 30.—For erection of a Wesleyan chapel at Stratton, near Dorchester, for the Trustees. Mr. F. T. Maltby, A.M.I.C.E., architect and surveyor, South Street, Dorchester.

Staveley.—For erection of a picture palace adjoining the Foresters' Arms Hotel. Mr. J. P. Earle, architect, Norfolk Chambers, Norfolk Row, Sheffield.

Surfleet.—For erection of houses and alterations at Glen Farm, for the Holland County Council. Mr. E. J. A. Christie, county land agent, Sessions House, Boston.

Tadcaster.—July 3.—For the works connected with erection of bathrooms, overhead gangway, and the provision of baths, lavatory, fittings, &c., for the Board of Guardians. Messrs. Bromet & Thorman, engineers, Tadcaster.

Tonbridge.—July 7.—For erection of twenty-five pairs of cottages in connection with the rural housing scheme, for the Tonbridge Rural District Council, in various parts of their district—viz.: (*a*) Brenchley (Petteridge site), three pairs; (*b*) ditto (Pixot Hill site), two pairs; (*c*) Paddock Wood (Warrington site), three pairs; (*d*) ditto (Catts Place site), two pairs; (*e*) Hadlow, five pairs; (*f*) Hildenborough, two pairs; (*g*) Horsmonden, four pairs; (*h*) Pembury, four pairs. (Mr. F. Harris, surveyor, The Broadway, Southborough, Tunbridge Wells.) Send in name and address, accompanied by £2 2*s*. deposit, by June 22 to Mr. N. R. Stone, clerk, 23 Church Road, Tunbridge Wells.

Torquay.—June 26.—For erection of an opera house, café, and business premises. Deposit £5. Mr. F. G. Moore, M.A., B.Sc., associated architect, Fleet Street, Torquay.

Uppermill.—June 26.—For the whole or any portion of the works in erection of miniature range and instructor's quarters at the Uppermill headquarters, Saddleworth, for the West Riding of Yorkshire County Association. Mr. W. Cooper, F.R.I.B.A., architect, 4 Kirkgate Buildings, Huddersfield.

Usk (Mon.).—June 24.—For erection of farm buildings at Usk, for Mr. J. Hammond. Mr. Sidney Williams, Licentiate R.I.B.A., Wharton Street, Cardiff.

Wales.—For rebuilding the Llanharran Arms Hotel, Ogmore Vale, for the Rhondda Valley Breweries Co., Ltd. Mr. T. J. Evans, architect, Pencoed.

Wales.—June 22.—For erection of weights and measures offices in Womanby Street, for the Cardiff Corporation. The City Engineer's Office, City Hall, Cardiff.

Wales.—June 25.—For alterations and additions to 1 Station Terrace, Penrhiwceiber, for Mr. A. M. Jones, chemist. Mr. R. S. Griffiths, M.S.A., architect and surveyor, Tonypandy.

Wales.—June 27.—For erection of eight houses at Grawen, Brecon Road, for the Grawen Building Club. Mr. O. P. Bevan, P.A.S.I., architect, Express Chambers, Merthyr Tydfil.

Wales.—June 29.—For erection of twenty or more cottages with ten villas on football field, Treharris, for Messrs. the Grove Building Club. Mr. E. W. Davies, architect and surveyor, Treharris.

Wales.—June 29.—For certain works of repair to and the completion of twenty-six houses at Trewyddfa Common, Swansea, for the Corporation. Deposit £1 1*s*. Mr. H. C. Portsmouth, M.S.A., architect, Llanfair Buildings, St. Mary Street, Swansea.

Wales.—July 6.—For builder's work in connection with the extension of Pant mixed school, for the Merthyr Tydfil Education Committee. Deposit £1 1*s*. The Borough Architect, Town Hall.

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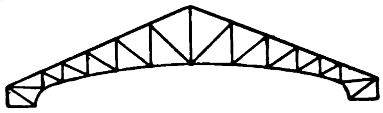

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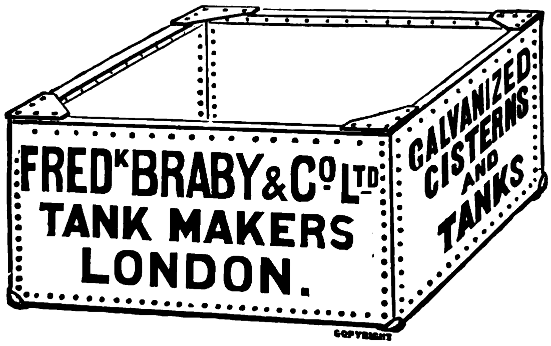

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Wales.—July 15.—For erection of a laundry at the Joint Counties Asylum, Carmarthen, for the Committee of Visitors. (Messrs. George Morgan & Son, architects, 24 King Street, Carmarthen.) Send applications and £3 3*s*. deposit by June 27 to Mr. W. J. Wallis-Jones, clerk to the Visitors, 34 Quay Street, Carmarthen.

Watford.—July 6.—For erection of a pumping station, including engine house, basement, machine shop, boiler house, coal store, filter house, lime store, and softening tank, for the Watford Urban District Council. Deposit £10. Mr. D. Waterhouse, engineer, Council Offices, High Street, Watford.

Whitehaven.—July 4.—For the erection and completion of seventy-four semi-detached houses and for the construction of roadways, foot-paths, sewers, manholes, &c., required in laying out the site at Arrowthwaite, Whitehaven, for the Whitehaven Colliery Co., Ltd. Deposit £5 5*s*. Mr. J. S. Stout, M.S.A., architect, 36 Lowther Street, Whitehaven.

West Ardsley.—June 24.—For erection of. working men's club and caretaker's house at Tingley, West Ardsley, Yorks. Mr. F. W. Bedford, secretary, Club House, Tingley.

Westbourne.—July 6.—For erection of a cottage for the sewage works manager at the sewage purification works, for the Warblington Urban District Council. (Mr. A. J. Martin, M.I.C.E., 7 Victoria Street, Westminster, S.W.) Deposit £2 2*s*. Mr. J. A. L. Cooper, clerk, 14 Queen Street, Emsworth.

Wigan.—June 23.—For taking down and removing the existing old buildings and for the erection of new girls' high school, Mab's Cross, for the Education Department. Deposit £1. Messrs. W. C. Ralph & Son, architects, King Street Wigan.

Wilts.—July 14.—For carrying out works in alterations, additions, repairs, and renovations, &c., at various Council schools during the summer vacation, 1914, for the General Education Committee of the Wilts County Council. Mr. J. G. Powell, county surveyor, Trowbridge.

Winchcomb (Glos.).—June 27.—For erection of twelve workmen's dwellings, for the Winchcomb Rural District Council. Deposit 10*s*. 6*d*. Mr. Thomas Malvern, Licentiate R.I.B.A., architect, 21 Winchcombe Street, Cheltenham.

Yiewsley.—July 6.—For carrying out certain works of repair required at the two cottages adjoining the Council Offices, High Street, for the Yiewsley Urban District Council. Mr. W. H. Lea, clerk.

Yorks.—For the following works at the schools named, for the West Riding County Council: Fitting up a classroom as domestic subjects' centre at Intake Council School; trades—ironmonger, joiner, plumber, and builder. General repairs at Woodhouse West School; joiner and builder. Ventilation hoppers at Birley School. Summer cleaning, &c., at Aughton, Ravenfield, Thrybergh, Dinnington, Anston, Wales, Woodhouse, Gleadless, and Intake Council Schools. Mr. F. Abson, Education Offices, Woodhouse.

TENDERS.

BRADFORD.

For the erection of extensions to Manningham District Baths. Mr. W. Williamson, architect, Bradford.

Accepted tenders.

E. Fearnley & Sons, excavators, masons, and bricklayers	£314	0	0
G. Jackson, plumber and glazier	339	2	0
J. Goodyear, plasterer	246	6	0
E. Balmforth & Sons, carpenters and joiners	81	16	0
Sutcliffe Bros., ironfounders and smiths	64	7	0
Roome & Co., painters	13	10	0

COSTESSEY.

For the erection of three pairs of cottages at Costessey, Norfolk, for the Forehoe Rural District Council. Mr. J. O. Bond, architect, Norwich.

Tofts	£1,342	14	0
English & Son	1,217	14	0
Smith	1,170	0	0
Gunton	1,164	15	0
Palmer	1,150	0	0
Wathing	1,122	0	0
A. E. Palmer	1,070	0	0
E. Collison, Reepham (*accepted*)	1,032	4	0

CHEADLE HULME.

For the erection of branch premises in Mellor Street, for the Stockport Industrial and Equitable Co-operative Society, Ltd. Messrs. Wrathmell & Blackshaw, Licentiate R.I.B.A., FF.M.S.A., architects, Stockport. Quantities by architects.

Powell	£2,174	0	0
Mark Lane	1,900	0	0
Castle & Sons	1,790	0	0
Briggs & Co.	1,770	0	0
D. Eadie & Co., Ltd., Stockport (*accepted*)	1,730	0	0

LONDON.

For cleaning, painting, and repairs at the Western Hospital, Fulham, S.W., for the Metropolitan Asylums Board.

General Building Co.	£1,234	0	0
Hussey	1,045	0	0
A. H. Inns, 36 Camomile Street, Bishopsgate, E.C. (*accepted*)	888	0	0
Engineer-in-chief's estimate	930	0	0

For cleaning, painting, and repairs at the South Western Hospital, Stockwell, for the Metropolitan Asylums Board.

Wall	£820	0	0
Higgs & Hill	755	0	0
Inns	590	0	0
T. Brown & Son, 293 Croxted Road, Dulwich (*accepted*)	495	0	0
Engineer-in-chief's estimate	762	0	0

LOWER HALSTOW.

For drainage work at Lower Halstow Council School, for the Kent Education Committee. Mr. Wilfrid H. Robinson, M.S.A., architect, Maidstone.

Tuke & Bell	£334	0	0
Kemp Bros.	295	0	0
Beattie	289	0	0
T. & A. Brittenden, Sittingbourne (*provisionally accepted*)	238	0	0
L. Seager	235	0	0

MIDHURST.

For alterations and additions to the Grammar School, for the West Sussex and Chichester Joint Education Committee. Mr. H. P. Roberts, F.R.I.B.A., county education architect, Worthing.

Luff	£2,142	0	0
Privett	1,987	0	0
Reeves & Port	1,967	0	0
Deans & Sons	1,948	10	0
Potter	1,896	0	0
Cropley Bros.	1,894	0	0
Burrell & Standen	1,865	0	0
Thomas & Edge	1,863	0	0
Cook & Sons	1,850	0	0
Peskett & Co.	1,820	0	0
Baker & Son	1,805	0	0
Rowland Bros.	1,799	0	0
Longley & Co.	1,798	0	0
Crosby & Co.	1,779	0	0
Sandell & Sons, Worthing (*accepted*)	1,700	0	0

SHOREHAM.

For additions and improvements at the Council school, for the West Sussex and Chichester Joint Education Committee. Mr. H. P. Roberts, F.R.I.B.A., county education architect, Worthing.

Curd	£573	0	0
Sandell & Sons	560	0	0
Gates & Sons	551	7	6
Cheesman	550	0	0
Willett	544	0	0
G. Gillam, Southwick (*accepted*)	537	10	0

WINDSOR.

For the erection of nurses' quarters at the Windsor Union Workhouse, Old Windsor, Messrs. Edgington & Spink, architects, Windsor.

Goddard & Son	£1,524	3	0
Bowyer	1,429	0	0
Love & Co.	1,374	0	0
Clarke	1,370	0	0
Lavington, Ltd.	1,343	0	0
Watson	1,327	0	0
J. K. Cooper & Sons, Ltd., Maidenhead (*accepted*)	1,312	0	0

VARIETIES.

Wigan Town Council have applied to the Local Government Board for sanction to borrow £50,638 for a sewage scheme.

Dumfries Town Council have ordered plans to be drawn up for the erection of a block of forty-eight additional workmen's houses in connection with their municipal building scheme.

The Birmingham Railway Wagon and Carriage Co. have acquired a site of six acres at Burton-on-Trent for the erection of new works. Operations are to be commenced forthwith.

Mr. E. H. Barber, A.M.Inst.C.E., Sheffield, assistant surveyor and engineer to the Sheffield Corporation, has been appointed engineer and surveyor to the Rhondda Urban District Council. The commencing salary is £500 per annum, rising to £750.

The Board of the Newcastle-on-Tyne Lunatic Asylum have under consideration plans for the erection of two villa blocks, each to contain forty male patients, an isolation hospital, a home for fifty-six nurses, and an additional greenhouse, all of which will meet much-needed wants.

The Edinburgh Architectural Association proposes to compile a record of details of Scottish domestic architecture from the late fifteenth to the end of the seventeenth centuries, and for this purpose are willing to pay at the rate of £1 1*s*. per sheet for suitable drawings.

Mr. Stanley Empsall, of Maidenhead, has been appointed temporary assistant surveyor to the Bentley Urban District Council. He is to have charge of the Council's new housing scheme, under which they propose to erect ninety-nine houses at a cost of close upon £24,000.

Messrs. Hope & Tasker, architects, Newcastle, have prepared the plans—which the Town Improvement Committee have approved—for additions and alterations to St. Margaret's Residential Hotel, Jesmond. The scheme embraces a new billiard-room, dining-hall, lounge, kitchen, and sixteen new bedrooms.

The joint committee dealing with the proposal to erect a joint isolation hospital for Morpeth Rural District, Ashington and Newbiggin, have reported that a hospital with 150 beds would be required for the three districts, and that though it would cost the large sum of £30,000, it would be cheaper than the erection of a separate hospital for each of the three districts.

The Birmingham Corporation Asylum Committee will, it is understood, bring forward a recommendation shortly for a very considerable enlargement of Hollymoor Asylum, which at present accommodates 600 patients. The asylum was erected in 1900 at a cost of about £250,000, and was then too large for immediate requirements. It is proposed to provide for a further 400 beds on the Hollymoor Estate.

The Sheffield City Council, at their meeting on the 10th inst., adopted plans and estimates prepared by the city architect of proposed extensions at Lodge Moor Hospital, providing for six new wards, comprising 150 beds, nurses' home, stores, receiving and discharging blocks, operating theatre, eight attendants' cottages, and alterations to existing buildings. The cost of the proposed extensions is estimated at the sum of £68,075.

The Burton-on-Trent Town Council have adopted the recommendation of the Farm Committee for the expenditure of £30,000 for duplicating the sewage rising main from the pumping station to the farm—four and a half miles. Owing to the bursting of the main, sewage recently escaped into the River Trent, and residents on its banks complained. The Town Council also were threatened with an action by the Newton Solney Parish Council.

A Special Committee appointed by the Brighton Town Council to consider the best use to be made of the Aquarium site and the future of the municipal orchestra issued their report last week. They recommended that on the eastern portion of the site a concert hall, accommodating 1,200 persons, shall be erected for the use of the municipal orchestra, and that the western roofs and stairway entrance be remodelled so as to form promenades and garden terraces for outdoor performances. The improvements, the cost of which is estimated at £25,000, will necessitate the removal of some of the existing arches, corridors, and tanks, but a substantial portion of the present building will be retained for marine collection.

Great efforts are being made to house the rapidly rising population of the Dearne Valley in the neighbourhood of Wath-on-Dearne. The Wath Main Colliery Company have acquired the Bolton Hall estate, in the neighbouring parish of Bolton, about a mile from the colliery, and on this they propose to erect 200 houses for the use of their workmen. Close to the Bolton Hall estate the Bolton Council propose to erect 310 houses. The Dearne Valley Colliery Company have acquired a site between the Old Hall and the Council School at Great Houghton, and here they propose to erect 123 houses for their men. In addition, the Urban Councils of Darfield, Wath, and Swinton are all undertaking housing schemes, which have been forced upon them by the great demand for accommodation.

Re A. C. David (& G. C. Johnson) in Bankruptcy.—(Roberts, Adlard & Co., Ltd.) —On the application of Mr. A. C. David, the Registrar granted him an immediate discharge, adding that he was entitled to it on the Official Receiver's statement that he reported no offences—that statements of account, prepared separately by two firms of chartered accountants, before the adjudication showed surplus assets of £7,000, and that the judgment in the action brought by Lord Penrhyn, the petitioning creditor, in the name of the Trustee, stated that the debtor's transactions were *bona fide* and entirely honest.

On Saturday last the Countess of Darnley laid the foundation stone of the Lady chapel and vestries of St. Barnabas Church, Gillingham, Kent. This portion will complete the building of which the nave and aisles were erected in 1889 and the chancel and organ chamber in 1900. The design is Early English Gothic, in keeping with the existing work, and is being carried out in local dark-red bricks and Bath stone from the Monk's Park quarries. The architects are Messrs. Cutts, Davis & Boddy, of Southampton Street, Strand, W.C., and the contractor Mr. A. H. Horne, of Century Road, Rainham, Kent.

The difficult task of straightening a crooked chimney shaft has just been carried out at Batley. For some time back, says the *Leeds Mercury*, the 150 ft. chimney belonging to Messrs. Auty & Sons, brickmakers, Healey, Batley, has been leaning over considerably, but the firm did not consider it dangerous until the past few weeks, when they thought the chimney had gone over more. On removing some thousands of bricks which were stacked round the chimney bottom they discovered that the chimney was badly cracked above the ground, and had shifted off its bed and slid 1½ in. The chimney was about 3 ft. out of plumb, and was a most difficult shaft to straighten owing to the huge cracks. The well-known firm of M. T. Austin & Son, Leeds, known as the "Yorkshire Steeple-jacks," was called in, and instantly commenced their operations to get the stack straight. They cut out the amount of brick-work they considered necessary to bring the chimney over, but the chimney just moved slightly, and commenced to break again below where they had cut out. They immediately banded the cracks above and below the cut with angle-irons and their own patent corner brackets, castings and bars. They then cut further round, and the chimney moved and came over splendidly until it stood quite upright and straight.

TRADE NOTES.

After the string of successes by Talbot cars in motoring competitions during the month of May, Clement Talbot, Ltd., Barlby Road, North Kensington, W., have smartly issued a booklet summarising the whole of the Talbot wins this season, and reproducing a number of actual photographs of their successful cars in recent hill climbs. But it does not do full justice to the Talbot cars' oft-recurring successes, for only last week a further collection of nine silver cups were added to their harvest of trophies by the competing Talbot cars in the Weston-super-Mare Speed Trials.

Those who are decorating should make a point of seeing the new material called "Tekko," a wall covering that delightfully conveys the idea and effect of a rich silk, and combines all the hygienic qualities now demanded. It can be washed with soap and water without injury. Many materials have what is described as a silk surface, but they generally look what they are—poor imitations. This is not so with "Tekko"; a room decorated with this material has a feeling of quality and beauty. The price is moderate, most of the patterns costing 2*s*. 3*d*. per yard 31 inches wide. "Tekko" is made both in a big variety of designs and in a range of guaranteed permanent colours from soft pearly grey and pale blues to rich reds and greens. Samples can be seen in the show-rooms of all good decorators.

THE
Architect and Contract Reporter.
FRIDAY, JUNE 26, 1914.

EDITORIAL NOTICES.

The Editor will always be pleased to examine drawings or articles with a view to publication, but cannot be responsible for the safety of those sent, though every reasonable care will be taken. Contributors desiring payment should clearly state their wishes. No payment will be made until after publication, and a commission to prepare articles or drawings does not necessarily imply acceptance or approval.

No communication can be inserted unless authenticated by the name and address of the writer—not in every case for publication, but as a guarantee of good faith.

We have upon our staff a very eminent Barrister, who will be glad to answer in the columns of this paper any legal question that may be of interest to our readers. All letters must be addressed "Legal Adviser," Office of "The Architect," Imperial Buildings, Ludgate Circus, London, E.C.

The Editor will be glad to receive from Architects in London and the Provinces results of Competitions and Tenders and other particulars of Works in progress in which they may be interested.

TENDERS, ETC.

⁂ *As great disappointment is frequently expressed at the nonappearance of Contracts Open, Tenders, &c., it is particularly requested that information of this description be forwarded to the Office, Imperial Buildings, Ludgate Circus, London, E.C., not later than 2 P.M. on Thursdays.*

COMPETITIONS OPEN.

BATLEY.—The Education Committee are prepared to receive from architects, resident or practising in the Borough of Batley, and to consider complete schemes (with plans and details) for the proposed Council school at Healey. For particulars apply to Mr. G. R. H. Danby, M.A., Director of Education, Education Offices, Batley.

BIGGLESWADE.—The Rural District Council have agreed to purchase a piece of land at Potton, Beds, and invite plans for the setting out of the site and of the cottages to be built thereon. Particulars can be obtained from Mr. Henry Chaundler, clerk to the Council, Biggleswade, Beds.

GATESHEAD.—The Education Committee invite competitive designs from architects for a new school for 700 scholars in King Edward Street, Sunderland Road, Gateshead. Copies of the conditions and plan of the site may be had on application at the Education Offices, Gateshead. (Mr. R. T. Edington, Secretary.)

GLASGOW.—Sept. 18.—The Corporation invite competitive plans of buildings proposed to be erected at the north-west corner of Trongate and High Street. Premiums of £50, £30 and £25 will be awarded. Deposit £1, returnable only on receipt of a set of plans. Mr. J. Lindsay, town clerk, City Chambers, Glasgow.

LIVERPOOL.—The Parks and Gardens Committee of the Corporation invite designs from architects, surveyors, and landscape gardeners for the laying out as a public park and recreation grounds the Walton Hall Estate, with an estimate of the cost. Premiums of 100, 50, and 25 guineas respectively will be awarded to the competitors whose designs shall be considered to be respectively first, second, and third in order of merit, such designs to become the absolute property of the Corporation. Conditions and plan of the site may be obtained on deposit of one guinea, which will be returned on receipt of *bona-fide* designs. Mr. Edward R. Pickmere, Town Clerk, Town Clerk's Office, Liverpool.

LONDON.—Sept. 7.—The London County Council invites designs for new public elementary schools at (1) Linda Street, York Road, Battersea, and (2) Billingsgate Street, Church Street, Greenwich, and has appointed Mr. John W. Simpson, F.R.I.B.A., 3 Verulam Buildings, Gray's Inn, W.C., to act as professional assessor and adviser. Deposit of £1 1*s*., payable to the Education Cashier, will be returned on receipt of a bona-fide design for either or both schools, or on the return of the particulars within one month. The Education Officer, Education Offices, Victoria Embankment, W.C. (See advertisement.)

MIDDLETON.—July 16.—The Corporation invite designs for a town hall proposed to be erected in Long Street at a cost of £18,000. Premiums of £100, £50, and £25 are offered. The assessor is Mr. Hastwell Grayson, F.R.I.B.A., M.A. Deposit £1 1*s*., which will be returned on receipt of a design. Mr. F. Entwistle, town clerk, Town Hall, Middleton.

REIGATE.—July 25.—The Borough Council invite competitive designs for a police and fire station to be erected at Redhill. Premiums of 40, 20, and 10 guineas are offered. Mr. Alfred Smith, town clerk, Municipal Buildings, Reigate.

SAMFORD.—June 29.—The Rural District Council invite plans and designs for working-class cottages in country districts. The author of the selected plan will receive £5 and will act as architect for the erection of the first ten cottages. Mr. A. J. Haward, clerk, 34 Princes Street, Ipswich.

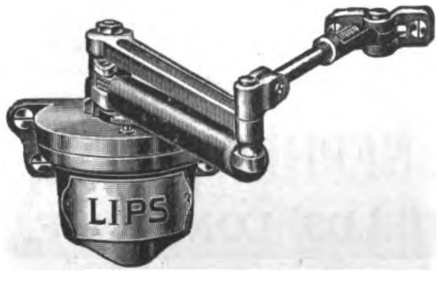
WHITBY.—The Urban District Council invite plans for the improvement of the Whitby Saloon Theatre and grounds, and the erection therein of a concert hall. Particulars can be obtained from, and conditions of competition seen on application to, Mr. T. K. Scott, surveyor, Council Offices, Flowergate, Whitby.

YORK.—The Committee of the St. Clement's Working Men's Club offer a prize of £25 for the best plans and specifications submitted in competition for the erection of a new model club. For full particulars and conditions apply to the Secretary, 3 Queen Victoria Street, York.

CONTRACTS OPEN.

ARMATHWAITE.—For the following work, for Sir Francis Ley, Bart. (contract No. 1): Erection and completion of farmhouse and additions and alterations to existing farm buildings at Low Baron Wood, near Armathwaite; (contract No. 2) erection and completion of a block of four cottages, near Baron Wood Farm, on the road between Lazonby and Armathwaite. Deposit £1 1*s*. each contract. Mr. E. R. Ridgway, M.R.S.I., architect, Long Eaton, near Nottingham.

(*Continued on page* 29.)



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Armley.—July 1.—For the various trades in connection with erection of the following buildings at the workhouse, Armley, Leeds, for the Guardians of Bramley Union: block for able-bodied men, &c., male and female vagrant wards, and infants' bungalow. Messrs. F. W. Rhodes & Son, architects, Upper Wortley, Leeds.

Bargoed.—July 6.—For re-erection of Bank Chambers, recently destroyed by fire. Mr. G. Kenshole, architect, Station Road, Bargoed.

Barnstaple.—June 29.—For erection of a dining-room, for the Managers of the Secondary Schools. Deposit £1 1*s*. Mr. E. Y. Saunders, P.A.S.I., borough surveyor, The Strand, Barnstaple.

Bath.—July 2.—For erection of drill hall, offices, stores, miniature range, &c., and alterations to the existing Territorial premises in the Lower Bristol Road, for the Territorial Force Association. Deposit £1 1*s*. Mr. A. J. Pictor, A.R.I.B.A., architect, Bruton.

Basingstoke.—July 6.—For erection of an additional classroom for fifty children and making other alterations at Basingstoke Fairfields Council School, for the Hampshire County Council. Deposit £1 1*s*. Mr. A. L. Roberts, architect to the Education Committee, The Castle, Winchester.

Beverley.—July 3.—For building works required in alteration of "Norwood Home," for the Guardians of Beverley Union. Deposit £1. Mr. J. Bilson, architect, 23 Parliament Street, Hull.

Blaenavon.—June 29.—For the conversion of Nos. 1 and 2 Bridge Street and Smith's Buildings, Blaenavon, Mon., into a modern workman's home, for the Cambrian Workman's Home Company. Mr. J. P. Davies, architect, "Glenbrook," Ebbw Vale.

Blaina (Mon.).—July 1.—For alterations and additions to the Red Lion Hotel, for Messrs. Webb (Aberbeeg), Ltd., brewers, &c., Aberbeeg, R.S.O., Mon.

Boston.—For erection of a pair of cottages on Corporation farm in the East Fen near Midville Station. Mr. G. E. Clarke, M.I.C.E., borough surveyor, Boston.

Brackley.—July 1.—For erection of twelve workmen's cottages in the Halse Road, Brackley, Northants, for the Borough Council. (Mr. B. Sanderson, Licentiate R.I.B.A., architect, Winslow and Buckingham.) Send applications by July 1 to Mr. C. E. Barnes, town clerk, Brackley.

Bristol.—July 7.—For provision of a receiving office, stable, &c., at Kingswood, for the Great Western Railway Company. The Engineer, Bristol Station.

Bradford.—July 2.—For erection of two greenhouses, one at Bowling Cemetery and one at North Bierley Cemetery, for the Corporation. The City Architect, Town Hall, Bradford.

Carlisle.—July 9.—For extension of buildings at the central electric lighting station in James Street, for the Corporation. Deposit £1 1s. Mr. H. C. Marks, M.I.C.E., city engineer and surveyor, 36 Fisher Street, Carlisle.

Castle-Gresley.—July 14.—For erection of a Council school at Castle-Gresley, near Burton-on-Trent, for the Derbyshire County Council. Mr. G. H. Widdows, F.R.I.B.A., architect to the Education Committee, St. Mary's Gate, Derby.

Castleford.—June 29.—For erection of house and shop, Castle Fields. Mr. A. Hartley, architect, &c., County Chambers, Castleford.

Chase Terrace.—For erection of two shops at Sankey's Corner, Chase Terrace, Staffs, for the Cannock and District Co-operative Society, Ltd. Mr. H. Horton, architect, Bank Chambers, Cannock.

Chorley.—July 1.—For additions and alterations to the Wesleyan Church and Schools, Park Road. Deposit 5*s*. Mr. W. H. Dinsley, architect, 12 Cleveland Street, Chorley, Lancs.

Croydon.—June 29.—For builders' work in connection with the repair and repointing of chimney stacks at the union house, Queen's Road, Croydon, for the Guardians. Deposit £1 1*s*. Mr. H. Berney, architect, 33-35 High Street, Croydon.

Croydon.—July 10.—For erection of a Council school in Tamworth Road, Croydon, for the Education Committee, to provide accommodation for 720 scholars. (Mr. H. C. Pegg, F.R.I.B.A., Thornton Heath.) Deposit £1 1*s*. The Education Office, Katharine Street, Croydon.

Croydon.—July 14.—For erection of a covered steel shed at the Waterworks Yard, Surrey Street, for the Borough Council. Deposit £1 1*s*. The Borough Engineer's Office, Town Hall, Croydon. (See advertisement.)

Dewsbury.—June 29.—For the excavators', masons', bricklayers', joiners', plumbers', and steel work for the erection of a covered stand at Crown Flatts, for the Dewsbury Northern Union Football Club. Mr. W. F. Cave, architect and surveyor, Halifax Road, Dewsbury, and at Heckmondwike.

Eastbourne.—July 1.—For additions to the Willowfield higher-grade schools, for the Education Committee. Mr. W. C. Field, borough architect and building surveyor, Town Hall, Eastbourne.

Eccles.—July 4.—For the works in connection with the cleaning and repairing of the exterior structure of the town hall and cottage in Church Street and Irwell Place, for the Finance Committee (contract No. 1): Mason and bricklayers' work; (2) slater's work; (3) plumber's work; (4) painter's work. Deposit £1 each contract. The Borough Surveyor's Office, Town Hall, Eccles.

Gillingham.—July 15.—For erection of Gillingham (Dorset) new post office, for the Commissioners of H.M. Works and Public Buildings. The Postmaster, Gillingham, and H.M. Office of Works, &c., Storey's Gate, S.W.

Golcar.—June 30.—For the various trades required in erection of a bakehouse, &c., in James Street. Mr. A. Shaw, architect, Golcar.

Goole.—June 30.—For building shelters for tuberculous patients, for the Guardians. Mr. G. England, clerk, Bank Chambers, Goole.

Grantham.—For erection of two cottages at the refuse destructor, Belton Lane, for the Corporation. The Borough Surveyor, Guildhall, Grantham.

Halifax.—July 6.—For the execution of the mason's work required in erection of a public convenience at Salterhebble, for the Health Committee. Deposit £1 1*s*. Mr. J. Lord, M.I.C.E., borough engineer, Town Hall, Halifax.

Halifax.—July 6.—For the execution of various works required in the extension of the technical college, Hopwood Lane, for the Education Committee. Payment of £5 for each set of quantities for mason, ironfounder, slaterer and plasterer, plumber and glazier, and carpenter, and £1 for electrician and painter, which will be forfeited should the contractor not send in a *bona-fide* tender or afterwards withdraw his tender. Mr. J. Lord, M.I.C.E., borough engineer, Town Hall, Halifax.

Ilford.—July 4.—For taking up existing wood-block flooring and providing and laying new wood-block flooring in the assembly halls at Cleveland Road School, for the Ilford Council Education Committee. The work is to be carried out during the ensuing summer vacation. Mr. H. Shaw, M.I.C.E., engineer and surveyor, Town Hall, Ilford.

Ireland.—For erection of seven houses off Ormeau Road, Belfast. Mr. C. Macalister, architect, Whitehall Buildings, Ann Street, Belfast.

Ireland.—July 1.—For additions and alterations to Ballymacelligott Roman Catholic Church. Rev. T. Trant, P.P., Ballymacelligott, Co. Kerry.

Itchen.—July 6.—For the builder's work required in connection with improving the heating apparatus at the Itchen Ludlow Road Council school, for the Hants County Council. Deposit £1 1*s*. Mr. A. L. Roberts, architect to the Education Committee, The Castle, Winchester.

Launceston.—July 9.—For erection of twenty-four cottages, for the Town Council. The Town Clerk, Launceston.

Leicester.—July 3.—For erection of a sanatorium adjoining the isolation hospital, Gilroes, Groby Road, for the Corporation. Deposit £2. Mr. A. H. Hind, F.R.I.B.A., architect, 3 Grey Friars, Leicester.

Little Hadham.—July 1.—For building four cottages at Little Hadham, Herts, for the Hadham Rural District Council. Mr. E. T. Watts, surveyor, London Road, Bishop's Stortford.

London.—July 1.—For erection of a boiler-house, chimney shaft, mortuary, &c., at the North-Western Fever Hospital, Lawn Road, Hampstead, N.W., for the Metropolitan Asylums Board. Deposit £1. Mr. W. T. Hatch, M.I.C.E., M.I.M.E., engineer-in-chief, the Office of the Board, Embankment, E.C.

London.—July 3.—For erection of a temporary building on the Board's property facing Rosebery Avenue, E.C., and incidental works in connection therewith, for the Metropolitan Water Board. The Board's Surveyor, Savoy Court, Strand, W.C. Send £2 deposit to the Accountant at Savoy Court, Strand.

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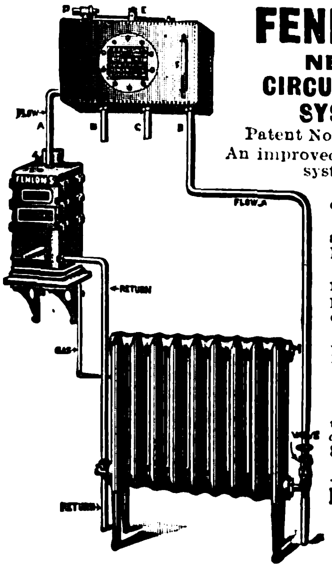

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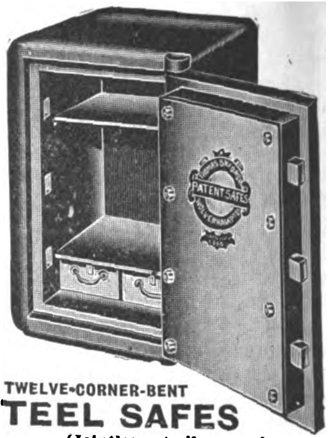

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Lowestoft.—July 6.—For the erection and completion of new buildings and alterations to the town hall, High Street, for the Corporation. Deposit £2. Mr. G. H. Hamby, A.M.I.C.E., borough surveyor, Town Hall, Lowestoft.

Newark.—July 7.—For erection of handicraft and domestic centres and various alterations at the Old Magnus Buildings, Appleton Gate, for the Education Committee. Deposit £1 1*s.* Mr. H. W. Lockton, Licentiate R.I.B.A., M.S.A., architect, Newark.

Newbury.—July 7.—For extension of goods office at Newbury Station, for the Great Western Railway Company. The Engineer, Paddington Station.

Newby West.—For the various trades required in erection of one pair of cottages at Newby West Farm, Carlisle (Mr. Charles W. Eaton, A.R.I.B.A., architect, Leicester); also for the erection of six pairs of cottages at the proposed garden village, Wigton Road, for the Newby West Tenants, Ltd. Mr. S. W. B. Jack, architect, 19 Lowther Street, Carlisle.

Newport (Mon.).—For the supply and erection at Newport, Mon., of mill buildings, covering an area of approximately 143,000 square feet: (Section 1) Steel columns, crane tracks, framing, and sheeting; (2) Belfast or similar type roofs. The Whitehead Iron and Steel Company, Ltd., Tredegar, Mon.

Oswaldtwistle.—July 9.—For erection and completion of a Carnegie free library in Union Road, for the Urban District Council. Deposit £1 1*s.* Mr. F. Q. Farmer, architect, 14 Little Park Street, Coventry.

Perranwell.—June 30.—For erection of a residence at Perranwell, Cornwall. Mr. A. J. Cornelius, M.S.A., architect, Truro.

Pontypool.—July 6.—For the erection of a nurses' home at Pontypool, for the Executive Board. Deposit £2 2*s.* Messrs. Lougher & Co., Bank Chambers, Pontypool, Mon.

Rayne.—July 4.—For alterations, additions, and painting at the Felstead, Rayne Council school, near Rayne Railway Station, for the Essex Education Committee. Mr. G. Topham Forrest, county architect, 73 Duke Street, Chelmsford.

Rochdale.—For erection of a school in King's Road, for the Education Committee. The Secretary, Education Office, Baillie Street.

St. Martin's-by-Looe.—June 30.— For additions and alterations to the parochial schools, St. Martin's-by-Looe, Cornwall. Mr. J. G. Henwood, Great Tree, Looe, and Mr. H. R. Venning, Licentiate R.I.B.A., architect, Greenbank Lane, Liskeard.

Scotland.—June 29.—For mason, carpenter, slater, plumber, painter, and glazier works of new business premises to be erected at Commercial Road, Buckie, for Mr. R. Fraser. Mr. W. Hendry, architect, 91 West Church Street, Buckie.

Scotland.—June 29.—For the following works in connection with the erection of fifty workmen's dwellings at Cleland and 100 workmen's dwellings at Harthill, Lanarkshire, for the District Committee of the Middle Ward of the County of Lanarkshire—viz.: Digger, brick and concrete work; joiner and glazier work; slater and rough casting work; plumber and gasfitter work; plaster work; and painter work. Deposit £1. Messrs. Shearer & Marr, measurers, 219 St. Vincent Street, Glasgow.

Scotland.—June 29.—For the construction of ferro-concrete foundations and execution of joiner work and plaster work for foundation of turbo-alternator for extensions at Carolina Port generating station, Dundee, for the Corporation. Mr. H. Richardson, M.I.E.E., general manager and engineer, the Head Office, Dudhope Crescent Road, Dundee.

Scotland.—July 4.—For the mason, carpenter, slater, plaster, and painter works of reconstruction of cottages at Shougle Farm, Birnie. The Seafield Estate Office, Elgin.

Seaham Harbour.—June 30.—For erection and completion of forty-five houses, together with all road, sewer, and fencing works in connection therewith, for the Urban District Council. Deposit £1 1*s.* Mr. W. R. Robinson, assistant surveyor, Council Offices, Seaham Harbour, Durham.

Shrewsbury.—June 30.—For erection of public conveniences in the general market. Mr. A. W. Ward, A.M.I.C.E., borough surveyor, Shrewsbury.

South Killingholme Haven.—July 16.—For additions to the Council school, for the Lindsey County Council Education Committee. Send applications and £2 2*s.* deposit by July 2 to Messrs. Scorer & Gamble, architects, Bank Street Chambers, Lincoln.

Stratton.—June 30.—For erection of a Wesleyan chapel at Stratton, near Dorchester, for the Trustees. Mr. F. T. Maltby, A.M.I.C.E., architect and surveyor, South Street, Dorchester.

Sunderland.—For extensions and alterations to drill-hall premises in Livingstone Road, for the Durham County Association Territorial Force. Deposit £2 2*s.* Messrs. Wright & Chapman, architects, Newcastle-on-Tyne.

Sunderland.—July 13.—For erection of a training college, hostels for men and women, and principal's house on the Ford Estate, Hylton Road, for the Town Council. (Mr. G. T. Brown, F.R.I.B.A., architect, Sunderland.) Deposit £2 2*s.* The Borough Surveyor, Town Hall, Sunderland.

Surbiton.—For erection of a club house at The Waffron's, near Surbiton, for the Surbiton Golf Club. Mr. J. F. Palser, architect, 3 Staple Inn, Holborn, London, E.C.

Swindon.—July 6.—For carrying out extensions to the engineering laboratories at the technical schools, for the Corporation. Deposit £1 1*s.* Mr. H. J. Hamp, borough surveyor, Town Hall, Swindon.

Tadcaster.—July 3.—For the works connected with erection of bathrooms, overhead gangway, and the provision of baths, lavatory, fittings, &c., for the Board of Guardians. Messrs. Bromet & Thorman, engineers, Tadcaster.

Wales.—For erection of Wesleyan Sunday Schools in Bangor Street, Cardiff. Deposit £2 2*s.* Mr. H. Budgen, F.R.I.B.A., 95 St. Mary Street, Cardiff.

Wales.—For erection of a residence and surgery at Pentrebach, for Dr. Ryce. Messrs. Johnson & Richards, architects, Merthyr Tydfil.

Wales.—June 30.—For building thirty-five houses at Hirwain, for the Bute Colliery Building Club. Mr. A. S. Cameron, architect, 1 Glanant Street, Aberdare.

Wales.—June 30.—For alterations to the Ton and Pentre Labour and Progressive Club premises, Pentre. Send applications and £2 2*s.* deposit by June 30 to Mr. W. D. Morgan, M.S.A., architect, 194 Ystrad Road, Pentre, Rhondda.

Wales.—July 2.—For building work at Merthyr Vale, for Messrs. Frank James & Sons. Mr. C. M. Davies, M.S.A., 112 High Street, Merthyr Tydfil.

Wales.—July 2.—For erection of a vicarage house at Treharris, Glam. Deposit £1 1*s.* Mr. W. Dowdeswell, M.S.A., architect, Treharris.

Wales.—July 3.—For erection of shop premises at Abercwmboi, for the Cwmbach Co-operative Society, Ltd. Mr. T. Roderick, architect, Aberdare.

Wales.—July 4.—For erection of a vicarage in connection with Holy Trinity Church, Aberystwyth, for the Ven. Archdeacon Williams. Mr. G. T. Bassett, A.R.I.B.A., architect and surveyor, Aberystwyth.

Wales.—July 6.—For the construction of a drill hall, caretaker's house, miniature rifle range, &c., for the 4th Battalion Royal Welsh Fusiliers at Acrefair, for the Denbighshire Territorial Force Association. Deposit £1 1*s.* Mr. C. D. Rutter, M.S.A., architect, Parr's Bank Chambers, Wrexham.

Wales.—July 7.—For erection of a house at Corwen Station, for the Great Western Railway Company. The Engineer, Shrewsbury Station.

Wales.—July 7.—For erection of a parish hall and institute at Tonyrefail. Messrs. A. Ll. Thomas & G. S. Morgan, architects and surveyors, Pontypridd.

Warrington.—July 1.—For erection and completion of conveniences at Howard Place and Lovely Lane, for the Sanitary Works Committee. The Borough Surveyor, Town Hall, Warrington.

Watford.—July 6.—For erection of a pumping station, including engine house, basement, machine shop, boiler house, coal store, filter house, lime store, and softening tank, for the Watford Urban District Council. Deposit £10. Mr. D. Waterhouse, engineer, Council Offices, High Street, Watford.

Whitehaven.—July 4.—For the erection and completion of seventy-four semi-detached houses and for the construction of roadways, foot-paths, sewers, manholes, &c., required in

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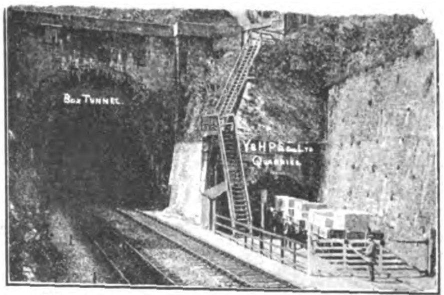

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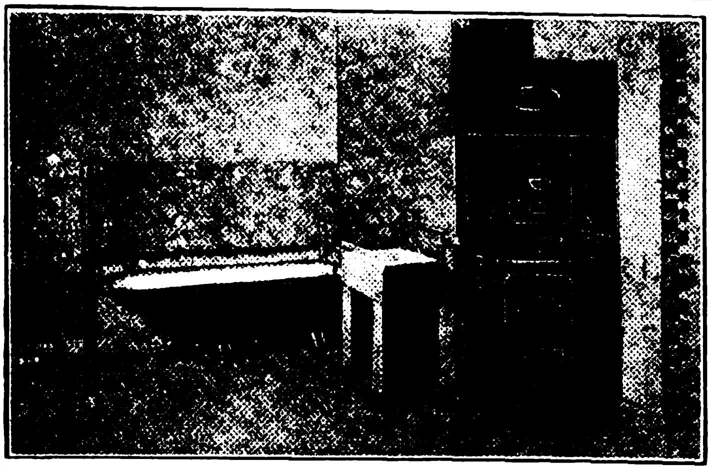

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laying out the site at Arrowthwaite, Whitehaven, for the Whitehaven Colliery Co., Ltd. Deposit £5 5*s*. Mr. J. S. Stout, M.S.A., architect, 36 Lowther Street, Whitehaven.

WILTS.—July 14.—For carrying out works in alterations, additions, repairs, and renovations, &c., at various Council schools during the summer vacation, 1914, for the General Education Committee of the Wilts County Council. Mr. J. G. Powell, county surveyor, Trowbridge.

WINCHESTER.—July 9.—For erection of a porter's office and additions to the casual wards, for the Guardians of Winchester Union. Mr. B. D Cancellor, architect, 12 Jewry Street, Winchester.

WINWICK.—For work in connection with Winwick C.E. schools. Deposit £1 1*s*. Messrs. William & Segar Owen, Cairo Street Chambers, Warrington.

WISBECH ST. MARY.—July 18.—For erection of a new school at Murrow, for the Isle of Ely Education Committee. Send in applications by July 1 to Mr. H. Farr Simpson, county surveyor, Tavistock Road, Wisbech.

YORKS.—July 2.—For the following works, for the East Riding of Yorkshire Education Committee—viz.: (*a*) erection of an elementary school at North Frodingham (accommodation 162), and alterations to the teacher's house; (*b*) alterations and additions to the Council school, Withernsea (additional accommodation ninety), with cookery room and assembly hall; (*c*) alterations and additions to the Council school at Walkington (additional accommodation fifty); (*d*) alterations and additions to the Council school at Dunswell (additional accommodation fifty). The Building Surveyor, County Hall, Beverley.

TENDERS.

ANDOVER.

For the execution of structural alterations and additions to premises, for the Co-operative Society.
F. BEALE & SONS, Andover (*accepted*).

BIRMINGHAM.

For rebuilding Northfield Public Library, for the City Free Libraries Committee. Messrs. BATEMAN & BATEMAN and ALFRED HALE, joint architects, Birmingham. Quantities by Mr. C. SILK, Birmingham.

W. & J. Webb	£1,125	0	0
Sapcote & Sons	1,066	0	0
Surman & Sons	993	0	0
Horton	991	0	0
Dallow & Sons	980	0	0
Langley	967	0	0
Nicholls	967	0	0
Briley	945	0	0
Elvins & Sons	923	0	0
Hollyoak	900	0	0
Mobbs	897	0	0
Swift	894	0	0
Dawson	887	11	7
Harper & Son	841	0	0
J. C. Hill	840	0	0
Ridout & Co.	815	0	0
J. A. TURTON, Birmingham (*accepted*)	765	0	0

BOURNE.

For the various works required in erection of a sixteen-bed isolation hospital, for the Bourne Rural District Council.

THORNHILL BROS., Lincoln (*accepted*)	£4,060	16	5

BEACONSFIELD

For the erection of the west end and three bays of nave of the church of St. Michael and All Angels, Beaconsfield, Bucks. Mr. GEO. H. FELLOWES PRYNNE, F.R.I.B.A., architect, 6 Queen Anne's Gate, Westminster. Quantities by Mr. R. HENRY HALE, F.S.I., 6 Queen Anne's Gate, S.W.

Dickens	£3,630	0	0
Smith & Sons	3,578	0	0
Webster & Cannon	3,458	0	0
W. E. Blake, Ltd.	3,320	0	0
Longley & Co.	3,288	0	0
White-Bowman	3,200	0	0
Miskin & Sons	3,181	0	0
Goddard & Sons	3,150	0	0
Walden & Cox	3,120	10	0
FRANKLIN, LTD., Deddington (*accepted*)	3,095	0	0
Gibson & Sons	3,058	0	0
Lovell & Sons	2,990	0	0

CAMBRIDGE.

For the erection of a children's home in Ross Street, for the Guardians. Mr. S. FRENCH, architect, Cambridge.

Twinn Bros.	£1,163	0	0
Kidman & Sons	1,142	0	0
Rooke & Sons	1,098	0	0
G. P. Mortlock	1,086	0	0
Bennett & Sons	1,055	0	0
BRIGNELL, Cambridge*	998	10	0

* Provisionally accepted.

ELLAND.

For the erection of the Southgate United Methodist Church. Messrs. JOHN WILLS & SONS, architects, of Derby and London.

Accepted tenders.

Crossley & Radcliffe, mason's work	£1,928	0	5
Halstead Bros., joiner's work (ordinary)	600	10	0
Halstead Bros., joiner's work (special)	496	9	6
Horsfall, plumbing, heating, and lighting	440	0	0
Rushworth & Firth, slater's and plasterer's work	254	7	4
Denham, decorating, &c.	73	18	8

IRELAND.

For the erection of dwellings on the Oblate site, for the Dublin Corporation.

Messrs. Hull & Co., with limestone, £90.087 10s. 10d.; with granite, £19,007 0s. 10d. Messrs. O'Neill & Co., with limestone, £18,918 14s 2d.; with granite, £18,892 4s. 2d.

LONDON.

For the erection of seventy-nine cottages on Section C of the White Hart Lane Estate, Tottenham, for the London County Council.

Albert Monk	£20,450	0	0
W. E. Blake, Ltd.	18,734	0	0
Marchant, Hirst & Co.	18,652	0	0
Fairhead & Son	18,369	0	0
Herbert Nicholls, Ltd.	18,249	0	0
C. P. Roberts & Co., Ltd.	18,057	0	0
ROWLEY BROS., Wood Green (*recommended*)	17,478	0	0

NEW MALDEN.

For the provision and erection of a three-cell destructor plant, for the Maldens and Coombe Urban District Council.

HEENAN & FROUDE, LTD. (*accepted*)	£3,929	10	0

LONDON MASTER BUILDERS' ASSOCIATION.

THE forty-second annual general meeting of the London Master Builders' Association, which had been unavoidably postponed, was held on June 22, and was attended by a large number of members.

The report of the Council for the year 1913-14 and the audited accounts and balance-sheet for the year ending December 31, 1913, were received and adopted.

The President reported fully upon the position existing as regards the trade dispute, and the action of the Council was duly approved.

Mr. Walter Lawrence, jun., President, and the following officers were re-elected: Mr. W. F. Wallis, Senior Vice-President; Mr. E. J. Hill, Junior Vice-President; Mr. Wm. Downs, Treasurer.

The following are the elected members of the Council: Mr. G. M. Burt (Messrs. John Mowlem & Co., Ltd.), Mr. S. J. Dicksee (Messrs. Foster & Dicksee, Ltd.), Mr. A. B. Falkner (Messrs. J. W. Falkner & Sons), Mr. F. J. Gayer (Messrs. E. A. Roome & Co.), Mr. W. Hammond, J.P., Mr. R. J. Holliday (Messrs. Holliday & Greenwood, Ltd.), Mr. H. T. Holloway (Holloway Bros., Ltd.), Mr. J. W. Jerram, Mr. J. Wolfe King (Messrs. Harris & Wardrop), Mr. F. Lown (Messrs. R. D. Lown & Sons), Mr. F. M. May (Messrs. Holland & Hannen & Cubitts, Ltd.), Mr. F. G. Minter, Mr. Geo. Neal, Mr. G. H. Parker (Messrs. Geo. Parker & Sons), Mr. J. F. Parker (Messrs. Patman & Fotheringham, Ltd.), Mr. E. D. Pratt (Messrs. J. & C. Bowyer, Ltd.), Mr. W. J. Renshaw, Mr. F. P. Rider (Messrs. T. Rider & Son), Mr. F. Shingleton, M.V.O. (Messrs. Leslie & Co., Ltd.), Mr. F. Thorne, J.P. (Messrs. Fred and T. Thorne), Mr. A. W. Turnbull (Messrs. Turnbull & Son), Mr. H. Wall (Messrs. Chas. Wall, Ltd.), Mr. F. J. Walton (Messrs. Ford & Walton, Ltd.), and Mr. W. Wood (Messrs. F. & F. J. Wood).

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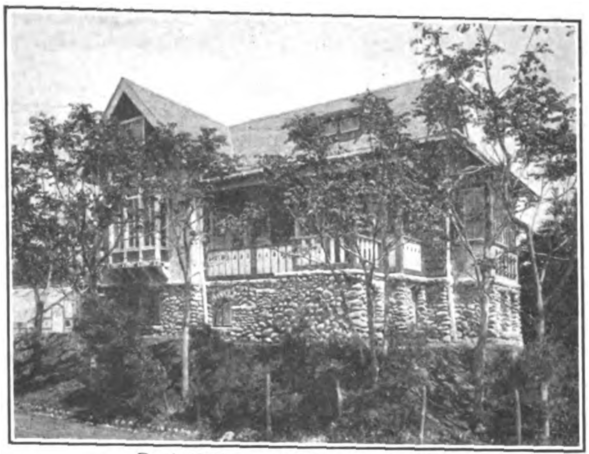

Park Office at Hibiya Park, Tokio.
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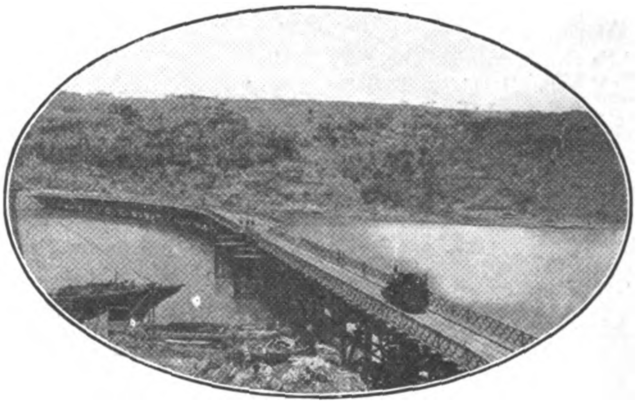

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Into the merits of this system we need scarcely go, as it is admitted on all hands to be very convenient, strong, rigid, and uncostly.

One of the illustrations shows "Mon'lithcrete" floors in course of erection at Broome Park, Canterbury, where Field-Marshal Viscount Kitchener is putting them in his house and acting as his own engineer. Another exemplifies the system applied to sewage filters at Perth, in Western Australia, and a third to big blocks of artisans' dwellings in London.

NEW CATALOGUES.

MESSRS. THOS. PARSONS & SONS, of 315 and 317 Oxford Street, London, W., in their little book on the subject of distinctive decorative work and colour, strike at once a note of refinement which is typical of their high-class paints and varnishes. It is now some nine months since this century-old firm opened great show-rooms in Oxford Street, and they have now equipped them as a permanent exhibition of what can be done with their materials. Amongst the devices is a "Colourmeter," by which 200,000 shades of colour can be produced in a few moments; when approved, a record is taken and the chosen colour is made in any of Parsons' materials and despatched within a few hours. The book briefly describes and illustrates the firm's London headquarters, and will whet the appetite of those about to decorate.

"WITCHWORK" wrought iron is handsomely and worthily presented in the new catalogue of Messrs. Witchell & Co., Endwell Works, Brockley, S.E. If our recollection is not at fault this is the most ambitious thing of the kind which this London firm of metal craftsmen have brought out. If so it would seem to indicate an increasing appreciation of their efforts. We may define "Witchwork" as wrought ironwork modernised by the introduction of wrought-iron mouldings, ornamented bars, &c. Its cost scarcely exceeds that of "undecorated" ironwork, because the extra labour entailed is almost negligible, and the cost of the special "raw material" is comparatively small. It will be obvious that the artistic effect of "Witchwork" depends on the care with which its possibilities are handled, for applied ornament is easily open to abuse. Fortunately Messrs. Witchell & Co. are excellent craftsmen, and may be depended upon not to exceed good taste. This catalogue, with its distinguished lettering and examples of lift cages, doors, grilles, gates, &c., may be taken as a criterion.

WHATEVER may be one's political views, and especially those centering on Tariff Reform or Colonial preference, there can be no room for anything but satisfaction when an English firm builds up a flourishing Colonial connection. This praiseworthy achievement has been done by the Canadian Branch of the Leeds Fireclay Company, Ltd., who have prepared an interesting catalogue showing buildings erected both in Canada and England in Burmantofts "Marmo" and Burmantofts "Vitreous" and "Ordinary" terra cotta. "Marmo" has already been used on many large and important Canadian jobs such as the Union Bank at Toronto and the Winnipeg branch of the Bank of Nova Scotia The photographs show how admirably this material can respond to any new feeling in architecture as well as follow conventional lines. It is, after all, but lumpish clay until it receives the life-giving touch of the potter. Architects can now choose and vary at will their colour, shapes and detail. It is scarcely surprising to learn that "Marmo" has been successfully applied to buildings in all parts of the world. Further recommendations are that its "matt" surface is impervious, unaffected by atmospheric conditions, and is lasting in quality. These qualities are shared in by Burmantofts terra cottas. An imposing example of the successful use of the latter is the Linton Apartments, Montreal; others may be found dotted over this vast colony from Toronto to Vancouver.

THE Woodura Compositions Co., Berkeley Works, Glasgow, have sent us a neat booklet called "Flooring Arguments," which sets out convincing reasons why Woodura should be laid down on all kinds of floors, and more particularly on surfaces subjected to hard wear and tear. For the most eloquent argument of all one may turn to the last page, where a tightly packed list is found of some of the users of this jointless composition in England and Scotland; many of these have given two or more further orders. We are particularly struck by the line, "Calico Printers' Association, Ltd., Manchester. 11 repeat orders," for it carries conviction such as no mere verbiage could do. Woodura adheres to wood, iron, steel, or concrete, and, whatever the character of the old flooring, a perfectly even, fire-resisting, and durable result may be obtained. It can be put down without the slightest disturbance of existing arrangements or removal of plant, and lends itself to any kind of design giving an excellent inlaid effect.

ARCHITECTS or builders and their clients who admire dog-grates, and their number must be legion, will enjoy the new lavishly illustrated catalogue issued by George Wright, Ltd., which deals solely with this delightful form of room decoration. The makers have a wide field and many centuries to draw upon for patterns. Many of those shown are replicas in every detail of old-pattern dog-grates, modernised only as concerns fuel consumption—*i.e.*, bottom grate and firebrick linings. The antique firebacks are reproduced from original old Sussex or Flemish firebacks in Messrs. George Wright's possession. Particulars and sizes are given to each of the examples, but in most instances the dimensions can be varied to suit the requirements of space.

WE have recently received from Messrs. Kerner-Greenwood & Co., of King's Lynn, a booklet dealing with the waterproofing of lime. The need of such a material for use with lime in setting and pointing ancient and modern stone and brickwork, for roughcast walls rendered with lime, and for obtaining a white joint for modern brickwork, is recognised. The booklet deals with the substance called Lime Pudlo, which is a by-product of the firm's well-known Cement Pudlo. Lime Pudlo has been found by tests to prevent disintegration of lime mortar by frost.

THE business of Messrs. S. W. Francis & Co., Ltd., of Gray's Inn Road, W.C., has been in existence just sixty years. Their 1914 catalogue shows them to be, however, fully alert and eager to receive further orders for revolving shutters of all descriptions, and for shop fronts and fittings generally. Illustrations and descriptions of their various specialities are given in the fifty pages. The firm are not unreasonably proud of the fact that Royalty figures on their books as well as countless humbler folk. Many orders have come, too, from abroad.

NEW central offices for the Manchester Unity of Oddfellows are to be built on the site and extensions of the present offices in Grosvenor Street, Manchester, which were opened about 1858. It is expected that the building operations will begin in about two months. The cost is estimated at £15,000.

STEPS are to be taken at once for the rebuilding of Breadsall Church, which was recently destroyed by fire. A committee is being formed to raise the money required, as the damage far exceeds the sum the church was insured for. Mr. W. D. Caröe, architect to the Ecclesiastical Commissioners and consulting architect to the Derbyshire Church Extension Society, has been asked to report on the state of the ruins, and the best lines on which to restore the church.

THE Incorporated Church Building Society at its latest monthly meeting made grants of money in aid of the following objects—viz.: Building the new church of St. Cyprian, Kirkmanshulme, Manchester, £150; and towards enlarging or otherwise improving the accommodation in the churches at Blidworth, St. Mary, Notts, £30; Loveston, St. Leonard, Pembs., £50; and Newbiggin, St. Bartholomew, Northumberland, £80. A grant of £35 was also made from the Special Mission Buildings Fund towards erecting a Mission Church at St. Mark, Teddington, Middlesex. In addition to this the sum of £70 was paid towards the repairs of churches from Trust Funds held by the Society.

VARIETIES.

The Llanelly Guardians are purchasing a site at Pencilogi for the purpose of erecting a new infirmary.

Erpingham Rural District Council are about to erect working-class dwellings.

The Barry Housing and Town Planning Committee have decided to proceed with the erection, at a cost of £200 each, of twelve workmen's dwelling houses.

The Blaina and Nantyglo Urban District Council are awaiting the decision of the Local Government Board as to their application to borrow £25,000 for the erection of houses.

Southampton Corporation are considering the question of the construction of an additional reservoir at Bassett at an expenditure between £22,000 and £23,000.

The architect for the laundry and cookery centre which the Ipswich Corporation Education Committee is about to erect is Mr. Harold Hooper.

Considerable building operations are to be commenced shortly for Mr. S. A. Hardrow in Shanghai, China. This should prove a good market for British goods connected with the building trades.

The new docks at Hull, costing two millions and a half, carried out by Messrs. S. Pearson & Sons, Ltd., of Westminster, under the supervision of the joint engineers, Messrs. T. M. Newell and Mr. R. Pawley, are to be opened to-day by their Majesties the King and Queen.

The Brighton Town Council have adjourned till next week consideration of the report recommending the erection of a Concert Hall on the Aquarium site at a cost of £25,000. A statement of the accounts of the Aquarium and orchestra joint undertaking for the past year was presented, showing a loss of £6,000.

The Evesham Rural District Council at their meeting on Monday last purchased a building site at a cost of £80 per acre at Bretforton. Plans for the erection of twenty cottages on the site were approved, and it was agreed to ask the Local Government Board to sanction a loan of £3,370 for the houses and land. A tender of £4,099 was accepted for the Littleton housing scheme.

The Bedwas and Machen District Council recently received from the Local Government Board their report on the recent inquiry. The Board have come to the conclusion that the need for further houses has been proved, and the Council should have taken action to build earlier. The Board sanction the erection of twenty-five houses at once, and suggest the Council should acquire sufficient land for future developments.

Messrs. W. Somers & Co., of Haywood Forge, Hales Owen, have under consideration a proposal to erect a number of houses in the vicinity of their works, which it is hoped will help materially to solve the housing problem in the district. At present there is a remarkable scarcity of houses, and the Medical Officer of Health, in his annual report issued a few days ago, called attention to the fact that at least 128 new houses are required immediately.

The New Palace Steamers, Ltd., of 77 King William Street, E.C., once more announce their popular sailings. The *Royal Sovereign* is leaving Old Swan Pier daily at 9 a.m., calling at Tilbury, Southend, Margate, and Ramsgate (Fridays in June excepted), while her sister ship, the *Koh-i-noor*, will commence the sailings to Deal and Dover on Sunday, July 5. The popular "Husbands' Boat" starts on Saturday, July 4, and will continue throughout the season. The fifteen-day circular ticket by the South-Eastern and Chatham Railway, down by boat and back by rail, has again been arranged. The steamers, having received their annual overhaul, again present their usual attractive appearance.

The seventh edition of the "Timber Trades Directory," a work of unique value to all engaged in or connected in any way with the timber trades, has just been issued. The arrangement is alphabetical throughout, under the following sections: London and District, the Provinces (arranged in counties), Wales, Scotland, and Ireland. The foreign section of importers and exporters in the various foreign countries and colonies illustrates how much the British markets depend on foreign countries for their wood supplies. The value of the volume is much increased by the plans of the principal timber-receiving docks in the kingdom. This useful reference book is published by Messrs. William Rider & Son, Ltd., 8 Paternoster Row, London, E.C., price 7*s*. 6*d*.

Of quite peculiar interest will be the sale in London, at the Mart, Tokenhouse Yard, E.C., on Wednesday, July 8, of some of the Chelsea properties of the late Dr. Phené, locally known as the "Hermit of Chelsea," concerning whom many romantic stories were afloat. The first lot will be Old Cheyne House, standing midway between the King's Road and the River Thames, and abutting upon the quiet and shaded Upper Cheyne Row, to which it has a frontage of 226 feet. This old-world place remains one of the last witnesses of the times when Chelsea was far removed from the bustle of the great City. It used to be said the house had been prepared by Dr. Phené (although erected many years earlier) for a bride who never lived in it. Certain it is that it has stood unoccupied for many years, and was allowed to fall into decay. According to the conditions of the sale, the purchaser must spend at least £1,000 in putting Old Cheyne House into such a condition as will preserve its general character. Another lot is the "Mystery" or "Renaissance" House, conspicuous at the corner of Oakley Street and Upper Cheyne Row. This curious freak was erected by the eccentric doctor, who covered the principal front with features from the "Chateau de Savenay," his ancestral home in France, and incorporated in it many items from his foreign tours. The next six lots will be a valuable block of building land having a total frontage of 140 feet to Oakley Street. Lot 10 will be the old brick and pan-tiled cottage at 51 Glebe Place, which is understood to have been a hunting lodge of Henry VIII., and which must be maintained intact. The remaining seven lots are sites particularly suitable for residences or studios. Messrs. Tyler & Co., 45 Holborn Viaduct, E.C., are acting as the auctioneers.

TRADE NOTES.

Under the direction of Messrs. A. F. Scott & Son, architects, Norwich, Boyle's latest patent "air-pump" concealed ventilators have been applied to the new P.M. Church and School, Castle Street, Cambridge.

Messrs. John Smith & Sons, Midland Clock Works, Derby, have just completed the erection of a very large chiming clock in Cannington Church, near Bridgwater, and a large Westminster quarter clock and bells for a church in Australia is now being shipped to Sydney. They have also erected the new clock with four dials for the Bacup Co-operative Stores.

Messrs. Wilson & Co., 79 Queen Street, Cheapside, E.C., have been successful in securing the contract for the asbestos-cement sheets and tiles required for the new barracks at Farnborough They have also an Admiralty contract for two seaplane sheds.

"Res-tor" is a name coined for a patent cement which has within the past few years been gaining an increasing reputation for use on decayed surfaces. It is applied as a coating of any required colour to brickwork, stone, wood, tile, or other material, and acts as an excellent preservative and resistant to the disintegrating effects of the atmosphere. "Res-tor" is obtainable either ready mixed in iron kegs or dry in bags from the manufacturers, the Res-tor Cement Company (Messrs. Pennington & Co.), 93 Greenfield Road, St. Helens, Lancs.

The Phœnix Engineering Company, Ltd., Chard, will be exhibiting at the Royal Agricultural Show to be held at Shrewsbury from June 30 to July 4 a variety of their well-known high-capacity hand pumps. For general contractors' work and rough usage they recommend the "Floodgate" and "Highland" types; both are well-tried, and are stocked in different capacities. Another feature of Stand 270 will be a sample of their tar boilers and of their tar-spraying machines.

A number of important contracts have lately been carried out with "Ceresit" as the waterproofing material. The British Ceresit Waterproofing Company inform us that the following are a few of the jobs in the North of England: Basement and retaining walls of the Manchester Royal Infirmary extension; walls and concrete roof of the Wallsend-on-Tyne electric-power station; floors and basement of new Council school at Clitheroe; basement of the Co-operative Wholesale Society's grain silo at Trafford Park; strong room at Silverdale; the walls at Lloyds Bank, Whitley Bay; rough casting and concrete work at Whalley Asylum; concrete roof of the Gateshead-on-Tyne electric sub-station; and waterproofing basements, retaining walls, parapet walls, verandahs, &c., of the Rochdale Infirmary extensions.

Architect and contract reporter.
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